WORKING OUTSIDE THE SQUARE WITHIN:

A HISTORY OF ENVIRONMENTAL EDUCATION CENTRES WITHIN THE NSW DEPARTMENT OF EDUCATION (1970-2017)

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A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy in Education

March 2020

This research was supported by an

Australian Government Research Training Program (RTP) Scholarship

ACKNOWLEDGEMENTS

The degree to which this story needed to be told was clear after working with certain environmental education centres in a research capacity with Associate Professor James Ladwig. There was a desire to contribute to environmental education in some way, and also, like James and many others in the field, I did not want to see this history fade into obscurity, silenced by time. I would like to thank James for his academic and ecocentric knowledge, understanding and skill as well as his wise counsel and patience in guiding me through this PhD process. I have learnt so much on an academic and personal level. I am forever grateful.

I would sincerely like to express my heartfelt thanks to all of my research participants, from those who filled in my initial online survey, or made contact via email, to those who gave up hours of their time or squeezed the time they could afford into their busy schedules. Your dedication to your craft is exemplary. Thank you for your participation and patience. Appreciation is also extended to Mark Caddey and the Australian Association for Environmental Education for their assistance in promoting the study and online-survey in the AAEE E-bulletin and for making the AAEE archives available at an opportune time.

Hannah and Gabrielle Byrne, I hold great gratitude for your constant support and abiding faith in me. I am forever thankful for two daughters who are such wise and wonderful people. Gratitude is also extended to friends and family for their ongoing support throughout this PhD process. Your encouragement sustained many long hours of solitary study. Dearest Anna Kaemmerling, my word counter, thank you for your great support throughout this journey. I am forever indebted to your pragmatic nature—a realistic vision of an unwieldy narrative in a given timeframe—a rational assessment of the progress required. And Michelle Lott, our Saturday morning Curly catch-ups provided much relief and sustenance. Thank you.

I would similarly like to thank those who assisted me with editing and advice: Krista Thompson, Professor Annette Gough, Associate Professor Nicole Mockler, Hedy Fairbairn, Fiona LaSpina and Claire Williams. Thank you for keeping me on track with academic writing, logic, grammar, referencing conventions and advice throughout various stages of this study. Greatly appreciated.

Finally, I would like to pay tribute to Harrold Judd, the ranger at Minnamurra Falls many years ago. I experienced Harrold's skill in connecting people with the natural environment—one of my "aha!" moments. While I had grown up playing in the bush like many in the 70s in country Australia, and had studied biology, it was Harold who opened my eyes to ecological connections and planted the seed for further exploration.

STATEMENT OF ORIGINALITY

I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

Anne Marie Ross

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ABSTRACT

Environmental education began in the late 1960s to early 1970s. At the same time, the NSW Department of Education started establishing field studies centres, later known as environmental education centres. They started developing and disseminating environmental education. Evolving from nature study and conservation education, environmental education crucially encompasses an action component of being "for" the environment as well as "about" and "in" the environment. The environmental education centres have embodied and encompassed that evolution. Antithetical to traditional forms of formal education, environmental education incorporates an intrinsically holistic, socio-political character. Centre environmental educators are unique professionals within the state education workforce who provide both a relevant connection between land, water and pedagogy, and essential support for educating for sustainability. Within this context, there are lessons to be learnt about the vagaries of the state political system and how environmental education centre personnel implemented change within that system. Over the last 20 or so years, many key environmental educators from within the NSW environmental education centre system have retired. Many of these people were very experienced within the environmental education centre network and were instrumental in progressing the development of environmental education/education for sustainability and the work of the centres within NSW. With history informing how things play out in the present day, it seems an important time to study the history of environmental education in NSW. This historical analysis narrates the establishment and development of these centres, and environmental education/education for sustainability, through the phenomenon of the 1970s growth in socially conscious governance, to the public managerialism of the 1980s and 1990s, into the tightening tentacles of neoliberalism. With an action-oriented ethos, the centres have made a significant contribution to shifting the agenda toward a more sustainable future, connected to our environment relative to a world heavily influenced by our consumeristic society.

GLOSSARY OF ACRONYMS

AAEE	Australian Association for Environmental Education
ACT	Australian Capital Territory
AEE (NSW)	Association for Environmental Education
ASEA	Australian Education for Sustainability Alliance
AuSSI	Australian Sustainable Schools Initiative
ACARA	Australian Curriculum Assessment and Reporting Authority
CDC	Curriculum Development Centre
CEO	Chief Education Officer
CSIRO	Commonwealth Science and Industrial Research Organisation
EE	Environmental Education
EEC	Environmental Education Centre
EfS	Education for Sustainability
EPA	Environmental Protection Agency
ESD	Education for Sustainable Development
EZEC	Environmental and Zoo Education Centre Network
FPP	Fauna Protection Panel
FSC	Field Studies Centre
KLA	Key Learning Area
IUCN	International Union for the Conservation of Nature and Natural Resources
NCAS	National Conservation Strategy Australia
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NSW EPA	NSW Environmental Protection Authority
QLD	Queensland
SS NSW	Sustainable Schools NSW
TAFE	Technical and Further Education
UNEP	United Nations Environmental Program
UNESCO	United Nations Educational Scientific and Cultural Organization
US	United States

CHAPTER 1: INTRODUCTION AND METHODOLOGY

> *We need to know the stories of which we are a part and to develop contextual or situated knowledges.*
>
> (A. Gough 1997, 164)

Whilst many Environmental Education Centres (EEC) exist within various organisations throughout the world, it is rare for a large number to occur within a specific education system, as is the case in both the New South Wales (NSW) and Queensland (QLD) Departments of Education. Environmental Educators working in these Centres are unique professionals within the state education workforce who provide both a relevant connection between land, water and pedagogy, and essential support for educating for sustainability. Within this context, there are lessons to be learnt about the vagaries of the state political system and how EEC personnel implemented change within the state education system.

Over the last 20 or so years, many key environmental educators from within the NSW EEC system have retired. Many of these people were very experienced within the EEC network and were instrumental in progressing the development of Environmental Education (EE), Education for Sustainability (EfS), and the work of the centres within NSW. With history informing how things play out in the present day, it seems an important time to study the history of EE in this state.

> *New social concerns generate new intellectual and historical problems. Conversely, new interpretations of the past provide perspectives on the present and hence the power to change it.*
>
> (Merchant 1980, xvi)

The title of my thesis, "Working outside the square within" refers to the apparent ability of educators within EECs to produce effective environmental education/education for sustainability, generally utilising pedagogical tools that are the epitome of valuable pedagogy, whilst evolving within an increasingly neo-conservative globalised political, social and economic environment. Whilst EE is counter-hegemonic, these Centres seem to have played a pivotal role in the dissemination of EE/EfS within our society. Given the

current pressing needs, and the relative success of the EECs, it is vital to learn from them how they managed to make the gains they did.

One way to increase our understanding of the current nature of EECs and EE/EfS generally, education system constraints and enablers, partisan politics and changing social viewpoints, is through a study of the specific history of NSW EECs. Given that EE/EfS is still wanting in our current consciousness, this study will contribute to the changing cultural challenges surrounding and dwelling within EE/EfS and EECs specifically. Informing this study is an examination of the shifts in curriculum and pedagogy in NSW throughout the period 1972-2017.

The goal of this study is to investigate how NSW EECs, whilst operating within the state public education system, have contributed to a more ecologically sustainable world paradigm within the state. The study will analyse the struggles of EECs in doing what they did and draw on Weber's archetype of rationalism—in this case, the NSW Department of Education serves as an archetype of Weber's analysis of bureaucratic reasoning. Findings will contribute to the understanding of this phenomenon.

Statement of Aims

- This thesis develops a representation of the social and political context in which EECs were established and within which their associated educators enacted EE/EfS over time.
- In developing this topography, I have identified the inhibitors and enablers of transformative EE/EfS throughout the evolution of EECs.
- Through this exposure, I have highlighted FSC/EEC educator perspectives on efficient and effective EE/EfS pedagogies and pedagogies in general.

Research Questions

1. How have NSW EECs functioned and changed over time?
2. How have EECs contributed to evolving EE/EfS within their communities and within the curriculum?
3. What might we learn from the history of these institutions in regard to effecting change within a large bureaucracy such as the NSW Department of Education?
4. What influence did external factors have (inhibiting or enabling)?

Methodology

This study is the construction of a historical narrative about the establishment and development of EECs within the NSW Department of Education and the people who made it possible. The aim of this section is to identify the study methodology—the broader ontological, epistemological, and theoretical framework that surrounds and underpins the study, thus establishing an agenda of careful reasoning that will shed light on the questions raised. How does one make sense of associated historical records and recounts? How best to create a history of these EECs which is valid and reliable—one that has credibility in the world of histories. This thesis, within a qualitative research methodology, requires transparency in relation to the ontology and epistemology which nourish interest in this area. Given that historians can use theory incidentally and selectively to identify their informal personal theories, and that major theoretical positions in related disciplines can be relevant to historical methodology (Kaestle 1988), a theoretical standpoint is required.

First, however, to understand the context in which this study eventuated, a brief history to situate my position as the writer. I have a personal background spending many hours in the natural environment, an applied science degree majoring in environmental analysis (BAppSci), a post graduate education qualification (DipEd), and experience in the field of environmental consultancy, environmental education, education and education research.

Additionally, my principal supervisor, educational sociologist Associate Professor James Ladwig, also well-grounded in the natural environment, had a close association with the NSW Environmental Education Centres and the now defunct Environmental Education Unit.

My initial experience included conducting bird surveys and writing annual reports, bush regeneration, and volunteer work, including environment education, as a member of the Illawarra Catchment Management Committee. On moving to Newcastle in 1996, I worked as an environmental officer at the Northern Railway Services Authority about the time when environmental management was beginning. Later there were years of experience on the Trees in Newcastle management committee, including roles as secretary, treasurer, vice-president and facilitator of an urban forest sub-committee. While completing a TAFE bush regeneration course, the pressing need for environmental education become even more startlingly apparent. I wanted to help people who were disconnected from their environment to become connected, and help those who were already connected to forge an ecocentric future. At this time, I landed in a trajectory of a teaching qualification (secondary science), along with research work within the School of Education at the University of Newcastle.

As a casual academic, I developed a fourth-year elective, “Educating for Ecologically Sustainable Communities” (lectures, assessments and fieldwork days) with the support of the course coordinator, Associate Professor Ruth Reynolds. EE/EfS educator input was sought from Associate Professor James Ladwig, Professor Jo-Anne Ferreira and Dr Julie Kennelly. I fulfilled the role of lecturer and Callaghan fieldwork organiser from 2012-2014. In 2008, in a research capacity, I had undertaken a Quality Teaching Evaluation of the Earthkeepers Program at Gibberagong EEC with Ladwig. In addition, I worked on the literature review/analysis of EE/EfS literature for Ladwig's paper “Beyond Academic Outcomes” which won James the best review of education at the American Educational Research Association in 2011. Managing the NSW School Climate Change Initiative Evaluation for chief investigators Ladwig and Associate Professor Nicole Mockler (2009-2010) brought me into close contact with the NSW EECs. There was a general understanding of the importance of capturing the story of the establishment and development of the EECs before the history faded into obscurity, silenced by time. Having experience in EE, research, and advocacy, the

opportunity to do more than occasionally contribute to a changing world paradigm through a study on the history of EECs was appealing, and thus this study began to take form.

Theoretical Standpoint

An illustration of how the scientific revolution has contributed to a disconnect from nature can be found in Caroline Merchant's[1] book titled *The Death of Nature: Women, Ecology, and the Scientific Revolution* (1980). These days, this detachment is being aided and abetted by our consumerist society. From as early as the 1970s, however, the belief in science and technology as a panacea for environmental problems had been increasingly called into question by the science fraternity itself (A. Gough 1997).

> *The suggestion that all our problems will be solved through further scientific research is not only foolish, but in fact dangerous – the environmental changes of our time have arisen out of the tremendous intensification of the interaction between cultural and natural processes.*
>
> (Boyden 1970, 18)

Yet, whilst there was a move away from environmental problems being seen as solely scientific problems with scientific solutions, to a holistic citizenry ownership (for example see the gradual shift of EE inclusion in subjects other than science and the integration of EE across subjects), we still live in a science and technology paradigm. This can be demonstrated by the adherence to and dominance of "evidence-based positivist research" (Stevenson 2013, 151) in this political climate, and potentially drastic measures such as the geoengineering of climate change solutions (Withgott and Laposata 2012, 322) when current hegemony has not fully embraced much simpler measures that involve paradigmatic change.

[1] It is important to note the parallel feminist movement in the 1970s. Ecofeminism and the work of scholars such as Gough (Greenall), Di Chiro and Merchant are important contributions to EE/EfS and while they have not been developed within this study, they need to be acknowledged.

The Environment, Sustainability, EE and EfS

The study of the environment is multidisciplinary, encompassing ecology, geography, biology and chemistry to name a few, and is linked to these multidisciplinary languages that are further shaped by broader social issues.

> *Ecosystems are complex, and our knowledge of them is limited, as the biological scientists who study them are the first to admit. Human social systems are complex too, which is why there is so much work for the ever-growing number of social scientists who study them. Environmental problems by definition are found at the intersections of ecosystems and human social systems, and thus are doubly complex.*
>
> *The more complex a situation, the larger is the number of plausible perspectives upon it – because the harder it is to prove any one of them wrong in simple terms. Thus, the proliferation of perspectives on environmental problems that has accompanied the development and diversification of environmental concern since the 1960s should come as no surprise.*
>
> (Dryzek 2005, 9)

Synergies in the "environment" can be linked to include the emergence of the global perspective, cybernetics and systems thinking, developments in ecology, increases in industrial powers to exploit and transform matter, increasing numbers of pollutants/disruptions to our environment, resource depletion linked to post war economic boom, and recognition of our finite resources (Berryman and Sauvé 2013, 134). The complexity of environmental issues is mirrored within EE, especially given its counter-hegemonic nature and particularly within the formal education system which is entrenched within our rationalist, scientific, capitalistic, consumerist society. The counter-hegemonic nature of EE was recognised early in EE/EfS development.

> *Environmental education is concerned with counter-hegemony or social reconstruction and it is argued that it has been subjected to incorporation within the existing hegemony in a neutralized form – the radical "action" component having been deleted and the less controversial cognitive and skill ones resined (sic), together with the name environmental education.*
>
> (Greenall 1981b, 53)

Despite missing some of the distinguishing objectives of EE, these programs were still categorised as EE. Whilst there were increases in environmental content within many subjects in the traditional curriculum of Australian schools, there was little evidence that such courses were considering "the more controversial political and moral aspects and collective

responsibility inherent in environmental education" (Greenall 1981b, 53). Greenall saw future commitment to curricula wholly incorporating these changes as even less likely.

> *As long as such action is countenanced, as it certainly is at present by the education authorities who, although professing a strong belief in environmental education, are loathe to stress its moral and political components, then the introduction of environmental education in its full meaning into schools will be negligible.*
>
> (Greenall 1981b, 53)

Further,

> *In addition to this confusion, incorporating environmental education into the curriculum in whatever form under whatever name will involve radical changes in the teaching methods, styles and organization of most schools.*
>
> (Greenall 1981b, 53)

An example of the struggle for EE against the dominant hegemony is the growth of sustainable development in the 1980s (Berryman and Sauvé 2013; Dryzek 2005). Now dominating EE with its triple bottom line of ecological, social and economic sustainability, although these were already encompassed within EE, the subject was orienting towards a broader outlook that did not necessarily cover all the distinctions of environmental issues (Berryman and Sauvé 2013, 133). Ecological modernisation arose, with environmental protection seen as "essentially complementary" to economic growth (Dryzek 2005), and EE was subsumed within EfS or education for sustainable development (Berryman and Sauvé 2013, 139).[2]

Thus, we come to the need for a critical approach to this study. Critical analysis appears to be the most appropriate approach with which to uncover the contradictory position in which the NSW EECs are positioned in their history within the NSW Department of Education. Modern critical inquiry has a Marxist heritage (Crotty 1998) with Marx laying the

[2] Whilst there has been significant scholarly discussion about EE/EfS and ESD terminology, this thesis avoids using the term ESD. This is due to a desire not to give the term ESD space, both literally and figuratively, and to avoid getting caught up in a terminology debate. Significantly, it is also in concurrence with Dryzek (2005) and other scholars who view the natural environment and development as contrary terms.

foundations by successfully fusing philosophy, history, and economics, and actively criticising the power structures within society (Crotty 1998; Marx 1961). The Frankfurt School (major thinkers being Max Horkheimer, Theodor W. Adorno, Walter Benjamin, Herbert Marcuse, Erich Fromm, and Jürgen Habermas) developed critical theory as a framework for analysing how power, control and discrimination structures within society are mediated through language, and an understanding of the role and activity of the "knowing subject" in these processes (Pautanen and Kovalainen 2010). Research informed by critical theory has the following characteristics:

- it is simultaneously explanatory, practical, and normative,
- it explains the object of study in a nomological, interpretative, or historicist way,
- it is practical and not abstract, and
- the results should indicate what ought to be.

(Pautanen and Kovalainen 2010)

Critical theory seeks not only to understand but to challenge, expose conflict and oppression, and to bring about change (Crotty 1998). The critical theory and critical pedagogy within the qualitative research structure are based on a historical realism ontology, a transactional epistemology—a practice of arriving at the truth by the exchange of logical arguments (Denzin and Lincoln 2011). A rigorous and tentative context with the notions accessible through Marxist examinations of power and critical theory's location and denunciation of power is engaged to obstruct traditional noncritical research methodologies (Kincheloe, McLaren, and Steinberg 2011).

While this study has metamorphosed into an historical narrative, it reveals the tension between EE/EfS and economic rationalism, the hegemony in which our society is situated. Thus, I place vying for the conservation of the environment and EE and EfS squarely in the camp of the oppressed. In this regard, it has something in common with feminist history:

> *Feminist history in the broadest sense requires that we look at history with egalitarian eyes, seeing it anew from the viewpoint not only of women but also of social and racial groups and the natural environment, previously ignored as the underlying resources on which Western culture and its progress have been built.*
>
> (Merchant 1980, xvi)

A critical stance is required to consider how many of the detrimental effects of environmental degradation are played out on oppressed minorities, and critical theory is the theory of choice for those studying oppression. For an example of the oppression of people and the environment, I quote from Thomas King. When discussing contemporary Native written literature and ethnographers and anthropologist interpretations of Native oral stories, Thomas King (2005) in *The Truth About Stories: A Native Narrative*, says,

> *The land as a living entity has become a mantra for industries that destroy the environment. Mother earth, a potent phrase for Native people, has been abused to the point where it has no more power or import than the word "freedom" tumbling out of George W. Bush's mouth.*
>
> (King 2005, 114)

Whilst this quote is about the US context it holds just as much relevance here with the educational green-washing and green-washing in general (without touching on the treatment of our indigenous populations) within the Australian system (Beder 2002; Devauld and Green 2010; Gillespie 2008; Rimmer 2012). With EE finding its way through/out of the dominant discourse hegemony, it is understandable that critical theory has been instrumental in the evolution of research in EE. From its inception, EE researchers wanted to break free of the old scientific rationalist methods.

> *There is a general concern that we do not unconsciously carry into our new philosophies and methodologies the very dysfunctions which led to our environmental problems in the first place.*
>
> (Hoffmann 1994, 71)

In the infancy of EEs establishment there was a search for paradigms that recognised the fundamental interrelatedness of all forms of life, paradigms of knowledge and enquiry suitable for the emerging environmental problems. Contrary to classical rationalist external observation in this/these new paradigms, enquirers themselves are part of the environment (Hoffmann 1994). Indeed, a symposium was held at the North American Association for Environmental Education, San Antonio, Texas in 1990, with the expanded proceedings

published in 1993, titled *Alternative Paradigms in Environmental Education Research* (Mrazek 1993a). This symposium/monograph eventuated because there was considerable doubt about the match between the EE research being produced/promoted and that which was needed. In a nod to inclusion, the title was altered from "Contested paradigms", though Ian Robottom noted in his contribution that some educational concepts require contesting and continual critical discourse and debate (Mrazek 1993b; Robottom 1993).

In the context of EE/EfS, it is important to understand that big changes in globalisation, research and teaching started taking place about the time of its inception in the late 1960s. International organisations and intergovernmental conferences played, and continue to play, a major role in local EE/EfS policy development (Stevenson 2013). Changes to research and teaching impacted on the fledgling EE/EfS research discipline that basically grew from the science disciplines (Disinger 1993; A. Gough 1997; Mrazek 1993c). Initially only the scientific method was regarded as a legitimate research approach. However, making sense of the world through understanding the cognitive structures that enable us to do so (the cognitive turn) and the role that language plays in our constructions of our world (the linguistic turn) became increasingly legitimate research methodologies in the social sciences and humanities (Stevenson and Robottom 2013, 472).

> *New research paradigms usually emerge in response to perceived limitations of and challenges to existing ones.*
>
> (Stevenson and Robottom 2013, 472)

Understandably, Critical Theory is the theory of choice for many EE/EfS researchers—Annette Gough, Bob Stevenson, Ian Robottom, Jo-Anne Ferreira and John Fien to name a few. Regula Kyburz-Graber in her article on socioecological approaches to EE and research, talks of "criticality" being a key element in EE related socioecological approaches (Kyburz-Graber 2013, 26). She also talks about "critical thinking" as an important element of EE/EfS, and its relationship to philosophical traditions of "Critical Rationalism" and "pragmatism."

> *The common basis of the two conceptions (thinking and pedagogy [from Critical Theory]) of "critical" is the assumption that reality exists, but most people have more or less subjectively distorted views of it.*
>
> (Kyburz-Graber 2013, 27)

Whilst the present study is a history and it is not necessary to "move outside the academy and develop partnerships with schools and communities" (A. Gough 2013b, 11), evidence of EECs that have branched out into their communities will be important indicators. In addition, action research methodology identifies and creates spaces for engaging educators in the discourse (Stevenson 2013, 153) so that it is constructed "collectively" to "directly improve practice" and intends to "produce change as well as understanding" (Stevenson and Robottom 2013, 472). Identifying action research methodology and its pedagogical equivalent, action-based learning within this study will also be an indicator of good EE/EfS practice.

Within this research, aspirations include:

- problematising the orthodoxies of beliefs and practices (Ferreira 2013),
- thinking globally without enacting some form of epistemological imperialism (N. Gough 2013),
- profoundly questioning real-life situations in view of socially constructed human-nature relationships (Kyburz-Graber 2013),
- being on the lookout for learning settings/activities/situations that encourage critical investigation and reflection of environmental questions and the kinds of contextual knowledge that are produced (Kyburz-Graber 2013), and
- engaging in global knowledge production that creates conditions under which local knowledge traditions can be performed together, conscious of not privileging Western knowledge systems.

Generally, the embracing of reflexivity in research practice is sought to "open up new avenues for recognising the working of power in the ways we construct our world and its possibilities (and toward) developing more effective social change practices" (A. Gough 2013b, 11). In line with the wishes of the editors of the *International Handbook of Research on Environmental Education*, Robert Stevenson, Michael Brody, Justin Dillon, and Arjen Wals (2013, 516), there is a desire for this research to, "break away from the classic separations of disciplines, generations, cultures and formal, informal, and non-formal

learning, and reveal more compelling possibilities for addressing sustainability issues and the challenges of learning to live more sustainably."

Historical Narrative

History is complicated by definitions and value judgements and involves creative interpretation influenced by the historian's values, interests and training. Thus, history is part science, part art. Fragmentary evidence establishes some limits while the rest remains subjected to a certain degree of influence. Educational history is value laden. There can be a "heightened sense of the precariousness of historical generalisations" (Kaestle 1988, 120). Established educational history had embedded assumptions that need consideration when writing a history: one is that education is concerned with public school institutions alone, and second, that "state-regulated, free, tax-supported, universal schooling was a good thing" (Kaestle 1988, 120). These assumptions call for reflexivity in:

- the inclusion of the whole community within the frame of education rather than a focus on the formal schooling in isolation, and
- a distinction between intent, consequences, and the situatedness of context within time (Kaestle 1988).

There is a methodological problem in attributing human motivation, content and consequences of action to events in history and thus the historian, where possible, needs to make a distinction by careful comparison of documentation. There is also a need for impartiality, with the historian setting aside moral judgement. Additionally, historical characters' motivations must be understood in the context of time—the social values and scientific knowledge of the day.

- In the economic paradigm in which we live, there is an assumption that growth is equated with progress, another notion calling for reflexivity.

- Another methodological issue is giving credence to authority rather than all of the people and environments that make up the story. The elites have generally created the public records, thus there needs to be a conscious effort to hear the silenced (Kaestle 1988).

The broadening of the definition of education to include other educational aspects of society, or the broader context in general, can leave the historian hopelessly adrift (Kaestle 1988). This aspect of educational history held enormous resonance with the current study. It is hard to define without omission yet difficult to gain traction without focus. A decision must be made on where the limits lie. An intentional boundary has been drawn around the EECs within the NSW Department of Education and some of the elements that influenced them from a global, national, state and local perspective. This was as holistic and inclusive of systems thinking as could be managed. The focus is formal education within the schooling system, to the exclusion of the community and tertiary education in the period under consideration. It is seen as an appropriate boundary in which to study a phenomenon within a bureaucracy. However, there has been an attempt to place the social and economic events within the context of time and place, with snapshots of history given at various points throughout this history to illustrate specific occurrences, and hopefully make them visible to the reader. These snapshots give a glimpse of what is happening, or not happening, within tertiary and informal education.

It is possible the study has inadvertently questioned the assumption that state regulated schooling has been generated by democratic and humanitarian impulses. Additionally, that the result has been a democratic opportunity totally fulfilled. The study also led to a revelation of the exploitative nature of capitalism and the negative aspects of increasing bureaucracy (Kaestle 1988).

There is importance in flexibility and reflexivity in methodological practice—not taking methodology for granted, and constantly searching for new sources of evidence. History is interpretive, selectively guided by the individual history and sense of what is important. It is not merely inductive but its partial induction lies in the individual historian's temperament, convictions, hunches, and theories, whether explicit or implicit.

Kaestle (1988) identifies four fundamental methodological concerns in advancing an educational history and suggests four approaches to counter them:

- being observant and cautious of correlation and causes,
- being attentive to definitions and presentism to avoid the pitfalls of vagueness and changes in connotations over time,
- being careful that evidence providing ideas on how people should behave is not portrayed as how ordinary people did behave. (A possible example of this is that EE and EfS exemplify the ideal behaviour for an ecocentric society yet it is far from the reality), and
- not assuming or inferring that consequences were the intent. This can be easy in hindsight and thus needs observant reflexivity.

History is complex and all encompassing. These methodological challenges need to be recognised when trying to make meaningful generalisations about an educational past. In constructing this historical narrative about the EEC within the NSW Department of Education, there is consideration of the importance of the whole. The influence and input, the impact, both enabling and inhibiting, of external factors, is included in this study. There are international, national and state considerations; there is attention given to time and place, intention and consequence.

To avoid vagueness and presentism, concepts have been defined throughout this narrative and there is consideration of time and place in defining the language used. Attention is focused on specificity of place, entity and time. The constant changes in department and organisational titles have also been noted; the constant alteration of government departments being dependent on political power. These changes, of title and grouping practices, tell a story on their own and are interesting to note throughout this account, with the federal and state departments of environment particularly vulnerable at both a national and state level. For example, the NSW Office of Environment and Heritage was enacted in 2011 but it was abolished after the election in 2019 with Environment subsumed within the Department of Planning, Industry and Environment (NSW Government 2019). It would be an interesting exercise to calculate the cost of such changes made to departments over the years.

Additionally, it is worth noting that these changes do not seem to alter the fundamental bureaucratic power within departments, an assumption made through the lens of this study. There has been an attempt to distinguish intent from consequences and to be attentive to the distinction, and this has been developed through triangulation and reflexivity, expanded upon in the following description of the methods used.

Method

An exploratory approach will enable observation of the complexities of the EECs historical real-world settings.

> *Note that analytics of government does not search for ultimate goals or transcendent principles that should or should not direct the ways in which we govern and are governed…. Rather, it is a form of philosophical enquiry interested in understanding the formation of discourses, how they become legitimate, how they are distributed, how they maintain their legitimacy, and what effects they have on how we think about and seek to govern our own conduct and the conduct of others. In short, such an analysis does not provide glossy or easy answers to problems but instead provides new, often troubling, insights that challenge us to think differently about problems.*
>
> (Ferreira 2009, 611)

The research involved:

- a broad scan of the EEC community via an online survey,
- document collection and ongoing analysis,
- interviews and oral histories, and
- brief case studies of the establishment of each centre in addition to development of some themes within some centres.

Initial Online Survey

An online survey, with implied consent, was developed in Survey Monkey (online survey development software). The survey was anonymous unless participants indicated they were interested in receiving a copy of the thesis in which case they provided their contact details.

The survey asked participants who they thought was instrumental in the establishment of EECs in NSW and sought their insights into the history (see Appendix ii). In an effort to develop trust and EEC ownership of a story that is integral to them, in addition to tapping into participant knowledge and expertise, contributors were also asked what questions they thought were important in developing a history of the centres (see Appendix iv). These questions were then used to inform and elaborate the interview questions.

Human Ethics Approval was gained from the Newcastle University Human Ethics Committee on March 9, 2015 [H-2015-0014]. Following this approval, a snowballing technique, a qualitative method of inviting participation in addition to a request to pass the information onto possible interested parties, was utilised to inform and garner interest from possible informants (Atkinson and Flint 2001). In March 2015, a request was made to The Australian Association for Environmental Education (AAEE) to circulate to members via its E-bulletin an invitation to participate and the link to the online survey inclusive of Participant Information Statement information (Appendix v). Additionally, the Participant Information Statement including the online survey link and a request to email the information to ex-principals or others who might be interested was emailed to the generic email address of each of the 25 EECs within the NSW Department of Education. This latter email was sent out twice more, once in October 2015 and again in March 2016.

From the first round of invitations, there were seven survey responses, 11 email responses and two phone calls. The email responses came about when respondents opted to provide answers and information in an email response rather than complete the online survey. Reminders in October 2015 and March 2016 resulted in a further two online surveys and two emails, and three online surveys and six emails received respectively. Four of the initial informants who emailed or phoned went on to complete the online survey. In March 2016 three went on to participate in the online survey. The staggered response to the survey illustrates two points. One, the influence of some of the participants who actively canvased among their peers and contemporaries for participation in the study (this was made known by some of the participants and was also observable within the responses) and two, that the centres are busy places and perseverance can be required to find possible windows of opportunity within busy schedules. In total, 12 survey and 19 email responses were received.

There had been a glitch in the email system with the Participant Information Statement attachment not forwarded with the email that had been, in some quarters, enthusiastically disseminated to possible participants. Nevertheless, in some cases, there was substantial information conveyed via email. One limitation of the study was that a few of the old guard had sadly passed away before the study was undertaken. Fortuitously, there was documentation available in these cases that was extremely helpful in enabling some history to be written for each of the centres in addition to providing invaluable information for the story as a whole.

Interviews

The online survey responses informed interviewee selection and some of the interviews opened up the potential to interview yet other ex-principals. The final interview sample (n=36) included some members of the Gould League of NSW, the Association for Environmental Education NSW (AEE NSW) and the AAEE, in addition to a few of the overall centre managers and at least one educator, often more, from a vast majority of the centres. Additionally, one interview had two interviewees, with one of the long-time administrative staff members contributing to the interview.

Interviews were dependent on interviewee availability and were conducted between March 2015 and November 2017. Given distance and limited resources, most interviews were conducted and recorded via telephone. Generally, telephone interviews were easy and convenient for interviewees as they could more easily be accommodated into busy lives and were a great time saving given the large distances to some informants around NSW. However, there were anomalies. Six interviewees requested interviews in person rather than by phone as they felt more comfortable being interviewed in person. The advantage of this approach was that it assisted in establishing a sense of trust and understanding between informant and researcher. The initial interviews undertaken in person were invaluable in refining the interview technique.

Interview scheduling and duration was entirely up to informants. Interviewees, in addition to the developed semi-structured interview questions, were given the choice of running through the questions that were contributed through the online survey, with most taking up the offer.

Some of the online survey questions were reworded repeats of previous questions. It was felt that given the time frame interviewees were requested to recall, and given it was being recalled generally years after occurrences, repetition may elicit valuable information. While this was partially true, it could also be annoying and thus apart from the initial six research questions, there was improvisation to tailor the experience for specific interviewee needs and character.

Interviews lasted from half an hour to a few hours. Phone interviews were rarely longer than two hours. On a few occasions there were repeat interviews in order to give time to the multitude of questions. Establishing rapport was not difficult and the generosity and patience of informants was greatly appreciated.

Generally, there was excellent uptake of the opportunity to participate in this research. A few potential participants were concerned about the research and thus did not participate. One was concerned about research directed through the AAEE and open channels rather than the NSW Department of Education ethics process. The other, while spending some time deliberating, writing some of their specific history and talking through the process, was ultimately too busy to commit and was a bit unsure about the process.

Having many of the centre educators consenting to participate, there was added impetus to ensure that all of the centres were represented. In attempting to achieve this, the contact details for two potential interviewees were found through internet searches (one successful, one not so successful) and the snowballing technique, particularly by word of mouth, needed time to develop. While not all centres are represented most are, and the information gathered from other interviews and sources has assisted in informing the process.

Initially, it was envisaged that participants would be mostly ex-EEC principals who would be happy to be identified within the data. This was seen as important in developing the story and the interview Participant Information Statement discussed and sought consent for identification (see Appendix vi). Also seen as valuable was that the interview transcripts be made available to the NSW State Archives given their importance in the development of EE/EfS in the NSW context. This action assists in developing trust and transparency in and of the data in addition to allowing the development of the history of field studies centres

(FSC)/EECs, EE and EfS into the future. However, it eventuated that there were participants from the 1970s to the present, and anonymity was sought by some informants, for at least some of their information. Eventually, a process was agreed that participants were comfortable with. The transcription included highlighting of information that participants wished to be de-identified. Additionally, informants were given the options of:

- putting an embargo on their script with a 40-year option set as an example,
- deleting specific text within the transcript before offering to the archives, and
- declining the offer for the transcript to be added to the NSW State Archives with the data being destroyed after the obligatory five year post-research hold.

While the State Archives would prefer whole transcripts to avoid sanitation of the data, the wishes of informants were paramount. While some personalities within the study were identified, there was a consistent effort to de-identify informants where necessary.

Informants were emailed transcripts with agreed upon highlighted information to be deleted before the transcripts are offered to the NSW Archives. It should be noted that given the enormous amount of data, there was little of concern in what was highlighted. Additionally, most informants were happy with informant de-identification where necessary and for the transcripts to go to the State Archives. Only two informants wanted an embargo placed on their transcript and only two declined having their transcript offered to the State Archives. Given that there are 36 interviews (one completed the questions in their own time), there is no real difficulty in de-identifying informants. Participants often provided information about other centres and there were enough informants to provide a general anonymity. However, it was decided to provide total anonymity via the allocation of pseudo initials for all participants. Identification has been retained only if the context is an identifier. This initialling system is evident through the attributions to direct quotes throughout the narrative.

Transcription and Analysis

Transcription software, Dragon for Mac, was used to transcribe the interviews as much as possible (anywhere from 20-80%). This was achieved by using the WavePad program to cut the audio so that significant sections of the interviewee's voice could be used to train the

transcribing software for that specific recording. The researcher completed transcription in an effort to become immersed in the data and gain a deep understanding of the information. In addition, there was significant saving of resources. However, the process took a considerable amount of time. Different methods were used to make visible important themes within the data. QSR NVivo10 qualitative software was utilised, as was a cut and paste and highlighting method, to develop emergent themes and threads. There were close to 900 pages of transcript providing many diverse topics. Thematic analysis of interview data at the individual transcript level was progressed enabling the identification and analysis of emerging patterns. In addition to contributing to the placement of events within time and place, emerging themes within interviews were compared and contrasted with the interview and documentation collective. This allowed the development of the historical account as a whole. Decisions had to be made as to which were the most prominent and appropriate themes for prioritisation and further development within the study.

Document Collection/ Ongoing Analysis/ Triangulation

The study utilised many largely official historical records and in the process of analysing them Stevenson's questions addressing the peopling of these documents (Ball 1997) were reflected upon.

> *Policy text is usually framed in the language of the general public good and masks underlying ideologies as well as conflicts and compromises. The result is a pretension of consensus around the common good.*
>
> (Stevenson 2013, 149)

Answers to questions regarding the context of political influence were considered such as whose voices and power/interests are represented, what and whose knowledge and discourse are represented, what informs the policy and who benefits from policy (Stevenson 2013, 149). Policy and its enactment were scrutinised by questioning how EE/EfS policies are represented, interpreted, appropriated, and implemented at the local level—the influence of global directives at a local level (Stevenson 2013, 153). A sociocultural approach drawing on ethnographic methods (Stevenson 2013, 150) assisted in interrogating policy text networks. It was important to be cognisant of the multiple influences on policy formulation,

interpretation and implementation (Stevenson 2013, 148)—struggles over discourse and purposes.

Initial document analysis was used to establish the timing of events, the what/where/who, relationships, functioning, networks and changes that have taken place in NSW EECs. The document investigation process involved finding, selecting, assessing and synthesising data. Major themes and categories were sought from this organised document data (Bowen 2009). This initial interpretation of text used an iterative process of skimming reading and interpreting data. Content analysis was used as a broad-brush approach to organise the information into categories. Themes emerged from a more focused re-read of the categorised data.

While providing information on the research context, documents were used to contextualise the data gathered from the interviews. Triangulation of survey and interview data with documentation assisted in both placing events within the timeframe and verifying events. Triangulation enhanced the validity of research findings as potential biases were reduced by the convergence and substantiation, or the divergence and contradiction, of different data sources and methods (Bowen 2009). There was substantial primary and secondary data providing supporting evidence through potential conflicts, which tended to be around the timing of events. Where events could not be verified they were omitted or discrepancies noted—there were few occurrences and none were of great significance. While such omissions could lead to misinterpretation, throughout this history truthfulness and transparency have been the foremost goal to ensure trust in the process.

The histories of Allen Strom and his time as the Chief Guardian of Fauna, one written by Strom and one by Allan Fox, both edited by Neil Dufty, Kevin McDonald, David Tribe, Syd Smith, and Ken Schaefer (Fox 2016; Strom 2017) were invaluable. Pivotal also were authors such as Hutton and Connors (1999), James (2013), Mulligan & Hill (2001) and Webb (1998). The knowledge and experience of their written topic, documented activism and advocacy in its various forms, along with those of Strom and Fox, provided much of the material that enabled the weaving together of this extended history. Essential to the study are the number of texts made accessible by informants. Documents dating back to the 1970s were generously

offered. While historians must be wary of texts given as they often portray the subjective views of the elite, much of this documentation was saved for just such an historical account and many may not have seen the light of day otherwise. Some FSC/EEC personnel had kept meticulous records of their time at the centres. Others, including some who are no longer with us, had left short histories of their centres and events that had occurred in the network. Fortunately, the AAEE had also collected a documentation archive that was made available for this study. *OzEEnews* and its precursor, the *Environmental Education Project Newsletter*, have been invaluable. All of these documents, and books, have given a voice, otherwise silenced, to this story. While all of this literature was pivotal in constructing this history, conversely, there is need for cognisance that this data is pushing the EE/EfS agenda within the dominant bureaucracy. There is political play for more centres, greater residential centre facilities, community EE/EfS, more tertiary EE/EfS centres to be available to all, to name a few of the themes. These documents were added to the official documentation available from libraries and currently available on the internet through government departments and other organisations, in addition to NSW Government Hansard. After experiencing this process, the caution to be wary of the official documentation is understood. There were experiences throughout this study of documentation made inaccessible, or simply never made accessible, making piecing this history together difficult.

Case Studies

With the *ad hoc* and opportunistic nature of the establishment of the centres developing as a theme, a brief case study of each of the centres has been included. Given their uniqueness and the importance of community and time and place in centre establishment and development, this seemed advantageous. It establishes an understanding of their situatedness.

The purpose of the brief case studies of centre establishment, and for some centres, further development, was to create a context-dependent narrative, given that each centre has a unique story. It is not desirable to summarise and generalise case studies. Good studies should be read as narratives in their entirety (Flyubjerg 2006). Many centres had enormous community support or drive, often from the AEE (NSW), the Gould League of NSW, or NSW National Parks and Wildlife personnel and in some cases businesses were involved. The relationships

developed within the community and within the NSW Department of Education have an effect on the development. The characters of the individuals who became the teachers-in-charge/principals, are essential to the developing character of each centre. For the earlier centres, we get a sense of the importance of Strom's work together with the AEE (NSW) and the Gould League of NSW. Through these brief case studies over a period of approximately 25 years, we get a glimpse of changes over time, and EE/EfS becoming a part of the normative, albeit not part of the dominant power structure. Each centre, within this *ad hoc* and opportunistic development, has a story contributing to the whole. The diversity of the network developed—within context, time, place, and environment—is important as it builds the unique character of each centre and contributes to the resilience of the whole.

Research Journal

A research journal of all proceedings, including each interview, was developed throughout the study to document and thus further support and enrich the research process. It was helpful in reimagining specific places within this research study given the long timeframe. Furthermore, journaling supported the development of themes and annotations within the data.

Limitations

Factors that influenced this research include limitations and biases with respect to the chosen research design, availability of study time in an intermittently yet intensely and extensively time poor workspace, and a need to keep the cost of research to a minimum.

It was important to assess/address validity relative to the purposes and circumstances of the study (Maxwell 1992) therefore tackling the possibility of limitations to study acceptance. Validity needs to be fluid and transparent, thus ensuring understanding and trust in research. With openness in research methodology and progress in addition to triangulation, there is an attempt at verification, credibility, and trustworthiness within this research (Freeman et al. 2007). In addition, issues of internal and external generalisability have been addressed, in particular, the social nature and relationship between the interviewer and informant pose

particular issues for internal generalisability. An interview is an account of the interviewee's actions and perspectives in the interview and is thus descriptively, interpretively and theoretically valid as an account in that space. Researchers must be careful not to infer interviewee actions outside the interview situation, however, as interviews are a very short space in an interviewee's life and many other aspects of the person's perspectives are missed in the interview (Maxwell 1992).

> *Understanding the nature of that situation and relationship, how it affects what goes on in the interview, and how the informant's actions and views could differ in other situations is crucial to the validity of accounts based on interviews.*
>
> (Maxwell 1992, 295)

Additional ethical, validity and reliability issues inhabit this history methodology. Interviewees have chosen from many options regarding the final output of the raw data and how it is archived. They have chosen to be anonymous or not, and to make the raw data available in the future or not, with or without restrictions. Decisions made have implications not only for the process and final product but moreover for the trustworthiness of the research. Validity and reliability are strengthened by an ability to check statements against the raw data. Credibility is enhanced when correlations between events and people can be made within a history (Boschma, Yonge, and Mychajlunow 2003). Given requests for anonymity, this process has been actioned as much as possible.

Another consideration in utilising oral history interview methodology was the subjectivity of the interview data. Oral history is a complex process. The interviewee engages in an active process of remembering—their subjectivity or sense of self is constructed and reconstructed (Hajek 2013).

> *Oral history does not only tell us what people did, but what they wanted to do, what they thought they were doing and what they now think they did. In other words, it tells us a lot about the subjectivity of the speaker.*
>
> (Hajek 2013, 4)—acknowledging Portelli's observation.

Furthermore, elements from a wider, cultural memory may be contained in an interviewee's reflection of their personal experience (Hajek 2013). These factors were taken into consideration within this study through journaling and reflexivity throughout the process.

Conclusion

No history can transcend the problems associated with documenting the past. Yet in writing this narrative, there is a recognition of the intractable issues and an attempt to utilise the frame conceptualised by Kaestle (1988) for educational histories. Meanwhile, there is cognisance of techniques and issues in triangulating interview and document data and working with case studies (Bowen 2009; Flyubjerg 2006). Finally, with EE/EfS part of a non-dominant paradigm, credence is given to Critical Theory as a lens through which to construct a historical narrative of the EECs within the NSW Department of Education.

CHAPTER 2: THE CONCEPTION OF ENVIRONMENTAL AWARENESS AND ITS DEVELOPMENT IN AUSTRALIA

> *But regardless of whatever role we play in the stream of time, we are all embedded in it; we are a product of time to the present and are all part of the foundation for the future.*
>
> (Fox 2016, Ch. 1, para. 4)

The Genesis of Environmental Awareness

To understand the development of the environmental education centres (EECs) in NSW one needs to understand the genesis of environmental education—indeed conservation generally, within NSW. Historical factors and events laid the foundations, set the accumulating building blocks in place, built the momentum, and generally shaped the genotype of the NSW EECs as we know them today. This foray into environmental awareness will reveal some of the dominant themes that consistently appear in this history. This chapter will look at the period from the mid 1800s when the concept of "environment" was invoked through the immense changes brought about by the industrial revolution (Wheeler 1975), to 1949 when the NSW Fauna Protect Panel was created along with the position of the Chief Guardian of Fauna under the Fauna Protection Act 1948 (NSW). This advancement is fundamental to the development of the field studies centres (FSCs) in NSW which later became the EECs.

In the 1800s, western civilisation was increasingly disrupted with the advancement of the industrial revolution (Merchant 1980; Wheeler 1975) and many people were progressively absorbed into the industrialised workforce. This involved the movement of populations from agricultural areas into the bigger urbanised areas which the industrial revolution enabled. Many people were working long hours and living and working in poor conditions brought on by the deterioration of their environment. They were experiencing the first urban environmental problems of the modern era (Wheeler 1975), with air and water pollution from factories, and crowded urban living conditions with poor sanitation (Dunlap and Jorgenson 2012). This alienation of people from their natural environment gave rise to the modern conception of "environment" (Wheeler 1975), and also Romanticism, a counter industrialisation movement where poets such as Wordsworth and artists such as John Constable lamented the loss of the countryside in words and paintings.

To further set the scene on a global scale, for western civilisation at least, natural selection was posited by Darwin in *The Origin of Species* (1859), broadcasting the connectedness of all living things (Wheeler 1975). The importance of nature study in children's education started to be recognised through the work of Rousseau, and the study of ecology and sociology emerged out of the discipline of botany (Wheeler 1975), with Haeckel coining the term "ecology" in 1866 (Mulligan and Hill 2001). Significant for education and environmental education in particular, Patrick Geddes (1853-1932), a Scottish Professor of Botany, had an interest in effecting change in both school and tertiary education. He believed that the quality of education and the environment were closely connected. Instead of the "three Rs" he wanted to see a psychological agenda of "three Hs: hand, heart and head" (Wheeler 1975, 4). His avant-garde theory was that connection with the environment would produce better learning in addition to developing a creative attitude. Influenced by Le Play (1806-1882), a foundational sociologist, Geddes saw the environment as an interaction between place, work and people, a holistic approach (Wheeler 1975), and he developed teaching processes for hands-on experience in the environment. While Geddes' Field Studies Centre was in an urban environment, his work influenced the nature study movement that grew out of the Victorian era's fascination with nature (Palmer 1998).

To complete this depiction of western society from the mid nineteenth century to the early twentieth century we need to include:

- the vote becoming more egalitarian in an albeit inconsistent fashion,
- workers winning an eight-hour day,
- education becoming institutionalized and compulsory—with the school leaving age increased in a staggered fashion,
- increasing tertiary education for both men and women,
- the development of rail transport and later cars, and
- the progressive increasing efficiency of communication—initially the telegraph system in the first half of the nineteenth century.

Historical events need to be considered within their social and political context—relative to their own time (Hutton and Connors 1999, 17-18), and relative to place.

Colonial Government in NSW

It is to Australia's colonial establishment, specifically from the mid 1800s, that I turn the focus, in particular to the state of NSW, and its unique circumstances. In Australia, each colony developed with, and then separately from NSW at various times. Tasmania separated from NSW in 1825 after being settled by the British in 1803. In Western Australia, only King George Sound, settled in 1827, was associated with NSW, and separated in 1831. Victoria separated from NSW in 1851 after British settlement in 1834. Queensland (QLD) separated from NSW in 1859 after being settled in 1824. South Australia settled in 1836, was a free colony in its own right. SA took control of The Northern Territory from NSW in 1863 after it had been included in NSW in 1824 (Bessant et al. 1978). Thus, the boundaries of NSW were in constant flux.

While the imperial colonial governance was initially autocratic, there was early agitation for representative government as NSW transitioned progressively from a penal colony to a colonial settlement (Bessant et al. 1978). Initially, a Legislative Council had merely been an advisory body to the Governor of NSW (1823). However, Legislative Council power quickly increased as an Executive Council, generally comprised of the members of the official Legislative Council, was established in 1825, and the Legislative Council gained the right to initiate proposals in 1828 (Bessant et al. 1978, 151). The first parliamentary elections were conducted in the Legislative Council in 1843. Two-thirds of the 36 seat Council were representative, with voters' rights (had to own a property worth £200 or occupy a house worth £20 p.a. in rent), and candidature rights (own a property worth £2,000 or one yielding £100 p.a. in rent) dependent on financial or property capital. Additionally, the British Government still held power to veto bills and retained full control over Crown land and its sale revenue.

The Australian Colonies Government Act of 1850, in addition to establishing the NSW Legislative Council, established a Council for Victoria, Tasmania and SA. Voting was extended to males from 21 years of age who were subjects of the Queen owning freehold estate of £100 within their voting district, or occupying a dwelling worth £10 annually. This Act allowed the councils to make laws relating to local government, the judiciary and customs duties, and also to rewrite their constitutions to provide for two houses of parliament. The colonies produced constitutions for democratically progressive government that generally maintained the social and economic interest representation of

the upper house with a constitutional monarchy as the symbolic head of state (Bessant et al. 1978). A secret ballot and the vote for all males 21 years of age and over was achieved in NSW from 1859. Women had to wait until Federation, gaining the vote in 1902 in NSW. Aboriginal males lost the right to vote with Federation and did not regain it until 1967 when Aboriginal people from the age of 18 years of age gained the vote (Australian Electoral Commission 2018). With the cleaving of the colonies marking the political and economic distinction of NSW as its own entity, and NSW being less affected by the gold rush of the 1850s, domination by the squatter class and the Sydney business community continued (Bessant et al. 1978).

After Federation in 1901, only limited and specific powers were delegated to the Federal Government (Hutton and Connors 1999, 23), generally where uniform national laws were beneficial such as for trade, immigration, communication and national transport. Interest specific organisations initially formed colonially. National bodies, such as the Australian Association for the Advancement of Science, established in 1888, which included a Committee for the Preservation of Native Birds and Mammals Committee, formed toward the end of the nineteenth century (Hutton and Connors 1999, 39). Of course, a plethora of people and events contributed to the immense and wide ranging tapestry of changes that evolved into the initial manifestation of environmental education, action, legislation and regulation. My purpose is to pick up enough threads to outline the foundation of EECs in NSW.

Aboriginal Connection to the Environment

In speaking of the development of environmentalism in Australia, it must be acknowledged that the Aboriginal communities, over 500 nations (Australian Government n.d.), that inhabited Australia before 1788, stand in stark contrast to the technocratic, mechanistic, anthropocentric coloniser culture. Aboriginal cultures have an ecocentric connection to the environment, playing the role of caretakers of the land that sustains all lifeforms (Mulligan and Hill 2001, 217). The devastation of the natural environment is in parallel and connection to the enormous devastation of Aboriginal communities—part of the unspeakable path of “progress” that colonisation wrought. However, the first immigrant nature-lovers and field naturalists socialised with Aboriginal folk in garnering information about the ecology of their environment. For instance, Count Strzelecki, an explorer and scientist, argued for Aboriginal rights in 1845

(Hutton and Connors 1999, 271). Generally, however, the contributions Aboriginal people made in acting as guides and field assistants to early naturalists were as part of imperial science and thus "unwittingly lead [sic] to further economic expansion and degradation of the very landscapes that both Aborigines and nature-lovers cherished" (Hutton and Connors 1999, 27).

Explorers, Scientists and Naturalists

The re-shaping of Australia is argued to have been influenced by three major preconceptions brought by the British. First, a fear of the unknown; secondly, a pragmatic satisfaction in combating an alien environment; and, thirdly, the romantic view of nature as a delight for the scientific observer, or just an ability to recognise the innate beauty (Baker Proudfoot 1979, 37). It was the explorers, the scientists, the naturalists, the writers, the artists—including natural illustrators—and the journalists, who, over time, prised open the consciousness of the colonisers to the beauty of Australia as ancient land (Hutton and Connors 1999; James 2013; Mulligan and Hill 2001).

Australia was new territory for the discovery of hitherto unknown botanicals, and many eminent scientists came to explore—and some made Australia home. Joseph Banks travelled with Captain Cook; Robert Brown and Ferdinand Bauer with Captain Flinders in 1801 (Baker Proudfoot 1979, 41). Allan Cunningham explored Australia from 1816-1828 being both an explorer and, importantly, a botanist. He was the first white man to explore Pandora's Pass, the Darling Downs and Cunningham's Gap. He returned in 1837 for a brief stint as Colonial Botanist but left dissatisfied with the unsuitability of his tasks which included supervising the Government cabbage garden and being expected to supply vegetables for the governor's table—tasks for a grocer rather than a botanist. Charles Darwin visited Australia in 1836 (Baker Proudfoot 1979, 41; Perry 1966) and his observations of the colonialising population give some insight into how a society may have exacerbated environmental degradation beyond being in an ancient and arid land and within a colonising culture.

> *The whole population, poor and rich, are bent on acquiring wealth; the subject of wool & sheep grazing amongst the higher orders is of preponderant interest. The very low ebb of literature is strongly marked by the emptiness of the booksellers' shops; for they are inferior even to those in the smaller country towns of England.*
>
> (Charles Darwin 1836, 406)

William Sharp Macleay, an eminent naturalist and entomologist, immigrated to Sydney in 1839 where, in 1848, he inherited Elizabeth House from his father, also a keen naturalist. He took over his father's collection and encouraged others, including his cousins William John and George, in naturalistic pursuits. Using Elizabeth House as a meeting place for like-minded naturalists, he was largely responsible for outlining and introducing an Act in 1853 to incorporate and endow the Australian Museum (Baker Proudfoot 1979, 41; Mulligan and Hill 2001). The Macleays hosted naturalists such as Joseph Dalton Hooker, a pioneer plant geographer who later worked at Kew Gardens and wrote on the plants of Tasmania in 1959, and Thomas Huxley, known as "Darwin's bulldog", an English biologist specialising in anatomy (Baker Proudfoot 1979, 41; Curtis 1972; The University of California Museum of Paleontology 1999).

Ludwig Leichhardt is another example of an early explorer and naturalist. He explored Australia from 1842 until his disappearance in 1848 (Baker Proudfoot 1979, 41; Smout 1966). Depicted as having reckless courage, his legend contributed to the spirit of high adventure that became a part of the Australian identity in the late 1800s and early 1900s.

Moritz Richard Schomburgk wrote widely on afforestation and spoke of the importance of forests for their effect on climate as well as their economic value while he was the botanist for the Adelaide Botanic Gardens from 1865 to 1891 (Baker Proudfoot 1979, 41; Middelman 1976). Ferdinand Mueller, an explorer and botanist who emigrated from Germany in 1847, became the government botanist in 1853, based in Melbourne. He added new genera to the flora of Australia and sent double specimens to Kew Gardens stating that "the plants being so much more useful in Kew than in Australia" (Mueller cited in Morris 1974, para 2). A prolific writer, he was largely responsible for the international recognition given to the Australian scientific effort. He was one of the first to take a scientific interest in Victoria's forests and saw the utilitarian value predicting timber's commercial value. He also advocated for local forest management boards to protect against indiscriminate clearing (Baker Proudfoot 1979; Morris 1974).

Acclimatisation Societies

Acclimatisation societies were popular within western scientific/naturalist communities in the second half of the 1800s with their purpose being species exchange (Lever 1992). In Australian acclimatisation societies "acclimatisation" was synonymous with "naturalisation" and the movement was met with "covert hostility, or at best apathy, based on the not entirely misplaced belief that the societies were acting in the interest of the privileged minority" (Lever 1992, 100). The NSW Acclimatisation Society was founded in 1861, chaired by the Governor and led by Dr George Bennett of the Australian Museum, and Charles Moore, the director of Sydney's Botanic Garden (O'Connell 2019). The importation of exotic animals and plants was due to settlers' perception of the Australian environment as impoverished, and a yearning for the environs of home in alien territory (Wilson 2004). The title of a paper given by George Francis in 1862 to the South Australian Philosophical Society, in the hope of establishing an Acclimatisation Society in the colony of South Australia, gives their agenda as "The Acclimatisation of Harmless, Useful, Interesting and Ornamental Animals and Plants." While many exotic species had been introduced through government sponsored initiatives and private enthusiasts, these societies certainly spurred on their introduction. Whilst many useful crops were introduced to support human habitation, the introduction of rabbits, blackberries, starlings, foxes and sparrows was destructive and provoked the ire of many farmers (O'Connell 2019). These societies, closely associated with the establishment of zoos, lost momentum in the 1870s or, when confronted by the error of their ways, changed tack to support the protection of native fauna and flora (Hutton and Connors 1999, 30, 73; O'Connell 2019).

Collectors, Illustrators and Writers

The amateur scientists and nature-lovers who made an income as natural history collectors/illustrators due to the demand for Australian specimens acquired an appreciation of the unique Australian ecosystems (Hutton and Connors 1999, 28). The Goulds—Elizabeth, a talented natural illustrator, and John, a scientist—studied Van Diemen's Land and the Swan River, WA, in the 1830s. John Gould was one of the first scientists to warn of the possible extinction of Australian mammals. In his book titled *Mammals in Australia* (1863), he pleaded for protection due to their decline as a result of hunting and habitat loss. He also called for a ban on exotic flora and fauna, due to the

detrimental impact of species such as cats, foxes and rabbits (Baker Proudfoot 1979; Gould 1863; Hutton and Connors 1999, 28). The decline of native species and the replacement of primeval forests by exotics was documented by William Woolls in 1885 (Baker Proudfoot 1979, 40).

Collecting, illustrating and documenting native species was a popular pastime, particularly amongst women with means. Often collections were sent to colonial museums and acclimatisation societies—sometimes to Kew Gardens and British societies (Hutton and Connors 1999, 28). Rarely do women get credit in their own right for the work completed. Caroline Atkinson (1834–1872), based in NSW, an author, keen naturalist and illustrator, identified new plant species, and illustrated plants and animals, sending specimens to William Woolls and Ferdinand Mueller (Chisholm 1969). Harriet and Helena Scott in NSW were natural history illustrators and accomplished amateur naturalists and collectors in the 1800s with their studies of moths and butterflies, which they illustrated for their father's book *Australian Lepidoptera and Their Transformations, 1864 (Australian Museum 2019)*. These accomplishments were in appreciation of the natural environment rather than preservation of it (Hutton and Connors 1999, 29) yet, in addition to the literature and art of the time, it brought the uniqueness of Australian ecosystems to the public's attention.

The Romanticism that had swept Britain in the 1800s took a unique turn in Australia. The counter-culture environmentalism element of Romanticism was seen as peculiar in Australia (Hutton and Connors 1999, 26-27), possibly due to the enormous challenge of the new colonial frontier taking precedence—and the country being so big, so foreign, so hostile. The ambivalence felt toward the Australian landscape by the newcomers continued through the 1900s with some finding the place alien and monotonous while others were charmed by its peculiarity (Baker Proudfoot 1979, 43). It took time for the colonial population to be endeared to the Australian environment, yet there grew an explorative progressivism, found in the scientist, bird-watcher, naturalist and bushwalking groups, that was popularised through the literature and art of the time (Hutton and Connors 1999, 63).

Examples of the literature and art which contributed to endearing the population to the Australian environment include Ellis Rowan, natural illustrator and author of adventure/exploration novels and author Edmund Banfield (Hutton and Connors 1999,

64). Artists such as Eugene von Guerard, Nicholas Chevalier and W.C. Piguenit, in searching for romantic landscapes conveyed the great forest idea whilst much of the big forest had already been destroyed (Baker Proudfoot 1979, 40). Arthur Streeton's painting titled "Cremorne Pastorale" (1895) depicted an environment threatened by government drilling. Drawing the attention of a wide audience, the ensuing controversy encouraged the government to cease with this line of enquiry. Other artists to depict the Australian natural environment include Conrad Martens, Louis Buvelot, Tom Roberts and Charles Conder (Fox 2016). Others gained a thirst for knowledge of the bush through the literature of Banjo Paterson, Charles Harpur and Henry Lawson (Fox 2016; Tribe, 1991).

Impetus for Change: Mid 1800s

Many factors facilitated change from the mid 1800s. Convict transportation to NSW was abolished in 1840 (Bessant et al. 1978). The colony of NSW grew from 200,000, mostly within the Sydney region, to 300,000 between 1851 and 1857 due to the gold rush. Inland towns such as Bathurst, Goulburn, Orange and Young prospered. Parcels of land, which had initially been inhabited by authorised settlers, and squatters who settled land without authority, and inside and outside authorised jurisdictions, became increasingly regulated. There was much turmoil in the nineteenth century as Aboriginal nations attempted to protect their sacred areas from colonisers claiming it as farm land (Bessant et al. 1978).

Aspirations for social improvement were instigated in the 1880s (Hutton and Connors 1999, 22) with the reform of free, compulsory, secular schooling (Barcan 1965)[3] and non-government schools losing their funding. Access to some tertiary programs was gained for women in 1890 (Barcan 1965). With increased education came increased literacy and this growing, technically educated middle class re-energised some of the existing royal societies and triggered new nature organisations (Hutton and Connors 1999). These organisations provided significant networking opportunities for these newly politically active members, through regular contact with journalists, scientists and politicians.

[3] Fees were lowered but schools did not actually become free until early in the twentieth century with first primary school and later secondary school fees being cancelled (Hughes and Brock 2008). Additionally, scholarships and bursaries became available through the University Amendment Act 1912 [NSW] (Barcan 1965; Hughes and Brock 2008).

With the eight-hour working day won in 1856, there was more leisure time for recreation and interest groups. In addition, there were advances in transport and communication. Passenger railway services started operating from 1855. Between 1870 and 1880 the number of passengers grew significantly, and the length of railway track increased nearly three-fold (NSW Government: Transport of NSW 2019). Bikes also became affordable for the average worker with a bike craze in the 1890s (Hutton and Connors 1999, 64; Pettigrew and Lyons 1979, 18). People were able to get out of the city to enjoy the countryside.

Telegraph communication started opening up in 1858 with a line connecting Sydney, Melbourne and Adelaide. From 1872 Australia was connected to the rest of the world (Lewis, Balderstone, and Bowan 2006; Museum Victoria Collections n.d.). Newspaper publication started in the early 1800s in NSW with the *Sydney Morning Herald* starting in 1831 followed by the *Daily Telegraph* in 1879 but Australia's first national newspaper was not printed until 1891 (Womersley and Richmond 2001).

The Seeds of Environmental Awareness

It took some time for people to realise that the world and its resources were not limitless and the effects of industrialisation came at the price of loss of natural environments, animals and plants, and the defilement of human habitat (Hutton and Connors 1999; James 2013; Mulligan and Hill 2001). This was particularly true in a new frontier such as Australia where boundaries of knowledge, western civilization and an expansive unknown existed (Hutton and Connors 1999, 63). People did not think that the satisfactory farming conditions they often found when taking up land would falter (Fox 2016). When the Crown Land Act 1884 (NSW) took effect, farmers were overstocking on smaller areas in an attempt to cover increased costs. Rabbits were devastating the land (Fox 2016). There was a decade long depression in the 1890s (Bessant et al. 1978) and a drought at the turn of the century (Fox 2016). Ecological and human disaster followed (Fox 2016), as was outlined in the Royal Commission on Western Lands in 1901. Drought, and also flood and fire events, and the implications for the preservation of wildlife were widely publicised. All these changes contributed to the conception and growth of environmental awareness in Australia.

Bowing to political pressure regarding environmental issues started early in the establishment of the Colony of NSW with the first autocratic government unable to uphold the law. Bligh's attempt to protect the urban environment, through regulating development and preserving open space, contributed, along with the rum rebellion, to his downfall (Bonyhady 2000, 10). Another example was the seal industry, which continued unabated even after Governor King's advice to start conserving seals. This is an early example of sustainability losing out to short-term economic gain. There were also serious consequences for the non-repair of environmental damage such as that caused by flooding after the clearing of Hawkesbury Riverbank vegetation. By the end of the 1900s, electoral pressure often rendered the government unwilling to enact environmental protection legislation (Bonyhady 2000, 10-11).

Advocacy and Legislation

Scientific Activity

The first to call for protection of species and specific environments were the scientists who had seen firsthand the uniqueness of the Australian environment and its susceptibility to degradation given its ancient and arid fragility (Hutton and Connors 1999, 27). Scientific activity and interest were strong from 1850s onward. Hardworking amateurs were able to have an impact although professional biologists were making the distinction between theoretical and experimental biology and populist natural history [the beginning of discipline compartmentalisation and academic characterization] (Hutton and Connors 1999, 29). Natural history associations, both in cities and regionally, grew from the mid 1800s and had both scientific and keen amateur members. From this diverse grounding, the first preservation/conservation activists emerged. By the 1880s, concern for environmental preservation among scientists and naturalists was increasing with urbanisation and industrial/pastoral expansion (Hutton and Connors 1999, 30). The populist nature of field naturalist clubs and societies was beneficial in advocating for the preservation of flora and fauna and reservation of land (Hutton and Connors 1999, 33).

Colonial presses were keen to report on the activity of scientific societies and many societies, with talented writers, published articles in their local newspapers. Indeed, the *Argus*'s proprietor and editor, Edward Wilson, was a founding member of the

Acclimatisation Society (1861), an offshoot of the Zoological Society of Victoria (1857-1861). There was a string of natural history writers at the *Argus* with Donald McDonald contributing nature articles from 1881. He influenced Charles Barret, an ornithologist and a Thoreau enthusiast, who wrote nature articles, including one entitled "Our Bush Hut on Olinda." Barrett and two other friends called themselves "The Woodlanders" after Thomas Hardy's 1887 novel, and their weekender "Walden Hut" after Thoreau's novel of 1854. The Woodlanders influenced Alec Chisholm who became a journalist, an ornithologist like Barrett, and one of the first conservation activists. Chisholm contributed feature articles in Sydney and Brisbane (Hutton and Connors 1999, 30-31). In NSW Caroline Atkinson, natural history illustrator and author, and David Stead, one of the first conservationists in NSW, often contributed to the *Sydney Morning Herald* (Hutton and Connors 1999, 30, 35; Tribe 1991). Stead also wrote a "Nature Notes" column for the *St George Call* which contributed to the popularity of bushland (James 2013).

Bird and Animal Protection Legislation

The Animals Protection Act 1879 (NSW), was "to encourage the importation and breeding of Game not indigenous to the Colony of NSW and also to prevent the destruction of Native Game during the breeding season" (para. 1). It was specifically for the protection of deer, antelopes, five exotic and over 25 native bird species in a closed season with provision for the gazettal of areas for bird and animal reserves. Scheduling changes were announced through the Government Gazette with the Colonial Secretary authorised to include or remove species from the schedule. This legislation seems to have been enacted in conjunction with the dedication of the National Park, later the Royal National Park, which was established specifically for recreation and use by acclimatisation societies in 1879 (National Parks, Australia: New South Wales 1979, 96). The Act ensured the sustainability of hunting (Boom et al. 2012).

In the 1870s there had been an enquiry into the health of living conditions in Sydney, specifically the inadequacy of its sewage disposal (Pettigrew and Lyons 1979, 15). There was a very high child mortality rate and extreme overcrowding. Urban reformers were troubled not only by the lack of space and fresh air in the tenements but by the lack of public recreation space provided in the planning process. While John Lucas, a member of the Legislative Assembly, was advocating for public space in 1879, the NSW Zoological Society was formed with an agenda of introducing and acclimatising song

birds and game animals (Pettigrew and Lyons 1979, 15). It was in this climate that the National Park was established under Trust management for recreation purposes. The trust was authorised to "establish ornamental plantations, lawns, gardens, zoological gardens, a racecourse, facilities for cricket and other lawful games, a rifle and artillery range, other amusements and accommodation houses" (National Parks, Australia: New South Wales 1979, 94). So when the National Park was set up there were two views of conservation that were not easily differentiated: the utilitarian focus on future exploitation as per the acclimatisers; and conservation for perpetuity. While the Park was an expression of conservation for perpetuity, it was easily compromised and initially there were many grand plans and ventures that did not fit with the agenda for national parks as we know them today (Pettigrew and Lyons 1979, 18).

Issues raised by individuals led to the earliest animal protection campaigns within organisations such as the Royal Society of NSW, which was established in 1866 after earlier scientific associations had become defunct (Hutton and Connors 1999, 35). It was the Zoological Society of NSW (1879), closely associated with acclimatisation, which convinced the NSW government to pass the Birds Protection Act in 1881 (Hutton and Connors 1999, 35; Royal Zoological Society of New South Wales 2016). The legislation provided protection of scheduled imported birds (six species) and song birds (25 native and exotic species) for five years. After five years there was protection in a closed season for scheduled imported, native (over 13 species) and song birds. There was also provision for preserves where birds were completely protected, pronounced via gazettal (National Parks, Australia: New South Wales 1979, 96). Deer and antelope were no longer protected.

The progression of preservation, protection, conservation and recreation continued with Ku-ring-gai Chase National Park which was dedicated in 1894 (National Parks, Australia: New South Wales 1979, 96). Establishment was encouraged by Eccleston du Faur, the colonial surveyor and geographer, who enjoyed exploring this area (Hutton and Connors 1999, 63).

In 1893 a new Bird Protection Act repealed the 1881 Act, but maintained the practice of superior protection for exotic species (National Parks, Australia: New South Wales 1979, 96) with all exotic species (13) and some native species (over 12) protected for five years and then in a closed season. Other native birds were protected in the closed season (over

35). In 1901, another Birds Protection Act (NSW) repealed the 1893 Act with no preference given—all birds were protected in the closed season [13 exotic and over 47 native species] (National Parks, Australia: New South Wales 1979, 96). In 1903, the Native Animals Protection Act (NSW) protected the red kangaroo, wallaroo, native bear, wombats, platypus, echidna or native porcupine, sugar gliders, and flying opossums by providing complete protection until 31 Jan 1905, and from then on through a closed season. This Act amended the Birds Protection Act 1901 allowing the colonial secretary to enact, alter, or annul periods of absolute protection for all scheduled or specific species, and if annulled decree the closed season (National Parks, Australia: New South Wales 1979, 96).

As noted above, attempts to rectify inadequate, ineffective state laws that were poorly enforced and simply evaded by the feathers and bird skin industry (Hutton and Connors 1999, 24) were among the first conservation campaigns (Hutton and Connors 1999, 41). While the campaign argued for the value of birds as pest insect predators in order to get the anthropocentric onside, it was one of the first campaigns about the imminent threat of native species loss. There was added international pressure with the International Ornithologists Conference in London in 1905 calling for the Federal Government to protect Australian birds given that the international oil trade had started to boil penguins and mutton birds for oil production (Hutton and Connors 1999, 41). Organisations started to work in unison and across state boundaries for the cause. In 1908, while the Linnaean Society of NSW decided to write to other societies to coordinate petitions to government, the Australian Ornithologist Union decided on a similar course of action (Hutton and Connors 1999, 24). They were calling for Commonwealth legislation to supplement state protection laws, an end to the introduction of exotic birds, and a bird day in schools (Hutton and Connors 1999, 42). There was a deputation representing all ornithological societies to Prime Minister Deakin in 1908. Deakin said it would be more effective to appeal to women not to wear bird feathers and that new laws were needed to cover exports (Hutton and Connors 1999, 25), which he said he would take up with the customs minister.

The Rise of Wildlife Preservation Societies

Due to the failure of the initial deputation, there was a renewed push for protection at a state level and the agenda was expanded to include native mammals. The campaign was

doubled in 1909 and public education strategies were improved (Hutton and Connors 1999, 42). Additionally, two groups that had an important impact on future outcomes were formed: The Gould League of Bird Lovers, with a motto of "education is more potent than legislation in furthering the cause of conservation," was established in Victoria but spread to NSW and QLD and later WA, and the Wildlife Preservation Society of Australia.

Stead joined The Field Naturalists' Society of NSW (which replaced the Natural History Association of NSW [1887]) in the 1890s (Hutton and Connors 1999, 35; National Library of Australia n.d.), with a self-developed interest in natural history sparking his concern for preservation (Hutton and Connors 1999, 35). He tried to educate through articles published in the *Sydney Morning Herald* and through advertising, to establish an organisation for the purpose of wildlife preservation (Tribe, 1991). He knew he needed to gain support, to "get the general rank and file" within the community on side to effect change (Tribe, 1991). He had little success in motivating the Association to participate in advocacy until 1909. In protest over an affair that had become public, the Swedish Consul-General, Count Birger Mörner, resigned from the Royal Zoological Society and transferred his support to Stead. They called a public meeting to form the Wildlife Preservation Society of Australia (now the Australian Wildlife Society [2013]) with over 50 people joining up, many professionals from the Zoological Society (Hutton and Connors 1999, 35; James 2013, 29).

Members of the Society's first council included some naturalists, some politicians, one of the Warragamba Walkers, the secretary of the Royal Zoological Society, a founding member of the Royal Australasian Ornithologist's Union in Melbourne and the Chairperson of the Fisheries Board and the National Park Trust (James 2013, 29-30). They looked at the question of how they could get a better wildlife administration process. They submitted proposals for legislation for a service responsible for the administration of legislation pertaining to the protection of plants and animals that provided an effective law enforcement team (Strom 2017). They wanted free ranging guardians with one of their functions being to educate people (Tribe, 1991). They also wanted a list of pest species and the protection of all unlisted native species (James 2013, 30).

Educating the public was an important function of the Australian Wildlife Preservation Society. Education strategies included lantern lectures and pamphlet distribution. Their

advocacy was far reaching. They contacted famous actresses to persuade them to stop wearing osprey plumes and organised lectures by prominent explorers. They educated on the economic and scientific value of wildlife (James 2013, 30).

In support of bird protection, in 1910 another deputation met with the Customs Minister, Frank Tudor, who promised to do what he could including amendment of the Tariff Bill to prohibit certain exports (Hutton and Connors 1999, 25). In the war years of 1914-1918, protection of birds and conservation of native forests were among the commissioner's concerns when new protectionism and tariff policy was reviewed by the Commonwealth.

In 1918 the Birds and Animals Protection Act (NSW) replaced the Bird Act of 1901 and Native Animals Act 1903. Birds and mammals, not all animals, were protected unless scheduled. There was provision for open seasons on protected species and closed seasons on scheduled species. Additionally, sanctuaries could be declared. (Fox 2016; National Parks, Australia: New South Wales 1979, 96). Police, and honorary rangers conferred by the minister, were tasked with the responsibility of regulating the legislation (James 2013, 31; Strom 2017). The number of unprotected animals fell severely while only 10 bird species lost their protected status (National Parks, Australia: New South Wales 1979, 96).

Species Destruction

To give an idea of the destruction of species, under the Pasture and Stock Protection Act 1880 (NSW), kangaroos and wallabies were declared noxious. Approximately three million bettongs and potoroos (rat-kangaroos) were shot for bounties from 1883 to 1920. Three of these species are now extinct though some of this demise may be due to the introduction of the red fox (Boom et al. 2012; Short 1998). From 1884 to 1914 there were at least 460,000 bounties paid for the heads of the brush-tailed rock-wallaby which is now listed as vulnerable and is not found in most of its former range (Boom et al. 2012; Croft 2005; Short 1998; Short and Milkovits 1990). More than four million possum and 60,000 wallaby skins were up for sale in New York and London in 1906 (Troughton cited in Boom et al. 2012). In NSW, marsupials were taken off the list of noxious animals in 1932 yet:

> *While the kangaroo industry's current focus is upon the "sustainable use of wildlife," the history of attitudes towards kangaroos as "pests" is so deeply and widely entrenched that it is impossible for the industry to meet welfare standards.*
>
> (Boom et al. 2012, 17)

Other animal losses include over 2.5 million mutton birds sold through Launceston markets from 1904-1908 according to the Tasmanian Commissioner of Police, and 5.8 million Australian furs traded from the period 1919-21 according to the American Museum of Natural History. In 1921-22 there were many scientific and commercial collecting expeditions and there was great fear of extinction (Hutton and Connors 1999, 41-43). During the Depression, some governments rescinded protection policy amidst great protest from Wildlife groups. Queensland rescinded the protection of koalas and possums in 1927, resulting in the deaths of over one million possums and half a million koalas in one month. In 1930, NSW, after much protest, restricted licences to the unemployed but the result was more than 800.000 possum deaths in two-months (Hutton and Connors 1999, 43). Victoria at this time outlawed the selling of skins from interstate.

Management in Flux

Due to weak governmental regulation in the late 1800s, public management within state structures needed to be strengthened (Hutton and Connors 1999, 46). Positions in science and conservation were insecure. For example, in the 1870s Ferdinand von Mueller, the Victorian colony's botanist, a conservationist with an ecocentric focus, lost his directorship of the Melbourne Botanic Gardens due to management wanting an ornamental rather than scientific focus. In Brisbane, in 1893, after a public outcry, F.M. Bailey was reinstated with 60 percent of his former wage as the colonial's botanist and director of Brisbane Botanic Gardens. He had been retrenched in a wave of government cutbacks. In 1893, NSW director-general of forests, after being enticed three years earlier from South Australia with a higher salary, had his position abolished as part of economic savings (Hutton and Connors 1999, 52). Charles Lane-Poole, an experienced forester, who was proceeding to train forestry staff and had drafted a forest bill for WA that was regarded as an exemplar by his peers, was forced to resign in 1921 because of disagreements over vested interest leases and concessions. He became Forest Advisor and Inspector-General of Forests for the Commonwealth Government, but he continued to criticise state governments for land settlement practices that resulted in clear felling of native forests and their lack of support for sustainable forestry (Hutton and Connors 1999, 53).

Progressivism

Progressivism emanating from the United States started to influence Australia in the mid to late 1800s. G. P. Marsh's, *Man and Nature*, a book about the destructive effects of human domination of nature and the damage caused by forest clearance (Wheeler 1975, 5-6) was disseminated in the Australian press in the 1860s (Hutton and Connors 1999, 51). Progressivism is a political and social reform movement (Milkis 2019) that has had an ambiguous definition. For our purposes, you cannot have progress without conservation. In progressing human beings need to be connected to the land and their history on and in it (Dewy 2016). Progressivist reform introduced planned use and renewal of native forests for the benefit of humanity (Hutton and Connors 1999, 55). Yellowstone, the world's first national park, was declared in 1872, the same year that the word "conservation" was coined to mean "conserving scarce natural resources." It was also the year of the inaugural Arbor Day (Wheeler 1975, 6). Ferdinand von Mueller in Victoria, using the arguments of utility, ethics, aesthetics and public health, advocated for practical measures such as the establishment of local forest boards for preservation (Hutton and Connors 1999, 51). In NSW, in 1876, Reverends Clark and Woolls put these arguments before the Royal Society and numerous royal commissions were held, or pledged, in several colonies.

With imperial demand for Australian hardwoods increasing, given the arrival of the railway age, colonies had to address the issue. South Australia, with few forest resources, led the way. Progressivism nourished the notion that a country's greatness could be gleaned from its resources, thus supporting wise use and sound scientific management (Hutton and Connors 1999, 55). Being within the national efficiency and technocratic, dominant hegemony, the progressive movement gave support to tracts of land being conserved. It gave backing to the establishment of national parks and it saw the establishment of forestry departments within states. Yet, even when systematic management with rational assessment of forest resources was set up, bureaucrats were fighting the embedded interests of various forest users (Hutton and Connors 1999, 51).

In 1894, the second conservator of forests in South Australia complained to the Australian Association for the Advancement of Science that he had a "lack of power to defend the forests against parochial interests" (Hutton and Connors 1999, 51-52). Institutional arrangements within Australia's political structures were influenced at the start of the

1900s by a combination of the new Federation, advocacy groups and the rise of Labor Parties (Hutton and Connors 1999, 59). Yet, new state-level structures started to be influenced by the resources industries they set out to control, and some groups, particularly utilitarian foresters, found themselves continuing their calls for effective management practices. There was a NSW Royal Commission in 1907-8 (NSW Government: State Archives and Records n.d. b), subsequently followed by the Forestry Act 1909 (NSW). In 1915 the NSW branch of the Australian Forest League was established (Hutton and Connors 1999, 52) and in 1916 NSW established the Forestry Commission of NSW through the enactment of the Forestry Act 1916 [NSW] (Forestry Corporation 2016), which replaced the Forestry Act 1909 [NSW] (Carron 1985).

Mastery of resources was also part of progressivism and encompassed engineering projects such as dams and irrigation that contributed to environmental degradation (Hutton and Connors 1999, 21). Yet, the social base of this movement involved more than technocratic utilitarianism; it encompassed moral benefit, commitment to nature protection and anti-materialist values as well—it incorporated Romanticism's love of the land (Hutton and Connors 1999, 20): "Progressivism produced the rational and aesthetic enjoyment of nature that united and inspired Australia's first-wave environmentalists."

Moves to protect the environment were couched in anthropocentric rather than ecocentic terms, part of the context of the 1800s and early 1900s and continuing to today. Economic usefulness, national efficiency goals, recreational value and public health benefits of sanitation were the arguments put forth by first-wave conservationists in an effort to protect birds, preserve native ecosystems, and enact pollution controls in the late 1800s and early 1900s (Hutton and Connors 1999, 21). Yet, while utilitarianism was a substantial part of the early environmental movement support, there were also elements of ecological and intergenerational equity within. Whist groups contended for the preservation of native forests, governments often gave into vested interest for short-term gain. When institutional arrangements are made, they are often vulnerable to redirection away from the original governmental goal under the influence of powerful resource industries (Hutton and Connors 1999, 55).

Protection of Native Flora

While protection for birds and animals tracked a long, arduous and convoluted path, safeguarding of native plants took a lot longer. It was 1927 before The Wild Flowers and Native Plants Act (NSW) came into effect. It repealed some of the sections of the Local Government Act 1919 (NSW) and the Railway Act 1912 (NSW), and certain other Acts, to sanction wildflower and native plant protection (National Parks, Australia: New South Wales 1979, 96). Native plants were able to be proclaimed as protected, via gazettal notification, throughout the state or in specific regions, for a limited or unlimited period of time. Native plants and wild flowers within the jurisdiction of the Forestry Commission were also protected, ensuring protection on all Crown land. Protection was also covered for species taken on private property if unauthorised by the landowner. The minister had the authority to issue licences, with conditions, to pick protected wild flowers or native plants for scientific purposes. Significantly, in addition to police and honorary rangers being given regulatory responsibilities, the Act provided for authorised public servants associated with land administration, and landowners and lessees, to also enact regulatory consequences (Mulligan and Hill 2001, 151).

The segregation/segmentation of species for protection, separated from the total ecology of the landforms—the habitat, the niche, exemplified in the legislation—was also embodied in the administration, with the Wild Flowers and Native Plants Protection Act 1927 (NSW) managed by local government rather than the Chief Secretary's Department, as with the Birds and Animals Protection Act 1918 (NSW). Additionally, the legislative history illustrates which species were viewed as important. To start with, concern concentrated on exotic birds and animals, and native birds; followed by some native mammals; followed in 1918 by most animals, other than those listed in the schedules; followed by protected plant species. Unfortunately for reptiles and native rodents, they were excluded from the legislation.

The Rise of Ranger Leagues

In response to the 1927 legislation regarding rangers, Walter Trinick, the Sydney branch manager of the Melbourne *Argus* newspaper and an early conservationist, formed a Ranger League and encouraged public servants to join. He had his assistant, Dot Butler, an avid bushwalker and conservationist, write to all the editors of house journals in the

public service departments to promote the League—they consequently attracted 700 members (Mulligan and Hill 2001, 151). In 1928, John Tipper became the organisation's founding president (Gowers 2002). The Ranger League's objective was to provide protection, including bushfire protection, and preservation of bushland around Sydney as per the Wild Flower and Native Plant Protection Act 1927 [NSW] (Gowers 2002; James 2013, 65). The League was to foster an interest in nature (Gowers 2002; James 2013, 64; Mulligan and Hill 2001, 151). Some of the achievements of the Ranger League were an annual exhibition of wild flowers from the Sydney region, having the cabbage tree palm, common in the Illawarra, declared a protected native species, and to have the term "wild flowers" replaced by "native flowers" within the official nomenclature (Mulligan and Hill 2001, 151).

Unhappy with the response of government to protect animals, the Wildlife Protection Society of Australia stepped up political pressure by establishing a militant auxiliary (James 2013, 41). Stead and John Tipper, as part of an organising committee, called Sydney's honorary rangers to a conference in 1929. Additionally, society councillors talked on radio, answered inquiries via phone, and wrote articles to publicise the plight of native animals.

In 1930 an amendment to the Birds and Animals Protection Act 1918 (NSW), the Birds and Animals Protection (Amendment) Act 1930 (NSW), extended the remit of legislative enforcement for animal protection. In addition to police and honorary rangers, public school teachers, conditional purchase inspectors, people associated with state forests through connection or employment with the Forestry Commission of NSW, stock inspectors, Department of Agriculture field officers, Fisheries inspectors, and Metropolitan Water Sewerage, and Drainage Act 1924 (NSW) rangers were included as rangers due to their vocation (Strom 2017).

The ranger system was problematic. Administration of both the native plant and animal legislation was severely understaffed with each having a part-time administrator within their respective offices (Strom 2017). Proposed rangers had three challenges: they had to know they were eligible, take it upon themselves to become informed about the legislation, and be prepared to take on the difficult, tricky, and brave—given the lack of support—task of enforcing the legislation. According to Strom, rangers were treated like they were a burden and were often criticised. However, with assiduous police officers

and enthusiastic rangers there was an effect on protection with many rangers doing great work in educating the public, and by the interwar period, with greater movement around the country, people were starting to regulate their own habits (Strom 2017).

Bushwalkers, Explorers and Urban Reformists

From the mid to late 1800s onwards, there were four distinct groups trying to effect change in conditions for preservation, conservation and recreation of and in the natural environment—each with distinct areas of interest. They had similarities, which assisted their causes, and differences that set them apart. These groups were the scientists, the naturalists, the bushwalkers and the urban reformists (Hutton and Connors 1999).

Bushwalkers wanted natural environments for adventure, solace and sanctuary, and the urban reformists wanted to improve their urban environment and wellbeing (Hutton and Connors 1999, 61). These different agendas feeding the reaction to the loss of environment—both natural and urban, tended to be more anthropocentric. Both these groups had an urban membership base, a distinction from the scientist, naturalist and acclimatisation groups which radiated out into the countryside. These distinguishing factors are important in understanding the disunity within advocate groups which shaped the events within this history. Bushwalkers focused on the national park campaigns while the urban parks and playground groups, and related organisations, focused on the public health of cities, generally through the reserve of urban parkland and heritage. Despite these differences, however, there was considerable cross-over (Hutton and Connors 1999, 23).

While exploring the natural environment had its roots in colonial adventure, the extent to which explorers were assisted, through well-worn Aboriginal paths and guidance, must be acknowledged (Hutton and Connors 1999, 61).

> *The idea of the colonial adventure—of expanding the boundaries of Western knowledge and accomplishment through great feats of human endurance—galvanized the entire community in the three decades preceding World War I. One did not have to be an imperialist to be affected by the romance and bravery of the genre of adventure tales, fictional and non-fictional, which flooded the Australian markets in these years.*
>
> (Hutton and Connors 1999, 63)

Bushwalkers

The thirst for adventure, exploring new environs yet to be surveyed, testing one's mettle in the great outdoors, inspired many bushwalkers and bushwalking groups (Hutton and Connors 1999, 64). By the 1890s, Sydney had a population of half a million people and a direct rail link to the (Royal) National Park. The national parks were popular places. The Warragamba Walking Club, open to both sexes, was founded in 1895.[4] It conducted walking tours utilising roads and tourist lodging for long excursions (Hutton and Connors 1999, 64).

Yet there were many others inspired to explore off the beaten track. Myles Dunphy was one of the most proactive supporters of national parks in the 1900s (Hutton and Connors 1999; James 2013). Dunphy established the Mountain Trails Club in 1914 to explore the countryside. Club members tested their self-reliance and resourcefulness, developing bushcraft and designing specialist bushwalking/camping equipment along the way (Hutton and Connors 1999, 64). The club's membership was by invitation only and they embraced mateship and democratic values. Many of the small membership (no more than 20 in the first 14 years) had architectural, engineering, artistic and business skills. Dunphy, an excellent draftsman, became a lecturer at Sydney Technical College after finishing his architectural studies (Hutton and Connors 1999, 65). He produced many detailed maps thoroughly covering the topography of the countryside, naming features with Aboriginal, poetic and standard terms (Hutton and Connors 1999, 66).

The Mountain Trails Club was instrumental in organising popular recreational walking groups. By 1922 there were three new bushwalking clubs. With the increased popularity of bushwalking, the Mountain Trails Club established the Sydney Bush Walkers in 1927. Open to the general public, its goals were to encourage an appreciation, and preservation tendencies, of the natural environment (Hutton & Connors 1999, 66). Bushwalking and hiking became even more popular during the Depression years of the 1930s (Strom, 1979, 66). There were so many bushwalking clubs by 1932 that a NSW Federation of Bush Walking Clubs was formed to work together for conservation of "primitive" areas (Strom 1979, 66). Additionally, in 1933, The National Parks and Primitive Areas Council (1933-1962), a conglomeration of bushwalking clubs including the Mountain Trails Club,

[4] A. Strom, audio interview by D. Tribe. 1991. July 7, 2015.

Sydney Bush Walkers, Bush Tracks Club and Coast and Mountain Walkers, (National Parks, Australia: New South Wales 1979, 94) were exploring and documenting sites to be set aside as parks and primitive areas (Strom 1979, 66).

Paddy Pallin, an original member of the Sydney Bush Walkers Club (Hutton and Connors 1999, 66), at a loss during the Depression, started making lightweight camping equipment (James 2013, 164). The manufacture of gear such as tents made out of airship fabric—japara silk tents, framed rucksacks, purpose-designed camping cook ware, lightweight, easily packed sleeping bags and the famous Paddy Pallin blanket roll and gunnysack (Strom 1979, 66)—made hiking much more practicable.

Networking—Shifting the Conservation Agenda

To reflect on events up to the 1930s: community groups such as the Gould League of Bird Lovers and general protectionist groups generated by the first preservationists and conservationists, were partially institutionalised due to their associations with government and industry (Hutton and Connors 1999, 59). These groups shifted Australian consciousness and taught the value of the forests and fauna. Success within the political system was slow and sometimes retrograde but resulted in the progress of new institutional arrangements—national parks, forestry departments, nature study in schools, and governance within urban public health, parklands and town planning (Hutton and Connors 1999, 19). Political strategies employed by people trying to effect change were public meetings, lobbying, and educating the general public. Debating and focus on conservation issues were opened up within the imperialist hegemony (Hutton and Connors 1999, 18). Once the initial bureaucratic regulatory structures had been set up, scientist involvement in the movement waned (Hutton and Connors 1999, 59).

The networking within the preservation, conservation, recreation groups in Sydney and beyond was complex and wide-ranging and very important in shifting the conservation agenda. For instance, Stead was also an active councillor in the Sydney Naturalist Club and authored many books about fish, crustaceans, trees and rabbits. He was the general editor of the Shakespeare Head Press Australian Native Books (Walsh 1990; Webb 1998).

Constance Le Plastrier, an educationalist and author, joined the Council. She had an interest in botany and in 1933 wrote *The story of our plants: First Steps in Australian Botany* (Webb 1998, 50). She introduced one of her students, Thistle Harris, to the

Council meetings. Harris became a member of the Club and a teacher, educationalist and naturalist teaching biology and nature study (Kass 2018) at Sydney Teachers College from 1938-1961. She wrote many books on Australian native plants and nature study and was an active conservationist, who formed a partnership and later marriage with Stead (James 2013, 28). Harris also became an active member of the Wildlife Preservation Society of Australia. She joined the Australian Forest League and took an interest in the Junior Tree Wardens, the League's younger membership. She compiled and edited *The Junior Tree Warden* first published in May 1937, was the Honorary Secretary of the Illawarra-Bankstown Federation of Junior Tree Lovers in 1935 (Webb 1998, 49) and the Honorary Editor of the *New Horizons in Education* from 1940 to 1944 (Webb 1998, 71).

Stead had made a living working/consulting in the fish industry, so these networks were also strong. He, with others advocating for wise fisheries, influenced a voluntary decrease in the number of trawling vessels and the Fisheries and Oyster Farms Act 1935 [NSW] (James 2013, 38). Stead was on the Town Planning Committee, which had delegates from affiliated community groups such as the Australian Forest League and the Parks and Playground Movement (James 2013, 63-61). He was the president of the reformed state branch of the Australian Forest League in 1930 and he was also on the committees of many other groups such as the NSW Geographical Society (James 2013, 36), the Aquarium Naturalists, the Gould League of Bird Lovers, and the Royal Zoological Society of NSW. Additionally, he was an Honorary member of the American Fisheries Society and a Fellow of the Linnaean Society of London (Walsh 1990).

There was a big cross-over of town planners and architects. There was also a big crossover into conservation, including Arthur Small and Burley Griffin. Burley Griffin, within a breakaway Town and Country Planning Institute, maintained links with the Town Planning Committee, through Small and Stead. Similarly, Stead and Small were involved with the Parks and Playgrounds Movement that had been set up by Charles Bean in 1930 and included affiliated delegates such as suburban progress associations and local Tree Lovers' Leagues (James 2013, 63-64). Bean was the well-known Australian war correspondent in the First World War yet before this, he had worked on the *Sydney Morning Herald* and often wrote on the topic of progress in town planning. He had experienced what was happening in America, Canada and England while travelling in his position as London Correspondent for the *Sydney Morning Herald* (James 2013, 77-78).

In 1939 Bean was also a member of the NSW National Fitness Council which conducted camps that included nature study. The NSW State director of Physical Education became the Fitness Council's Executive Officer. Marie Blyes and Pallin were on the Council's Youth Hostel Committee. Pallin was also involved in the Scouts and the Federation of Bushwalkers (James 2013, 92-93). Blyes belonged to several bushwalking clubs and was a Federation of Bushwalking Clubs Secretary and editor of its annual journal (James 2013, 163-164). These are just a sample of the extensive network of urban reformists.

The Parks and Playgrounds Movement, established in 1930, followed an earlier Playgrounds Association that had some prominent women members (a journalist and the Premier's wife, for example) and some members of the Town Planning Association which had been established in 1913 and included a Parks and Playground Committee (James 2013, 80). According to Bean, the little free space that was available in urban areas was there by chance, and, unfortunately, many children were playing in dust or damp because of poor drainage and sewage (James 2013, 81). Park advocates wanted play spaces near children's homes and schools with sandpits, trees shelter and space. The planners wanted greener suburbs and Sydney to be encircled in a green belt. Promotion of their cause included articles and presentations on child welfare. They met with governing bodies to acquire land and sometimes furnished the land with play equipment. The Parks and Playground Movement represented men's, women's and children's sport and recreation, town planning, health bodies, biological, conservation and historical societies, progress associations, private and co-opted members. There were more than 80 groups by 1937 (James 2013, 86).

Progress and Conflict from the 1930s

The 1930s saw:

- the gathering of support for a Greater Blue Mountains national park and a snow country national park within NSW and Victoria via the promotion and development of proposals by Dunphy and the National Parks and Primitive Areas Council, [5]
- support for the conservation of wildlife via the Wildlife Preservation Society, with Stead at the helm,
- support through private funding to publish material about conservation affairs,
- calls for a national parks service based on the US Service established in 1916,
- calls for effective planning by people such as Burley Griffin and groups such as the Parks and Playground Movement, and
- concern for the issue of soil erosion.

(Strom 1979, 66)

There was conflict between those who understood the aridity and carrying capacity of Australia and those who aspired to prosperity and unlimited growth, an argument that is still debated. In 1921, Griffith Taylor, a member of Scott's Antarctic expedition of 1909, had his textbook banned by the Western Australian education department due to his assessment of the limitations given the ancient aridity of the land. National and imperial rivals, with Commonwealth funding, organised a tour by Stefansson, who had advocated human settlement of the Arctic lands. Stefansson discredited Griffith, pronouncing Australian deserts capable of sustaining large human and animal populations.

In the 1930s, as a result of catastrophic soil erosion in the Mallee, there were constantly blocked roads, railways and stock water channels. Sand sheets buried fences and croplands (Pratley and Rowell 1980, 13). Major agricultural policy was developed in response to man-made disasters rather than as a proactive process (Pratley and Rowell 1980, 1). In a report to the House of Representatives Standing Committee for Long Term

[5] Please note an acknowledgement of conservationists in Victoria and other states who were also advocating for national parks. From my reading NSW seemed to be a little slow in moving forward from time to time.

Strategies titled *Australia's Population "Carrying Capacity": Two Ecologies* (1994, 17), Professor Jonathan Stone's presentation emphasised the central issues of Australia's arid geology and anomalous fertile area. He argued persuasively, with strong scientific community support, for a "sophisticated neo-Malthusian schema, far more compassionate than the original."

In 1938, the Soil Conservation Act (NSW) led to the establishment of the Soil Conservation Service. An initial survey of NSW found that 48.3 percent of the 48 million hectares in the Central and Eastern Divisions were affected to a considerable degree by soil erosion (Strom 1979, 66). The urgent need to combat erosion benefited the fight to conserve forests as vegetation stabilises the water catchments, particularly in the upper, steeper regions (Strom 1979, 67). Yet disapproval still existed and in the late 1970s destruction of forests on steep slopes, including clear-felling, and overstocking on cleared peripheral lands was still continuing.

After a bushwalker campaign, Garrawarra Primitive Reserve, now the southern extension of the Royal National Park, was reserved in the 1930s. This was the first dedication since Ku-ring-gai Chase in 1894. Bouddi Natural Park, New England National Park and Morton Primitive Reserve were also declared in the 1930s (Strom 1979, 66).

In 1944, the Kosciusko State Park Act (NSW) was legislated. It was the first park to be permanently reserved and could only be revoked by a special Act of Parliament. There was no security for other parks until the enactment of the National Parks and Wildlife Service Act 1967 [NSW] (National Parks, Australia: New South Wales 1979, 97; Strom 2017). Previously, national parks, state parks and historic sites were managed by individual Trusts. These Trusts were under the authority of the Parks and Reserves Division of the Department of Lands. They could be revoked at any time and were subject to the Mining Act 1906 [NSW] (National Parks, Australia: New South Wales 1979, 95).

The end of the Second World War saw greater political possibilities. While the war held the conservation movement back through loss of workforce and resources, there was greater conservation advocacy dynamism, possibly to compensate for the losses of war (Strom 1979, 67).[6] Before the war's end, in 1944, the "fur trade" was putting pressure on

[6] A. Strom, audio interview by D. Tribe. 1991.

the Chief Secretary's Department for a regular open season for some species, particularly possums. This put pressure on the Department because, while possums were a nuisance, they also attracted public sentiment. They had higher emotive significance than kangaroos (Kingsmill pers. comm. quoted in Strom 2017). It became known that there was a practice of fur-trade royalties funding wildlife authorities in Victoria and Tasmania. Kingsmill visited Victoria and consequently an inter-departmental committee was setup to investigate fauna protection administration for NSW. This exploration into conservation of wildlife included high level representation from the Department of Agriculture, Education and The Australian Museum. The consequential legislation, the Fauna Protection Act 1948 (NSW) was, in hindsight, seen as progressive and received praise both nationally and internationally, according to Strom (2017).

Conclusion

From this portrait of the settlement and development of early Australia, it is evident that the conception and development of environment awareness in NSW had a long and rocky road. Throughout, there was a basic tension between the exploration and understanding of a new and exciting land with novel and unknown species and terrains on the one hand, and the rapid destruction of this unique environment (evident in the loss of species, deforestation, massive erosion issues and the introduction of invasive animals and plants), on the other. All of this occurred at a time of enormous change in society as technology gained momentum. In this period, four distinct advocacy groups emerged, generally working in unison—the naturalists, scientists, bushwalkers and urban renewalists. The underlying tension between economic developers and environmental sympathisers often treats these different groups as a monolith, as if all those concerned with the environment are the same. But even from these early days, the differences among "environmentalists" and the emergence of these distinct groups lay the groundwork for debates that shaped the formation of the environmental education centres in important ways. These commonalities and tensions crystallised in the creation of an Act that enabled the immediate precursor to the EECs. This Act was the Fauna Protection Act 1948 (NSW).

CHAPTER 3: BIRTH, DEVELOPMENT AND DEMISE OF THE FAUNA PROTECTION PANEL AND CONSERVATION EDUCATION—THE PHOENIX

> *Here was a very large advisory group, considerably larger than recent research is showing to be the most effective number of a group, seven, to reach a consensus. But in many ways, the group of individuals assembled as representatives, while dominated in the early days by the bureaucrats on the Panel who tried to stifle an imaginative approach to wildlife conservation, soon became absorbed in imaginative possibilities. In moving in this direction, their enthusiasm began to educate those who may have had a different vision. So "by the end of the fifties something of a revolution in thinking had occurred not only in the Panel but also within the community… it is now clear that the wildlife service went into the 60s with a clear cut program and a capacity of considerable effectiveness."*
>
> (Strom quoted in Fox 2016, Ch. 7, para. 30)

The Fauna Protection Panel

In many ways, the Fauna Protection Act (NSW) of 1948 was a leap forward in shifting the agenda in favour of environmental management and protection, largely through the creation of the Fauna Protection Panel (FPP). Ironically, the creation of the FPP led to an overt official broadening of environmental concerns, with fauna protections later formally linked with flora protection and the protection of ecosystems. Each aspect of the environment that gained public address carried with it political and government struggles—epitomised in the career of a central figure in the establishment of the environmental education centres (EECs): Allen Strom. In large part, through the work of Strom, the formation of the FPP led directly to the formal structures of our contemporary NSW National Parks and Wildlife Service (NPWS), and the first formal field studies centre (FSC) within the Department of Education. These developments make the links between the current EECs and the earliest parts of Australia's settler history very clear.

As with all historical phenomena, the Fauna Protection Act 1948 (NSW) did not come from nothing. In this case, early in its establishment, the Wildlife Preservation Society of Australia had requested a professional service to administer wildlife protection laws. Despite promises, neither the Birds and Animal Protection Act 1918 (NSW), nor its 1930 amendment, nor the Wild Flowers and Native Plant Protection Act 1927 (NSW), covered this resourcing. The Fauna Protection Act (NSW) was legislated in 1948, nearly 40 years and two world wars after the Wildlife Preservation Society instigated advocacy for

managed wildlife reserves and guardians/educators (Hutton and Connors 1999).[7] The legislation established the FPP and a Chief Guardian of Fauna to administer the Act which replaced the Birds and Animals Protection Act 1918 (NSW) and its 1930 amendment (National Parks, Australia: New South Wales 1979, 97). The Panel was tasked with:

- establishing and managing faunal reserves (later to become nature reserves),
- engaging in educational activities,
- encouraging the establishment of faunal societies (later flora and fauna protection societies/conservation societies),
- the authority for the protection and care of fauna,
- conducting or cooperating in research for the protection and care of fauna, and
- advising the Minister on protection matters.

(Fox 2016; Strom 2017).

Under the Fauna Protection Act, fauna was defined as birds and mammals, native, introduced and imported. Rats and mice were excluded, with the water rat being the only exception. Reptiles and fish were unprotected. While the FPP considered extending protection to reptiles, it was not until the draft Conservation Act (NSW) in the 1960s that the protection of reptiles and some insects was recommended. It took the National Parks and Wildlife Act 1974 (NSW) to enact this protection (Fox 2016; Strom 2017).

The Panel was responsible to the Chief Secretary (late to be termed Minister) of the Chief Secretary's Department[8] and had representation from the Departments of the Chief Secretary, Agriculture, Lands, Tourist Activities, Water, Soil and Forestry Commission, and, Education. The Forestry Commission had a separate seat at the table. Four of these departments had their senior civil servant, the Under Secretary, as their FPP

[7] A. Strom, audio interview by D. Tribe. 1991.

[8] The Chief Secretary's Department was a vestige from colonial days that was abolished in 1975 (it was revived on two occasions of no consequence to this story). Some of the responsibilities of the Department included: 1) the protection and welfare of the Aboriginal population; 2) Lord Howe Island; 3) gaming, racing, betting and poker machines; 4) theatre regulation and licensing; 5) censorship and regulation of literature, art, films and plays; 6) custody of the great seal; 7) electoral matters; and finally, and significantly for this story, 8) environmental protection and fisheries. According to Strom (2107), this Department had a history steeped in early colonialism. It had retained characteristics of parsimony and conservatism.

representative—that was the Department of Lands, Agriculture, the Chief Secretary's Department and Tourist Activities (Strom 2017). There was a representative of the agriculture and grazing sector who was also from the Government benches. The Australian Museum and the University of Sydney each had a representative (Fox 2016). The final three Panel members comprised a well-known philanthropist with protection tendencies (animal enclosures—sanctuaries/zoos), Ted Hallstrom; a mammologist at the Australian Museum nominated by the Linnaean Society, Ellis Troughton; and Strom, nominated by the Preservation Society of Australia and supported by the Sydney Bushwalkers Club. These Panel members were to represent "preservation, conservation, protection or scientific investigation of fauna" (Strom 2017). The first Chief Guardian was Frank Griffiths, previously a senior clerical officer in the Chief Secretary's Department.

According to Strom, the Panel was a tool of political and bureaucratic administration with no burning desire to see conservation succeed (Strom 2017). It operated in a context of compromise between personalities and policies (Fox 2016), and members knew that change would come from the electorate (Strom 2017). Strom observed departmental heads assuming the function of "super-politician"—filtering out recommendations that were seen to be too contentious. Strom found this practice an injustice in the organisation of the NSW public service—making a "cipher" of the Minister and proving counterproductive to innovation (Strom 2017, Ch. 4, para. 14). There were, of course, conflicts for Panel members who were unlikely to go against the demands of their job (Fox 2016). Most Panel members saw themselves not as planners but as a reference group. Only one of these early members of the Panel made a systematic effort to visit established faunal reserves to understand potential management problems and that was Harold Messer from the Department of Conservation who also understood the necessity of badgering the bureaucracy, according to Strom (2017).

The networking instigated by the Panel was beneficial for the progress of conservation. Examples of this networking are peppered throughout this history. However, as an example, the panel member with a particular interest in grazing and agriculture and from the Government benches, Roger Nott, became the Minister for Mines in the late 1950s. Strom, with Nott's assistance, was able to secure protections for some sections of

Bungonia limestone, a unique environment in the Southern Highlands, by extending the area of reserve—for a short time only, however, as the protection was later relaxed.

There was an initial lack of understanding of ecosystems with many Panel members focused on "single species" protection with no understanding of the need for habitat protection. Generally, the anthropocentric mentality loomed large. Over the years many Panel members came to understand conservation matters through their involvement with the Panel, and indeed it was Cec Buttsworth, the Chief Secretary's Department representative, who persuaded Strom, a strong advocate for conservation, to take on the position of Chief Guardian of the FPP after the death of Frank Griffiths in 1958 (Fox 2016).

In the early days, the Panel had to work exceedingly hard to win a minimum of nature reserves. One difficulty was that the Ministry for Lands had to approve land being dedicated as faunal reserve. According to Strom, this Department was archaic in its thinking and still in "unlocking the land" mode. Conservation was not a priority. Strom also alleged that to make matters worse, many within the Lands Department assumed they were more knowledgeable than the experts. Competing interests in the 1950s included soldier settlements, wheat expansion out west, and the breakup of many estates (Fox 2016). Only land that was perceived as not valuable for other purposes was seen as appropriate for conservation.

The first four extensive reserve proposals included areas within Barrington/Gloucester Tops, the middle Shoalhaven River, the Macquarie Marshes, and a sampling of mallee and mulga inland. These proposals got nowhere—they were simply purposefully ignored. There was no response to the submission for a nature reserve from the Western Lands Commission. Similarly, the long-awaited response from the Department of Lands for the other three proposals was negative as the Department of Lands were unwilling to assist in defining the boundaries given the descriptions made. This was a "Catch-22" given that there was no resourcing of field survey staff or cartographers. Making the approval process more arduous and time consuming, the Lands Department interpreted the Fauna Protection Act 1948 (NSW) to mean that approval was necessary from all departments and authorities that might have had an interest in the lands in question. Mines Department approval proved especially difficult. These issues took a long time to overcome but the

agenda slowly shifted forward with the collaborative effort and growth of reserve advocates and the expansion of the capacity of the Panel (Fox 2016; Strom 2017).

Catalyst for Change: The Role of Allen Strom

Strom, the Preservation Society of Australia's representative on the Panel, became a significant catalyst for change within the FPP and later, within the NSW Department of Education. It is worth noting Strom's history—his knowledge, skills and networks which had been developed over many years. These attributes assisted the Panel, the Caloola Club and conservation in general, particularly with education, in achieving wins throughout this history.

Strom had a rich history threaded through the fabric of the education institutions within NSW. He had won a Sydney Teachers College Scholarship and majored in Arts and Crafts/Industrial Arts for primary and junior high school teaching (1932-33). In 1934 he taught at Newtown Demonstration School (Strom 2017) where he met Ern Hodgkins, a member of Dunphy's Mountain Trails Club (Strom 1979, 67). He then taught at Yanco Agricultural High School and Narrandera High School (1934-36) where he was challenged to keep up with students who had a keen interest in biology, geology and the outdoors. In 1937 he returned to Sydney to teach at Enmore Activity School with the intention of furthering his learning in nature study (Fox 2016). Enmore had been set up as a pilot school for "slow-learning adolescent" boys after Dr Harold Wyndham, the Department of Education's first research officer, and the Director General, Ross Thomas, became concerned for both intellectually advantaged and disadvantaged students. The school was an experiment in practical education, with a program of three-years' duration encompassing a cross-curricular ethos.

At Enmore, Strom met Jim Thompson, a physical education teacher who later became an area director able to give Strom access to the Western Sydney Area for environmental education purposes. He then became reacquainted with Ern Hodgkins who introduced him to Dunphy and other members of the Sydney Bushwalkers Club. Dunphy and Moutrie Cullen, a teacher and shores studies specialist, encouraged Strom to study mineralogy/geology and general science at Sydney Technical College (now the University of Technology). He completed the course in 1943 (Fox 2016), graduating with

a distinction, before being transferred to Canterbury Boys High School the following year (Strom 2017). Subsequently Strom spent a lot of time exploring the bushland in the Sydney region (Strom 1979). In 1946 Strom was a field officer with the National Fitness Program and the first education officer at the Australian Museum. From 1947 until he took up his position as the Chief of the Fauna Protection Panel, Strom was a lecturer in arts and crafts at Balmain Teachers College (Strom 2017).

The National Fitness Camps, Caloola Club and Teacher College Residential Camps

In 1939 two hundred Enmore Activity School students were the first to participate in the National Fitness camping movement at Broken Bay. Gordon Young, a Canadian expert, was brought to Australia by the NSW Education Director General to set up a progressive program in physical education in line with the national fitness agenda (Fox 2016) which emerged from concern for the health of the urban child. Jim Thompson, a Gordon Young convert, suggested Enmore students would be a perfect cohort for the fitness camp. About the same time, Strom had met Keith Ingram on a Forest League field trip. He was a teacher from Parramatta with a nature study focus. Strom organised for Ingram to participate at Broken Bay. While the students participated in physical activity pursuits they also had the opportunity to connect with nature at a deeper level as a tent had been set up with activities to stimulate curiosity in nature study.

> *Looking back on it now, what impressed me was that here was an opportunity in this wonderful place to relate these kids, who had been so starved of nature, directly to the natural systems.*
>
> (Strom quoted in Fox 2016, Ch. 4, para. 15)

Strom became the Honorary Field Studies Officer for the National Fitness Council in 1940. This involved setting up trails for activities, providing resources and instructions for staff and searching for new camping sites for the growing camping scheme (Fox 2016). Together with Jeanne Golding, Strom produced six fieldwork handbooks in 1942 with the approval of the Minister of Education, Clive Evatt. The Physical Education Branch of the NSW Department of Education began Fitness Camps providing public secondary school camps and holiday camps. Without specialist teachers such as Strom, the nature study curriculum within the school and holiday camps would have relied on a visiting teacher's interest in nature study.

A Walkers Club was established with the Principal of Enmore Activity School, Syd Lenehan, and Strom selecting keen students who had previously experienced the Fitness Camps as participants. Initially supported by the National Fitness Council (Fox 2016), the new club engaged in exploration trips and conservation education programs (Strom 1979). Activities included camping, bushwalking, canoeing, cycling and courses in naturecraft as well as coaching in geology, botany and ecology (Fox 2016). Other young people subsequently became involved and, in 1945, the Walkers Club became the independent Caloola Club (to climb high), an expeditionary society (Strom 1979). They explored, studied, surveyed and documented many terrains around the state. The father of one of the Enmore students who had been involved in one of the fitness camps, Bill Dingeldei, offered his motor garage office as a meeting place (Fox 2016) and reconditioned a truck into a bus for club transportation (Fox 2016).[9] It was the Undersecretary of the Chief Secretary's Department, Buttsworth, who assisted in securing vehicle registration, with tight restrictions, for the Caloola Club. (Fox 2016).

It was through his work in the National Fitness Camping Program that Strom became the first Education Officer at the Australian Museum and established the Museum Education Service in NSW (Strom 1979)—taking education to the students. With Harris, a biology and nature study lecturer (Kass 2018) at Sydney Teachers College, Strom organised joint camps for students from Balmain and Sydney Teachers College.

These two-week camps were held at Sydney Teachers College's residential property on the Nepean River at Castlereagh late in the summer holidays. In the first week approximately 13 students were taught primary school nature study including programing, preparation, activities, follow up and revision. Study included:

[9] A. Strom, audio interview by D. Tribe. 1991.

> *... geology from the surrounding country to the river pebbles; what makes the soil; the typical plant; plant adaptations and where they live; the plant ladder of life; an ant colony; bird beaks and what they catch and eat; the Brushtail Possum; Aborigines' food supply; resource use of the floodplain farmers; soil erosion; the cycle of erosion; making "fossils;" story of the river; river life zones; life about a river pebble; an insect collection; an aquarium of river life or pond life and what the rules are for keeping it alive and more topics.*
>
> (Fox 2016, Ch. 5, para. 23).

The sixth day involved a student presentation of work and a collective reflection on values. In the second week of the camp a group of 30 primary school students participated in the camp, taught by the training teachers (Fox 2016). These camps ran from 1956 to 1958 when Strom became the Chief Guardian of Fauna for the FFP.

Education was seen as a pre-requisite to effective legislation, given that without public opinion laws seemed to carry no gravitas. This was noted to be the case for conservation legislation, particularly about fauna and flora protection (Morrison quoted in Pizzey 1992, 8). Education was also seen as necessary for effective action to counteract some of the detrimental effects of human habitation on the natural environment (Morrison quoted in Pizzey 1992, 10). Furthermore, environmental protection legislation did not happen without electoral advocacy (Strom 2017), yet the government's priority was the economy.

Nature Study

Nature study along with science, in the form of object lessons, entered into the curriculum in national (state) schools in the 1850s, and into the curriculum of all schools under the Council of Education after 1867 (Barcan 1965). The 1880 changes saw an introduction of history but a new emphasis on "the three Rs". Changes in 1905 saw literature and history become more prominent in the curriculum. Object lessons were largely replace, by nature study in the primary school curriculum after 1905 when the curriculum liberalised further.

According to Dorothy Kass (2018), nature study was supposed to encompass connection to and understanding of the environment. Kass, from her historical studies, found that nature study was integral to the New Education ideas of the late 1800s and early 1990s which incorporated, "learning by doing" and "self-activity"—new ideas at the time. This new nature study was to involve the handling and observation of nature—immersion in

nature through investigation with the teacher as a fellow investigator and guide. It involved experiments and class discussion, the utilisation of the local environment and the establishment and utilisation of school gardens. Furthermore, it involved "correlation" with other subjects, which were also to be reformed within the ideas of New Education (Kass 2018, 4). Yet, according to Kass, many educational historians found New Education to be "pluralistic and sometimes contradictory" (2018, 6).

According to Kass (2018), with the exception of Kevin Armitage's *The Nature Study Movement: The Forgotten Popularizer of America's Conservation Ethic* (2009) and Sally Kohlstedt's *Teaching Children Science: Hands On Nature Study in North America 1890-1930* (2010) there is a lack of scholarship on the history of nature study, with her own book rectifying its absence in an Australian context.

Nature Study in the United States

In the United States (US), in the early 20th century, the core elements of nature study including observation of the interrelationships among biotic and abiotic elements throughout the seasons, were further embellished with the addition of elements from the arts as well as science, such as poetry and literature, applied agriculture and human hygiene. The building of morality, spirituality and the utilitarian characteristics relating to agriculture and careers in natural science were the argued benefits for the individual and the whole of society (Kohlstedt 1997, 446). As nature study encompassed a fuller agenda, the substance and methods of nature study attracted debate (Kohlstedt 1997, 445). Nature study started to align with the preservation and conservation movements through its advocacy for nature, which Kohlstedt called a "principal if complicated element" (1997, 445). Nature study and science were not seen as the same thing by scientists yet they, along with educational leaders, concurred with the long-standing tradition of natural history that an educated person should know nature and that systematic investigations were an appropriate way to learn it.

The use of local resources as tools in primary teaching were both liberating and challenging for teachers with limited training (Kohlstedt 1997, 446). Sourcing specimens, establishing and maintaining gardens and organising excursions required more effort than other subjects (Kohlstedt 2010). In the larger US schools, staff were employed to carry out these functions, affording jobs for those who had a science background and an interest

in administration, generally women. This brought accusations of the discipline becoming too feminised and sentimental. The uptake of nature study in US schools varied with local schools able to trial it but many responding to high teacher resistance by dropping the program (Kohlstedt 1997, 446).

In the US, nature study lasted a generation—about the same length as most curriculum innovations, according to Kohlstedt (2010). In addition to the accusations of sentimentality and fear of feminisation of the education system, resistance came from overburdened teachers, social scientists concerned about a lack of systemisation and science educators wanting to boost their work and status. Notably, Kohlstedt (2010, 8) states that there was a backlash of positivist, masculine insistence on disciplinary science training that contrasted with nature study.

Around the turn of the 20th century, concern was being raised in the US that classroom practice and textbooks in nature study may not have been providing the necessary requirements for ongoing science study (Kohlstedt 2010, 178). These concerns included the content not being sufficiently scientific, the appropriateness of the incorporation of imaginative poetry and literature, and the preparedness of elementary teachers to teach nature study in and beyond their classrooms. Concrete curriculum and a more scientific vocabulary were called for amidst the wide range of practices generated by the rapid propagation of nature study (Kohlstedt 2010, 179). By the late 1930s, nature study was succeeded by Elementary Science in the US (Kass 2018, 208; Kohlstedt 1997, 449). Nevertheless, some women advocates continued integrating nature study literature into their teaching practice about nature and worked with the public interested in conservation and preservation efforts (Kohlstedt 2010, 179). Additionally, nature study survived in the programs of other organisations such as summer camps.

Nature Study in Australia

In Australia, about the late 1800s, nature study was used to challenge the rote learning approach to teaching elementary science. Teachers intended to encourage curiosity and delight (Kohlstedt 1997, 446). Views on the relationship of science to nature study were questioned as it was difficult to stimulate learner interest without affecting the objectivity of the subject matter (Kohlstedt 1997, 447). However, there was far less argument about the validity of nature study as science in Australia compared to the US. Indeed, Peter

Board, Director and Under-secretary of the Department of Public Instruction from 1905-1922 (Wyndham 1979), found nature study appropriate for young people and suitable in forming the foundations needed for later scientific study (Kass 2018, 208). Nature study persisted in Australia and had a resurgence after the Second World War (Kohlstedt 1997, 449).

Nature study was still practised in Australia and New Zealand well after it was out of favour in most US schools (Kohlstedt 2010). A School Nature Study Union was established in England in 1903 and persisted until 1994, even though nature study had faded in Britain (Kohlstedt 1997, 449). In later years this Union recruited from many countries including Australia (Jenkins and Swinnerton 1996).

Crosbie Morrison and His Conservation Critique

Crosbie Morrison's address to the Australian Institute of Political Science in Canberra in 1950, titled "Education for Conservation," is very informative in understanding where along the nature study—conservation education spectrum Australia was situated. Morrison was a Victorian naturalist with a background in zoology who became an influential spokesperson for conservation (Pizzey 2000). Morrison's address spoke of the importance of narrative and interrelationships of disciplines when it comes to educating about our environment (Morrison quoted in Pizzey 1992, 10). As an example, Morrison talked of the direct and indirect ways that humans have detrimentally affected Australia since European settlement (Pizzey 1992, 9). The two direct effects he named were the destruction of native flora and fauna and the introduction of exotic species (Pizzey 1992, 10). The indirect effects were seen as numerous, but an example was given of erosion caused by a species imbalance due to the disruption of natural limits caused by human impact—birds relocating due to cars near their habitat, causing their insect diet to increase in number and thus dieback of tea-tree and, consequentially, erosion (Morrison quoted in Pizzey 1992, 10).

Morrison argued that formal education was essential to give conservation its proper emphasis, and press and radio could then have a stronger impact (Morrison quoted in Pizzey 1992, 17). Morrison considered nature study a necessity as one needs to know it to understand it (Morrison quoted in Pizzey 1992, 11). He found that children were naturally curious but that this could be lost in the focus on "the three Rs". Morrison, had

observed nature study in schools in all states and found that while all asserted they were in favour of natural history, it was not to interfere with the academic curriculum.

Morrison noted the effectiveness of the Gould League and, in NSW, the Junior Tree Wardens. The Forest League's Schools Branch worked closely with the NSW Department of Education and in the 1920s, through the *Horticultural and Nature Study Bulletin*, they distributed information on nature study, wild flowers and forests (James 2013). They developed forest songs for children and ran school literacy, art and photographic competitions. Practically, school nurseries were developed for plant propagation, and the Forestry Commission's Gosford State Forest Nursery ran forest camp schools. The League, with Harris, revived Arbor Day, advocating for a School Forest Bill and school forest plantations (James 2013; Webb 1998). They also supported school wildflower gardens. During the Second World War years, the number of Junior Tree Wardens exceeded 200,000 (James 2013) and following the 1936 School Forest Areas Act (NSW), seventeen schools had their own school forest. From the mid to late 1930s, members of the Schools Branch of the Forest League, including Harris, advocated for revision of the nature study syllabus. They wanted a participatory, field-based program that tapped into students' need for "intellectual adventure" (James 2013, 117).

Effective nature study teachers were those who were involved with conservation—it was part of their life. The majority of teachers did not have the necessary knowledge as they did not have a personal interest in the subject. As Morrison argued, teachers do not like to teach what they do not know (quoted in Pizzey 1992, 11).

According to Morrison, for the majority of secondary schools, biology was a relatively new subject in the mid 1900s. Until then, physics and chemistry had been the only recognized science subjects. While biology was included within general science for the lower secondary years, and some schools provided biology, botany, or agricultural science beyond the intermediate standard, this was limited by the number of facilities and available qualified staff. Soil erosion was taught within social studies (Morrison quoted in Pizzey 1992, 12).

In the past, tertiary education and teacher education were seen as the core of the problem with a lack of natural history within the curriculum. Due to the huge influx of biological knowledge, specific disciplines such as zoology and botany emerged about the mid

1920s—much of the old natural history material was omitted to make way for genetics and cytology within the three-year university Bachelor's degree. The nature study side of zoology was not taught, with the systematics handed over to the museums (Morrison quoted in Pizzey 1992, 13). Field zoology was rare. Field research generally picked up pace in 1957 when the Commonwealth Science and Industrial Research Organisation's (CSIRO) Wildlife Research Division, established in 1949, started concentrating on native animals after initially focusing on the rabbit epidemic (Morrison quoted in Pizzey 1992; Strom 2017). Nevertheless, study of living organisms in the environment in the 1950s was deficient. Morrison pointed out the importance of studying animals in their natural habitat, particularly in Australia, where there is so much to learn given the uniqueness of the environment. Nature study was included in teacher education courses but these courses were only designed to teach how to teach. Students were learning the nature study content and how to teach it at the same time, and thus were not as confident as when the knowledge was already in place (Morrison quoted in Pizzey 1992, 14).

Morrison saw recreational education as effective but largely teaching to the converted (Morrison quoted in Pizzey 1992, 15). There were many publications associated with bushwalking clubs and naturalist societies—newsletters/bulletins and journals. Morrison was the editor of *Wild Life* from 1934-1954, a popular natural history magazine (Pizzey 1992, 146). On a Sunday evening, he hosted a fifteen-minute radio show of the same name that entertained a national audience (Pizzey 1992, 2000). This show lasted nearly 28 unbroken years (1938-1966). This was in addition to the presentation of a children's radio club on 3DB broadcast through the 1940s to1960s (National Film & Sound Archive: Australia 1988).

Reflection of This History

Themes that are peppered through the history of the conservation movement extend into the establishment and development of the FPP, to a lesser or greater degree. These themes are illustrated in the *The Life and Times of Allen Strom: Chief Guardian* written by Allan Fox and edited by McDonald, Dufty, Tribe and Schaefer (2016) after Fox's death, and reinforced in *Some Aspects of Nature Conservation in NSW During the 1950s and 1960s*, written by Strom but published posthumously with the editing expertise of Dufty,

McDonald, Tribe, Smith and Schaefer (2017). All of these people have had a significant influence promoting the environmental education agenda within NSW, nationally and internationally.

Emerging themes throughout include:

- the dichotomy of the dominant anthropocentric as opposed to ecocentric nature looms large,
- there is a bottom-up/top-down effect on governance and bureaucracy—the dominant hegemony. This is illustrated in the effect of lobby groups within the electorate on the upper levels of government and the bureaucracy and, additionally, the impact of global governance that started to intensify at this time,
- the effect of collegiality, networking and collaboration, and political interconnectedness, is exemplified throughout,
- examples of the placating of egos within bureaucracy and the waxing and waning of political favour are also threads that run through this rich history, and
- significantly, there is an attempted silencing that weaves its way through the fabric of this story.

Within the history of the FPP, the internal events and political shenanigans and circumstances of the day illustrated the difficulties faced by the Panel. Despite the difficulties, and some clear successes, the evolution of the Panel set the scene for the establishment of the FSCs within the Department of Education which became the environmental education centres we know today.

Progression

Eventually, the Department of Lands needed to show support for the Faunal Reserve sections of the Act but it took five years to secure the first reserve, John Gould Faunal Reserve on Cabbage Tree Island, in the now Port Stephens Shire, in 1954. Several more followed across NSW—Boorgana, Barron Grounds, Lion Island, Gurumbi and Nadgee. While some of the acquisitions were handed over by the Department of Land apparently for convenience or as a demonstration of benevolence, others were due to

recommendations by conservation groups (Strom 2017). For example, it was Strom with his survey and mapping skills and the Caloola Club who promoted Nadgee Faunal (Nature) Reserve. Other preservation-minded organisations such as the Illawarra Field Naturalists' Society, along with other local groups, advocated for Barren Grounds Faunal (Nature) Reserve (Strom 2017; Fox 2016).

The four large, original proposals had been developed by Griffiths and Strom. Reserve recommendations were carefully pursued by Griffiths as the Chief Guardian in the early days. Strom had the mapping and surveying skills, and networks (including scientific networks), to see through the misinformation/sleight of hand that was delivered by the bureaucracies generally—there were times where they tried to bamboozle with terminology. For instance, the Department of Mines' response to the proposed Tinderry Range Reserve was described by a government geologist friend of Strom's as "disconnected geological phrases from a geological dictionary" (Fox 2016, Ch. 8, para. 13). Strom often travelled to study potential faunal/nature reserve ecosystems—he had direct understanding of the geography, geomorphology and biodiversity of the entire State of NSW (Fox 2016; Strom 2017). Strom also had the skills to get things done (Fox 2016).

The Development of Divide

Emotional protection of animals as opposed to management of animals is a theme throughout the life of the FPP and beyond. Enmeshed within this is the enormous divide between the discourse in rural areas and that in the much more populated cities (Strom 2017). Additionally, there was very little scientific data on pest native species which initially made it difficult to make informed decisions. At one stage, the Panel was looking for evidence that wedge-tail eagles and wombats were causing rural damage. This was taking time given staffing issues. Clive Evatt, the Chief Secretary (1950-52), decided to protect both species which caused farmer outrage. The Cabinet reversed the protection quickly but not before the FPP bore the blame and were labelled disparagingly as "protectionists." At one stage Evatt changed the open season on kangaroos to an individual licence system without education and evidence calling the open season "fauna destruction" not "fauna protection." Fortunately, the matter was taken out of his hands. Evatt's decisions contributed to making change in wildlife management difficult into the future (Strom 2017).

Many years later, Fox continued the well-developed FPP kangaroo program in his role as Personal Assistant (Wildlife) to the Director of the NSW NPWS (Fox 2016). Fox saw modern wildlife service organisations as interested in animal protection rather than broad scale habitat and population management. He wondered whether this was due to the emotional response and subsequent political response when species population were reduced to a non-viable natural population of individual animals and the issue gained political traction. Fox also talked about the polarisation of animal protectionists and wildlife managers. Strom had kept open communication, education and process in an effort to manage the protectionist and conservationist political lobby, but the credibility of later administrations was lost when these processes were heavily filtered by Government with a close to complete five year political embargo on information from 1966. Fox blames the suppression of communication for estrangements that eventuated. For example, the disaffection of the Kangaroo Protection Society contributed to Federal Government and international bans on kangaroo products being sold internationally at particular times (Fox 2016).

Capacity and Resources

The capacity and credibility of the FPP grew from the late 1950s. Noteworthy was the methodical mapping work carried out *gratis* by Gordon McKern, a retired mining engineer, who from 1958 undertook to map all established sanctuaries and vacant Crown land found on Parish Maps (Fox 2016) onto county maps of the Central and Eastern Divisions of NSW. This enabled the assessment of the sanctuaries and the systematic processing of ecosystem selection for proposed nature reserves (Strom 2017). Additionally, and significantly, once the FPP staff grew in the late 1950s and 1960s, detailed field studies of proposed nature reserves were possible.

Wildlife Service development required fieldwork, yet the Fauna Protection Act 1948 (NSW) made no provision for appropriate staff and government administrators were reluctant to seek staff from the Public Service Board. Initially, Panel discussion revolved around the Chief Guardian of Fauna Protection carrying out fieldwork—totally unrealistic given his already considerable workload. Suggestions to second staff from other agencies or recruit Honorary Rangers came to naught. According to Strom, “It was an atmosphere of apology, an aversion to ‘empire building`” (Strom 2017, Ch. 6, para.4).

A request for funding for a field officer was denied in 1953. Initially, when the FPP asked for two field officers, Clive Evatt, Chief Secretary (1950-52), changed the request to five which was not well-received by Treasury. It took four years for the request to be granted (Strom 2017). The Panel was chagrined when their request was refused due to lack of finances, so they made a deputation to the new Chief Secretary, Gus Kelly (1952-1959). Eventually Treasury agreed to fund a field officer and a vehicle. The field officer position attracted little remuneration but Strom saw this as advantageous as only the truly dedicated would apply (Strom 2017). It was a trailblazing job with tasks including:

- making detailed studies of potential reserve areas,
- policing the offence provisions,
- establishing/encouraging fauna societies, and
- studying the management of kangaroo populations.

Fred Hersey was appointed to the position in 1954. After four years of wrangling they had the Chief, a field officer and a shorthand writer/typist. Hersey was the first permanent ranger for the whole state in wildlife conservation. He had been a member of the Caloola Club so knew about country. He understood the needs and problems and had a background in citizen-based nature conservation. He could win support for nature conservation. While he had no tertiary qualifications for the job, he had a thirst for knowledge and was very approachable (Strom 2017).

In 1955 the FPP was also given approval for a biologist to work out of the Museum of Australia on a scant salary offered by the administration. The position was advertised twice with no applications forthcoming. As the protocol was only to advertise Departmental vacancies twice, the position was abolished but the Chief Guardian of the FPP was not advised of this. It was two years between the initial approval and the discovery during a FPP inquiry that the position had been abolished (Strom 2017).

Strom had a good network within the Department of Education stemming from his teaching years. He had negotiated Fox's secondment as Education Officer in 1965 with the Inspector of Schools. Fox, an excellent community conservation educator, had been one of Strom's students at Balmain, was involved in the National Fitness Camps, and had been a member of both the Caloola Club and the National Parks Association of NSW.

The Inspector was happy to support conservation education and the Department of Education paid for Fox's salary for the two-year secondment (Strom 2017).

The Development of Conservation Societies

In 1950 the FPP minutes noted that Crosbie Morrison, editor of *Wild Life* magazine, had been making enquiries. He had been urging the establishment of nature clubs and had been informed that assistance would be given in the formation of such clubs. He was interested in publishing the information in his magazine. This inquiry prompted the panel to develop some form and function around the issue and it was thought that "natural history clubs" should be encouraged and assisted. Strom was interested in developing community fieldwork as it could increase interest and capacity in natural history, assist in the understanding of the influence of ecology in wildlife management, and grow familiarity with concerns for conservation (Strom 2017).

In 1951 Clive Evatt, the Chief Secretary and thus superior at the time, attended a Panel meeting inquiring about advancement of faunal societies. It was clear he wanted them developed. The subject was brought up once more at the next meeting by Frank Griffiths, first Chief Guardian, with the Panel requesting he write up a statement of aims and functions for the societies, which he did and presented to the next meeting. The statement read:

> *That Faunal Societies could assist in the protection and preservation of fauna in the following ways: (a) Educating the local public by distributing literature regarding protection, and by arranging film shows, lectures, etc. (b) Obtaining local press publicity for the work of the Panel and of the Society. (c) Collecting information locally about fauna, their habitats and movements, and in assisting the Panel in any surveys it might undertake. (d) Advising the Panel on local matters in connection with the protection of fauna. (e) Co-operating with trustees of parks and reserves established for the preservation of fauna and flora, or for recreation purposes. (f) Assisting in ensuring that the laws relating to sanctuaries, are observed. (g) Working for the establishment of local reserves and sanctuaries. (h) Preventing the destruction of natural habitats and encouraging the planting of trees.*
>
> (Strom 2017, Ch. 7, para. 33)

Strom saw this as "surprisingly activist-oriented" for its time, particularly given that "they were prepared and presented to the Fauna Protection Panel by Frank Griffiths, a product of the establishment; finally, they were approved by the Fauna Protection Panel, a bastion of the establishment, without alteration" (Strom 2017, Ch. 7, para. 34).

Faunal societies must have been viewed as a way through the impasse of being under-resourced with an enormous task at hand and an extremely parsimonious Public Service Board. Fauna protection societies became flora and fauna protection societies—later some became nature conservation societies. While the societies were to be independent, the Panel agreed to "supply assistance and co-operate closely in their activities" (Strom 2017, Ch. 7, para. 37). The Panel found through experience that it was best to motivate but not direct these groups. They were very localised groups, interested in local issues, working on local issues (Strom 2017). These groups became extremely popular and successful. In 1955, an inaugural annual conference saw the beginnings of the Nature Conservation Council of NSW established to act as an umbrella organisation for all conservation groups in NSW (Fox 2016; James 2013; Strom 2017). The Chief Guardian chaired the original meetings (1955), organised the venue, arranged for minute keeping and supplied the venue for the endorsed conference committee (executive committee) to follow-up actions (Strom 2017). Strom started to chair these executive meetings once he became Chief Guardian. It was not until the mid 1960s that the organisation became officially known as the Nature Conservation Council of NSW with a comprehensive constitution. The close relationship between the FPP and the Council, which included the Executive meeting in the FPP rooms, lasted until the FPP ceased operations. Needless to say, the section of the Fauna Protection Act 1948 (NSW) relating to the establishment and support of conservation groups was not repeated in the National Parks and Wildlife Act 1974 [NSW] (Strom 2017; Fox 2016).

Another group that was supported by the FPP was the National Parks Association of NSW. At its first conference in 1955, the nature conservation societies had agreed to strive for a national parks service. Two years later the National Parks Association of NSW was established as the main driver for a national park service in NSW (Strom 2017).

The NSW Ranger Patrol was another self-organised conservation protection group (Strom 2017). It seems to have been active in the early 1950s according to newspaper articles available on Trove, for example (1954). The FFP encouraged ex-officio and honorary rangers (Strom 2017). The Rangers' League of NSW established a special Field Unit to assist with education and enforcement. Recruiting, informing and educating *ex-officio* and honorary rangers was essential given that until 1960 only one ranger was employed. Information appeared in the Education Gazette and the Teachers Handbook

but the duties of an honorary ranger were not published until 1962. Few field officers or lands inspectors became rangers. In addition, Strom noted, “There is no doubt that there were many very helpful honorary rangers, exceeded unfortunately, by many who were quite incompetent" (Strom 2017, Ch. 7, para. 17). There was a great need for ranger education. The Bulletin for Rangers was first produced in 1952. Initially the Bulletin consisted of three or four pages with a print run of 2,500 (Strom 2017). In 1955, 7,000 copies of the Ranger Bulletin went to teachers and wildlife conservation societies (Fox 2016). In addition to education, the FPP started to carefully vet potential rangers and inform them about legislation, available literature and what was expected before they took on the role. This, together with close liaison with permanent staff, proved effective in ensuring tremendously effective honorary and ex-officio rangers (Strom 2017).

Publication Development

The Bulletin was replaced by the *Wildlife Service* journal in 1959 which had an agenda to maintain ranger interest, garner support from community members, give a voice to the work of the FPP, and inform about fauna protection. A journal had been mooted by the publications subcommittee of the Panel in 1953 but it took a long time to come to fruition (Strom 2017). The Government Printing Service provided 20,000 copies per quarter with the FPP insignia and posted copies to the supplied mailing list at no cost. They also gave great assistance in the printing of various coloured posters and publications over the life of the FPP. One such publication was the *Fauna Protection Panel Annual Report*, which proved an effective education document. Some printing was paid for, but the significant amount of free printing assisted greatly in education and freeing up monies for other Panel ventures. In the end (1967), up to 60,000 copies of *Wildlife Service* were printed with some issues up to 64 pages. It had a broad distribution, from schools to rangers and other relevant societies.

Further Panel Progress

When Strom became the Chief Guardian in 1958 his budget was minuscule. He requested £8,000 but the parliamentary budget provided just £200 (Strom 2017). However, further support and balance on the Panel had come with the replacement of Hallstrom in 1957 by a quick succession of CSIRO Wildlife Division personnel—Dr Robert Carrick who was replaced by Francis Ratcliffe, who was replaced by Dr Harry Firth who remained on the

Panel until the end. The CSIRO personnel provided much needed practical scientific, professional support and guidance. Dr John Evans replaced Kinghorn, as the Australian Museum FPP representative, continuing to provide great reference and advice (Strom 2017). In 1958 Tom Moppett, a conservationist, filled Strom's Panel position. Roy Lucas took the Department of Conservation position and provided wide administration knowledge. Another Panel replacement was a grazier who was an effective conduit with the Western District. Simultaneously, the Panel temporarily halted requests for scientific staff and instead called for much needed field officers and wardens/rangers. They wanted to get on with inspections and plans for faunal reserves and education (Fox 2016). Wardens/rangers were situated and worked on their reserves and field officers dealt with other matters regarding fauna (Strom 2017). In 1962, there were three field officers and eight inspection districts in addition to the metropolitan district. When Tom Moppett became Deputy Chair in 1964 there were still two vacancies, one being the Linnaean Society Panel position originally held by Troughton, and the other the grazier position. While the grazier position was filled in September 1964, the conservation position remained vacant until March 1966.

In 1964 an amendment to the Fauna Protection Act 1948 (NSW) enabled the establishment of wildlife and game refugees on land "other" than that owned by the Crown. This allowed for the encouragement of landowners to retain valuable natural bushland or wetland. The amendment also increased the Panel membership, allowing a member from the Western Lands Commission, a member of the Police force, nominated by the Premier, and a member of the CSIRO (Strom 2017). The two conservation positions (Linnaean and Firth's) were filled in March 1966 by Professor Brereton from the University of New England and Dr Carolin, a botanist, both committed academic conservationists. There were other changes of departmental personnel on the Panel but the most significant was Howard Stanley as the new representative of the Department of Lands in July 1965.

Education and the Fauna Protection Panel

> *It was going to take many years of hard talking to lift the dead hand of bureaucratic indifference to "public education" motivated by an enlightened understanding of wildlife conservation. What was not realized was that without sympathy in the electorate, the purpose of the Fauna Protection Panel would be forgotten by Government.*
>
> (Strom 2017, Ch. 3, para. 34)

In order to educate about the FPP and their work, the FPP tried to get conservation education resources disseminated throughout the NSW public school system, but without success. The Department of Education's attitude was that they had nature study in the primary curriculum and geography in secondary and that was sufficient (Fox 2016).

> *In fact, as a young teacher imbued with a passion to do exactly as I have suggested to be necessary, I was well aware that the administration of education did not approve of teachers encouraging those moral values in pupils likely to be somewhat at odds with the establishment.*
>
> (Strom 2017, Ch. 7, para. 10)

The first FPP formal education efforts involved targeting school children with art and essay prizes for conservation themed work. This was disbanded after dismal results in 1956 (Fox 2016; Strom 2017).

> *No one on the Panel was brave enough at that time, to suggest the provision of resource material and practical guidance for teachers, which might stimulate interest and develop skills leading to the production of teaching programmes based on existing curriculums and aimed at establishing an awareness of the conservation and management of resources. Most members of the Panel would not have thought in such terms and those that did, soon realized it was far beyond the resources of the one-man wildlife service.*
>
> (Strom 2017, Ch. 7, para. 6)

Strom saw a double standard with schooling: "It has seen fit to expect children to accept the preservation ethic whilst they are children but to reject the childhood concepts with the advent of 'maturity'" (Strom 2017, Ch. 7, para. 6). He saw all formal education as dominated by the basics and public examinations. "My experience with formal education is that it is beset with a continuing stress on the acquisition of 'basics' and the ability to score well in public examinations", (Strom 2017, Ch. 4, para. 6). Strom went so far as to say that the "Education Department for years used the Gould League of Bird Lovers and later, the Junior Tree Wardens as a smokescreen for the lack of purposeful programs in conservation education" (Strom 2017, Ch. 7, para. 7).

In regard to education, the FPP gave up trying to gain access to schools as without teacher interest it was difficult to gain any traction. The Panel requested the Department of Education give "greater emphasis" to fauna protection but was informed that they had already included fauna protection and nothing more would be possible (Strom 2017). Following further pressure on the Department of Education Panel representative regarding the possibility of conservation advisors within the school system, it was suggested Strom was wasting his time (Fox 2016).

Some areas of public education had much greater success, for example, the education of teachers which was viewed as showing more promise than trying to educate students directly. Strom believed that an understanding of the natural sciences and an opportunity to experience nature in the field would instil a conviction for wildlife conservation (Strom 2017). Strom's philosophy was one of conservation and sustainable human habitat—through understanding, valuing and thus encouraging care (Fox 2016).

Educational conservation material was published to educate the public about conservation. A Caloola Club journal entitled *Yarrawonda*, covered nature conservation issues with an emphasis on knowledge building during field trips/work. Some of the tutorials were subsequently included in a book on Australian ecology used by first year biology students at the University of NSW. These were also published by the FPP as *A Background to Nature Conservation: Some Processes Which Help to Build and Destroy Natural Habitats* (Fox 2016, Ch 5, para. 53), over 40,000 copies of which were distributed (Fox 2016). The seven chapters were "Ecology as an Introduction", "From the Rocks Came the Soils", "Plants, Like Humans, Live in Communities", "Plants Invade and Colonise", The Interdependence of Plant and Animals", "When the Plant Communities Are Upset", and "Some Conclusions and Actions For Future Guidance". These chapter titles suggest that, through understanding ecosystems, there would be a desire to act to preserve them—the defining element of Environmental Education, an action component. It must be remembered that the emphasis was on the issues of the times and these became broader and more complex from the 1960s onward.

The 1960s and Progressive Achievement

In the mid 1960s conservation issues were part of the everyday discourse. Some of the concerns of the day included pollution/damage from rutile and beach sand mining, pine plantations replacing native forest, kangaroo numbers decreasing while still damaging farming land, draining of coastal wetlands for flood mitigation, loss of mangroves, toxins starting to enter the human environment, declining koalas numbers, hazard reduction burning and bird smuggling (Fox 2016).

After years of complex and often frustrating negotiations with various NSW government departments the FPP had accomplished a great deal by 1966. They had achieved increased education within the community at a local level. Fifty-two nature reserves had been established with nearly 150 more proposed. Approximately 146 wildlife refuges were proclaimed covering 2,167,321 acres. The FPP assisted in the establishment and support of over 50 local faunal protection societies, flora and fauna protection societies, and conservation societies. They helped galvanise the conservation movement with the Nature Conservation Council of NSW and the National Parks Association of NSW set up as umbrella organisations. They produced an abundance of educational publications with the assistance of the government printer. They made inroads into the management of fauna, particularly kangaroos, and faunal research. There were 16 officers taking wildlife conservation into the community and eight administration staff backing them up.

With Fox as Education Officer, Wildlife Service staff were reorganised in 1965 into Education and Publicity, Reserves, Wildlife Management, and Law Enforcement rather than by districts. There were information centres at Barron Grounds and Hallstrom Nature Reserves, and warden/rangers with a priority to educate the public at other reserves (Strom 2017). The FPP contributed to a climate for the establishment of the NSW NPWS. They contributed to a biennial Interstate Fauna Authorities Conference between 1948 and 1968 which assisted in educating and coordinating across the states and territories regarding conservation (Strom 2017). So, over the years, the FPP had become an effective, formidable body with a strong people and media powerbase fuelled by the wise conduct of Strom (Fox 2016). Respect was gained from the environment movement, the rural community, the scientific community and some political quarters, primarily in the Country Party.

> *Allen Strom was an effective and inspiring "conductor" of harmonious achievement played frequently under extreme interdepartmental antagonism.*
>
> (Fox 2016, Ch. 11, para. 99)

The Fauna Protection Act 1948 (NSW) provided for control of the destruction of native animals but practices morphed into management to ensure the "preservation of species." By the mid 1960s the term "conservation" was being used in newspaper reports (Strom 2017), signalling the growing understanding and discourse moving from the separation of specific species to a more holistic view of ecosystems. This had been a change well accepted in the FPP—in its program, publicity and dealings with the public. Such was the success of the FPP that the administration of the Wild Flowers and Native Plants Protection Act 1927 (NSW) was moved to the jurisdiction of the Panel in September 1966. The draft Wildlife Conservation Bill (NSW) which the FPP had instigated in the 1960s defined wildlife as "biotic communities and the environments that produce these communities" (Strom 2017, Ch. 1, para. 26)—a leap forward.

As an example of the FPP's success, the 1966 Annual Report demonstrated substantial achievement in the establishment and management of nature and wildlife reserves, education and publicity programs, and wildlife management within a budget of $40,000. Support for this success was achieved through the network which included the NSW government printing service, the NSW Education Department, the National Herbarium of NSW, the Royal Botanic Garden and the CSIRO Wildlife Research Division (Fox 2016).

The Demise of the Fauna Protection Panel

Growing Rifts

As time went on, rifts between the Department of Lands and the FPP became more pronounced. For example, in 1958, Strom, as Chief Guardian of Fauna, was invited by the Australian Academy of Science, to sit on a NSW Sub-Committee to advise on several aspects of parks and reserves. Charles Elphinstone, at the time the Panel member for the Department of Lands, strongly objected as he felt the position should go to the Lands "Parks and Miscellaneous" Branch where "Park Trust" management resided along with

racecourses, cemeteries, and showgrounds as a minor operation. The Panel stood by the Chief Guardian of Fauna (Strom 2017).

Another issue the Panel, and Strom via his membership on the Bouddi National Park Trust, engaged with was rutile and sand mining (Fox 2016). The Panel requested the establishment of an Inter-Departmental Committee to examine the impact of mining. While the Department of Mines ignored the request, public awareness and political pressure eventually translated into a change in government policy. Accordingly, the Sims Committee was set up in 1965 to resolve conflict between sand miners and conservationists on the North Coast—and it brought down its report in 1968 (Hutton and Connors 1999). The Committee had been called for by Tom Lewis, the Minister for Lands, and was within the State Planning Authority. It was chaired by Sims, a junior officer and urban planner who had at the time completed a detailed study of urban development on the North Coast (Fox 2016). In progressing the study, Sims was assisted by two field officers, one from the NSW Herbarium and one from the Panel. The process was restricted in that it could not recommend suitable areas for national parks or reserves.

The power wielded by the mining companies was great. The Minister for the Departments of Lands and Mines decided which lands would be available for reserve and he chose only those lands not affected by mining leases. Only 96 of the proposed 640 square kilometres were set aside for national parks and only 19 of these were exempt from sandmining (Hutton and Connors 1999). This finding galvanised the conservation movement into action. Whilst the tussle between the Mines and Lands Departments and conservationists continued, this line of narrative will not be continued here. It does, however, demonstrate how Strom and the Panel finally faced serious adversaries.

Advocacy for National Park Legislation

While nature reserves had some security as an Act of Parliament was required to repeal them, the national parks, sanctuaries and other reserves administered by the Parks and Reserves Division of the Department of Lands did not, with the exception of the Royal National Park, Kosciusko State Park and Ku-ring-gai Chase National Park, which had been legislated in 1879, 1944 and 1961 (dedication 1894) respectively. The Parks and Reserves Division of the Department of Lands was also seriously under-resourced. Yet

support for the protection of species increased as a result of the promotion of national parks for recreational purposes (Hutton and Connors 1999, 35).

The National Parks and Primitive Areas Council had proposed a national park authority to the McKell government in the 1940s (National Parks, Australia: New South Wales 1979, 94). Along with the Wildlife Preservation Society of Australia, the NSW Federation of Bushwalkers Clubs and the Parks and Playgrounds Movement of NSW, the Council had been continually petitioning the Government to establish a national parks service since the Second World War. Some of the members were enthusiastic in wishing to emulate the parks set up in North America. These ideas coalesced and gained traction in 1955 when a detailed statement for a national parks service, separate from the Department of Lands, was prepared and widely distributed (Fox 2016). The establishment of a national parks service and the training of rangers was recommended to Parliament in a private members bill by Lewis, who in 1960 was a relatively new member of the opposition. This got the topic onto the agenda and into the media. While the bill failed, continual agitation by Lewis and other national parks advocates, particularly the National Parks Association of NSW, kept national parks on the government and bureaucratic agenda.

A consequence of the national park discourse was that the Department of Lands appointed Stanley to the position of Administrator of a Parks and Reserves Division in the Department of Lands. Indeed, he had been sent to gain knowledge of the American national parks, and other systems, and attend the first World Conference on National Parks in Seattle in 1962, a conference organised by the International Union for Conservation of Nature and Natural Resources (Adams 1962; Fox 2016). Additionally, then Labor Premier, Robert Heffron, agreed to a national park authority in the run up to the 1962 election.

A Special Executive Committee was established within the NSW Labor Party to investigate the issue of national parks. They had consulted Strom who was encouraged to draft a national parks bill to establish an appropriate authority (Fox 2016). A detailed report from the Special Executive Committee, which relied heavily on Strom's input, outlined six reserve types ranging from high-density recreation areas to primitive wilderness. The report also sought to ensure there were clear protections from mining and development. The report encouraged an alliance with the FPP and indeed included a note

of thanks to Strom from the Assistant General Secretary of the Labor Party thanking him for the material that would educate Labor delegates. These events would not have been seen as apolitical. However, no progress was made before the next election in 1965 when the Labor Party lost power and Lewis became the new Government's Minister for the Departments of Lands and Mines.

Waning of Political Favour

In 1966 Strom and his team had been working on kangaroo management and were at the stage where a statement could be made regarding kangaroo meat and skin as a renewable resource related to wildlife conservation (Strom 2017). Strom and his team asserted that there were alternative or adjunct farming possibilities. Whilst also having the established Parks Branch within his Department, the Minister for Lands and Mines, who had been made responsible for the staff of the FPP from 1 August 1966, showed interest in the well supported (scientifically and socially) initial process for a controlled kangaroo meat market. However, Stanley enticed Strom's main kangaroo project staff member into his service with a higher salary. It is clear from Strom's account of the events that took place around the kangaroo management submission that he was being sidelined. For example, his submission was handled by someone with no experience, and Lewis went on to state that any further work would need to be completed with Strom's remaining staff. When Strom got Panel permission to request another officer, Lewis was too busy to discuss the issue (Strom 2017).

In the research for his biography of Strom, Fox accessed Strom's correspondence and Ministerial briefings and found them annotated derogatorily, "with destructive and mostly erroneous criticism" by Stanley, at the time, the Department of Lands representative. Stanley was a supporter of the American national park system and a contender for the position of Director of any potential NSW national park system. (Fox 2016). The under-mining that occurred may well have played a part in the deteriorating relationship between Strom and Lewis, a relationship which had started out quite amicably with Strom educating an enthusiastic, newly elected Lewis in the early 1960s as to what was needed in an Australian reserve system. Later, Lewis began to regard Strom as a fanatic (Hutton and Connors 1999). Further, Lewis did not allow the final "Fauna Protection Panel Annual Report" for 1966-67, an indication of growth and success, to be printed and tabled before Parliament as previous reports had been (Fox 2016; Strom 2017).

Bureaucrats and Minister Lewis subsequently requested that the Chief Guardian keep his briefing notes to a page in length. However, Eric Willis, the Chief Secretary and Strom's old superior who had a background in geography, understood their value and urged Strom to continue with his detailed briefing notes. Lewis and Willis were political rivals (Fox 2016). Indeed, Willis had been surprised when the FPP was taken away from his portfolio.

It became known that the National Parks Bill was to be redrafted as the National Parks and Wildlife Bill. Three assistant directors—one each for administration, parks, and wildlife—were to report to an overall director. The Chief Guardian of Fauna was to become a public servant—a downgrade from a statutory position. There was no consultation with the FPP personnel in the preparation of the new bill (Fox 2016).

The movement of the FPP out of the Chief Secretary's Department and into the Department of Lands was seen to explain the absence of nature reserve approvals from the Department. The number of proposals had been increasing due to a more streamlined ecosystem identification & submission processing method and more staff to effect change. There were nearly 150 reserve proposals at the time of the takeover—many with proposed management plans (Fox 2016).

Thus, there was no opportunity for the Panel to discuss the integration of the old Wildlife Act and its accumulated scientific and democratic input with successful programs in animal management that had been developed over time. This was all to be placed in the hands of administrators with less knowledge and experience. Strom baulked at changes to the kangaroo management plan but was told his unwillingness to cooperate would be reported to the Under Secretary and Minister if he continued. When the FPP background briefing notes on the Bill garnered no response from the Department of Lands, Strom made inquiries and was informed by the Undersecretary that the Department was being lumbered with a portfolio it had no interest in. The papers were sitting on junior clerks' desks awaiting responses which the Undersecretary suggested Strom's staff should do—public staff doing political work (Fox 2016).

It was believed Strom was kept uninformed due to his statutory position status. Politically and bureaucratically he could have been seen as a threat, especially given his influence within many networks. Fox suggested numerous reasons for Strom's sidelining by the conservation bureaucracy:

- the inertia of the Department of Lands in conservation matters,
- the contrasting needs of conservation that were being advanced by Strom,
- personal and political egos competing for dominance within the emerging environmental bureaucracies,
- fear of Strom's well-developed profile,
- personal and political conflict within the leading governance,
- an incorrect notion that Strom was a Labor man,
- Lewis' desire to bring a national parks service to fruition,
- the smouldering of endemic conservation thought by an American system brought to bear not by the United States but by Australian bureaucrats lacking local understanding but with great faith in the American system, and
- the appointment of a director from the American system without the appropriate indigenous knowledge and skill required (Fox 2016).

National Parks and Wildlife Bill and Political Argy-bargy

The National Parks and Wildlife Bill was put to Parliament in December 1966 but collapsed in the upper house which had an opposition majority.

> *If it had not been for the caprice of a few Labor Members in the Legislative Council, the whole structure built up by the Fauna Protection Panel over the previous, almost twenty years, would have been thrown into the melting pot to be stirred up by the gathering of bureaucrats and an unsympathetic Minister of the Crown, with an unknown national parks service.*
>
> (Strom 2017, Ch. 16, para. 89)

The acceptance of the need for national parks and nature conservation worldwide played a substantial part in support for new legislation, as did the need for a unified coordination of personnel in ensuring that established and future proposals for national parks worked in harmony in sampling all possible ecosystems (National Parks, Australia: New South

Wales 1979, 95). Between December 1966 and the following October, when the Bill was passed, various conservation organisations including the National Parks Association of NSW, the National Trust, and the Nature Conservation Council of NSW provided comment encouraging amendments.

The December edition of *Wildlife Service* was partly motivated by the growing antagonism between those who wanted reserves for conservation and those who wanted them for recreation. The journal set out to illustrate that both conservation and recreation could be served as it was in the Warrumbungles National Park which included a Wildlife Refuge. Strom, who was on the Management Trust Committee, had guided this venture (Fox 2016).

Having access to both public and government information in his position as the Panel Education Field Officer and as a state councillor on the National Parks Association of NSW, Fox was alarmed at the lack of plans for some of the proposed national parks and thus the possibility of boundary disputes with vested interests. The National Parks Association of NSW produced a journal in January 1967 outlining the weaknesses of the Bill which necessitated redrafting. A National Parks Association of NSW meeting was also called to discuss the issue (Fox 2016).

Forty proposed amendments were received after the bill was rejected in December 1966. The most important for conservationists was that the new authority was to be independent of the Department of Lands (Strom 2017). This was the only amendment that was accepted. The proposed changes caused acrimony within the conservation movement. Some did not want to put at risk the opportunity for national parks legislation. Some considered parks for recreation was the goal. Others fought for amendments such as for a Nature Conservation Commission with a deputy commissioner in charge of wildlife conservation administration, another in charge of national parks administration, and both positions overseen by a chief commissioner (Fox 2016; Strom 2017).

Legislation finally passed in October 1967. The NSW NPWS had 40 members from the FPP and Parks and Reserves Branch of the Department of Lands together with the 160 people employed through the Trusts who had oversight of the existing national parks. At the time of establishment there were 52 nature reserves, 12 national parks, seven state parks, and six historic sites with an area of 860,760ha (National Parks, Australia: New

South Wales 1979, 95). The 1967 Act repealed the FPP and office of the Chief Guardian of Fauna and amended the Fauna Protection Act 1948 (NSW) and the Wild Flowers and Native Plants Protection Act 1927 (NSW). It vested all the powers, duties and responsibilities contained within these Acts to the Director, NSW NPWS[10] (NSW Government: State Archives and Records n.d. c)

The NSW NPWS and a Provocative Presentation: A Catalyst for Exodus

The overall Director of the NSW NPWS was to be Sam Weems, an American with a long history in one US national park. According to Fox, he was, however, inexperienced in the NSW park/reserve system and the overall US ecosystems and—unable to identify parks by their ecological, landscape and historical context. Weems did not understand nor support the reserve system that Strom and the FPP had set up—a system that had been hailed by scientific and land administrators in Australia and worldwide (Fox 2016).

Strom had asked to be returned to the Department of Education on a number of occasions but learned from confidantes within the Department of Public Service and the Education Department that his request had not been passed on (Strom 2017), so he had a conference with the Public Service Board in late 1967. “I had no intention of being party to the annihilation of the wildlife service, once the National Parks and Wildlife Act became law." (Strom 2017, Ch. 16, para. 17).

Then, in a conference with Weems and a Public Service Board Inspector in February 1968, Strom found that the Director-General of Education, Harold Wyndham, was happy for him to return to the Department of Education as the Advisor in Conservation (Strom 2017). Strom commented, “Well, I know [sic] Wyndham because I’d been in the Teachers College and I’d met him on a number of occasions. He’d actually been, as a matter of fact, to a couple of functions at the Caloola Club.”[11] Processing this move, however, took time.

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[10] The National Parks and Wildlife Act 1974 (NSW) altered the 1967 Act by consolidating and amending the law relating to the establishment, preservation and management of national parks, historic sites and Aboriginal Sites (NSW Government: State Archives & Records n.d. c).

[11] A. Strom, audio interview by D. Tribe. 1991.

Fox had been requested to speak at the Annual Meeting of the Wildlife Preservation Society of Australia on 27 February 1968, but due to illness Strom was an enthusiastic proxy. While there was an embargo on public statements which were not vetted by the Minister for Lands, this talk had been booked well in advance, allowing Strom to bypass protocol—his speech was not vetted (Fox 2016). Strom had given a copy to a *Daily Telegraph* reporter as earlier requested. The next day his most controversial views about the NSW NPWS were revealed in print. They included:

- that the NSW NPWS favoured national parks over nature conservation,
- that nature conservation would be setback catastrophically,
- that it was not too late to save the wildlife program via a restructure of the Service,
- that the Service needed independence from Ministerial dominance, and
- that the Service had the potential to become, "another public service agency handing down agreeable picnic-style usage of parks and law-interpreted protection of wildlife." (Strom 2017, Ch. 12, para. 26).

Strom had inverted the advice of Gerald Kingsmill, who had once been the Under Secretary for the Chief Secretary, who said, "be expressive as you wish but never get it into print and avoid being quoted." Strom got press coverage knowing that it would most likely hasten the desired-for end to his association with the NSW NPWS (Fox 2016, Ch.7, para. 46).

On February 28 Strom was instructed to take immediate leave before commencing work at the Department of Education as Advisor in Conservation (Fox 2016).

> *We must be ever grateful for pioneers like Allen Strom who did, indeed, "rock the boat!" In fact he rocked it too hard, and was overlooked as the founding Director of the fledgling National Parks & Wildlife Service. But, fortunately, the somewhat embarrassed Government of the day sought to "reward" him in some way, and offered him the unique position of Advisor in Conservation within the Dept of Education. Little did they realise that Allen would then beaver away over the following decade to get things moving regarding getting kids and teachers out of the classroom into the REAL environment (which is ever outside the classroom window!). And that started the ball rolling, because what Allen was doing became contagious.*
>
> (K. McDonald, email December 19, 2016)

Conclusion

This chapter has chronicled the establishment and expiration of the FPP, and the significant progress in conservation instigated and supported by it. Furthermore, this chapter foregrounds the importance of education for both Panel members, and the general public, in progressing conservation and the evident groundswell of support for conservation. Moreover, some of the intransigence, vested interests, and egos of bureaucracy and politics have been recounted. The advancement of nature study, and education that preceded environmental education, has been outlined as a context for what is to come. The extensive networks within and beyond the environmental movement have continued developing in yet more intrinsic ways. Strom has been introduced as a key character in the development of conservation in NSW—there were many, but for our narrative, Strom is key. The chapter closes with a fracture within environmentalism between the ecocentrism of conserving the unique diversity of NSW's ecosystems and a more anthropocentric conserving of land for general recreational purposes, and some silencing of many years of knowledge and endemic expertise in the area of conservation within the state of NSW. We close the chapter with Strom hastily facing a change in trajectory into the NSW Department of Education—the seeds sown for the establishment and funding of the first field studies centre, and the initiation of plans for many of the others.

There is evidence in this chapter of a move from loss of species and environment—the disconnect, to a systems approach towards conservation. In addition, a distinction between ecocentric and anthropocentric viewpoints can be drawn. Some of the themes running through this history include the bottom-up/top-down effect on governance and bureaucracy, the effect of collegiality/networking/collaboration, the political interconnectedness, the placating of egos within bureaucracy, and the waxing and waning of political favour. Yet there are also familiar themes that echo through the pages regarding education. Nature study, conservation education, environmental education and education for sustainability have never been perceived as important in education—at least not in relation to the rest of the curriculum. Additionally, only teachers who had/have an interest in the area who were/are competent or willing to teach these topics taught/teach

it. Many teachers did not learn/have not learnt the subject within their education/teacher education and so do not feel confident to teach it.

This chapter has set the scene for the establishment and development of the NSW field studies centres within the NSW Department of Education. These centres later became the NSW Environmental Education Centres. A distinction between field studies, conservation education, and environmental education will be developed in the next chapter, which encompasses the golden era of the development of environmentalism, indeed democratic governance for and by the people, which preceded neoliberalism.

CHAPTER 4: INITIAL ESTABLISHMENT OF FIELD STUDIES CENTRES

Previous context chapters describe the long history of the silencing of an ecocentric/sustainable society within Western economic rationalism. These chapters also highlight the holistic/nonlinear nature of environmentalism. Consequently, it seemed appropriate to utilise a "global to local" breadth, and a wide historical lens, in developing this study to ensure a good overall understanding of centre establishment and development. The growth of Environmental Education (EE)/Education for Sustainability (EfS) and the international, national and state events that have influenced its evolution are integral to this narrative. There is an intention to discuss only those events with major impacts on EE in Australia and thus field studies centres (FSC)/environmental education centres (EEC). Additionally, there is a resolve not to dwell too long on the development of contending concepts; there is an attempt to address the most crucial. In the next four chapters, FSCs in NSW and their establishment, development, function and change over time is outlined. Note that there is a certain amount of "toing and froing" in time given the systematic combing through global, national and state events. The development of whole representations of situations or events was considered more appropriate than chronologically correct snippets.

Evident thus far in this narrative of conservation in Australia is an individual and collective recognition of developing and cumulative problems regarding some of the effects of overpopulation and industrialisation on a not so cornucopian world. Such recognition was happening around the world. Rachel Carson (Carson 1962) and those in the Club of Rome were prominent in raising the alarm about environmental degradation and limitation (Meadows et al. 1972). Furthermore, major global conferences and projects started in the 1970s to set the agenda for sustaining a healthy environment. They affected the development of environmental education, informing and compelling governments to change practices. Thus, they influenced the development of FSC.

The United Nations Conference on the Human Environment in 1972 saw education and training as vital for environmental policies (A. Gough 1997). EE, both formal and informal,

became one of the major vehicles for remedying environmental problems at both the Belgrade and Tbilisi Conferences (United Nations Educational, Scientific and Cultural Organisation—United Nations Environment Program [UNESCO—UNEP] International Workshop on Environmental Education, 1975 & UNESCO-UNEP Intergovernmental Conference on Environmental Education, 1977 respectively). The goal of the International Workshop was to develop a framework and direction to further EE via an international program—UNESCO-UNEP. The Belgrade Charter stressed action, "working individually and collectively toward solutions of current problems and prevention of new ones" with abilities of "awareness, knowledge, attitudes, skills, evaluation ability and participation" expanded in the Charter objectives (A. Gough 1997, 19).

The objective of the Intergovernmental Conference (1977) was to obtain commitment from various countries, through administrative and government decision makers at a very high level, and to establish EE as a priority area of national policy (Fensham quoted in A. Gough 1997, 18). The Belgrade Charter was modified at Tbilisi. For example, the objectives concerning evaluation ability and participation were deleted, there were minor changes to the wording of the attitudes and skills objective statements, and a significant change was made in the knowledge objective with the removal of humanity's responsibility for the crisis (A. Gough 1997, 44). Peter Fensham recalled the omission of the evaluation objective as being political. Apparently, "it was unlikely that the participants at such a meeting would endorse an objective that had as its aim a potential critique of government programs" (Fensham cited in Greenall 1981a, 80).

Defining Environmental Education

Multiple definitions of EE developed essentially simultaneously around the Western world in the late 1960s and early 1970s. One of the early definitions came from the first issue of the *Journal of Environmental Education* in 1969. Professor Bill Stapp and his colleagues had developed the definition at the University of Michigan (Stapp et al. 1969, 31). Stapp, Dean Bennett, William Bryan, Jerome Fulton, Jean MacGregor, Paul Nowak, James Swan, Robert Wall and Spenser Havlick defined EE as that which is aimed at producing a citizenry that is

knowledgeable about the biophysical environment and its associated problems, aware of how to assist in solving environmental problems, and motivated to work toward solutions. Incidentally, the Stapps, both Bill and Gloria, came to play a significant role in developing EE in Australia and around the world (Fox 2016). He was appointed to direct the International Environmental Education Project for UNESCO/UNEP in 1974 (Fensham 1987, 1990) and as part of the process visited Australia where he inspired people to join the EE movement and advocated for hands-on experience of environmental issues and problems (McDonald 2015).

A widely disseminated definition of EE emanated from the International Union for the Conservation of Nature and Natural Resources (IUCN) at an international workshop relating to EE in the school curriculum in the US (1970).

> *Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulating of a code of behaviour about issues concerning environmental quality.*
>
> (IUCN quoted in A. Gough 1997, 45)

This definition was utilised by the Curriculum Development Centre (CDC) in their Interim Report in 1975, Martin in his review of the objectives of EE in 1975, and Linke in his analysis of EE in Australia in 1980 (A. Gough 1997). This is by no means an exhaustive list of definitions but rather a glimpse to attain an understanding of the shifts in agenda.

Another critical moment for EE was at the "Education and the Environmental Crisis Conference" in 1970. Beverley O'Neill stated that EE should stimulate a "sense of individual responsibility" for the total environment (physical and aesthetic) and "provide a challenge for wise action" based on knowledge of ecological principles, an understanding of the human impact, and an awareness of inherent problems relating to the environment (O'Neill 1970, 38).

In an effort to clarify some of the ambiguity that surrounded the emerging field of EE, Lucas's doctoral thesis in 1972 titled "Environment and Environmental Education: Conceptual Issues and Curriculum Implications" set up a useful model, identifying three

independent, primary classes of EE—"about," "in," and "for" the environment. This conceptualisation of EE was presented at the 1975 Australian National Commission for UNESCO Seminar on "Education and the Human Environment," chaired by Linke (Greenall 1980; Fensham 2015). This terminology has proved enduring over the decades and has been embedded into a great deal of the literature at a state, national and international level.

Wheeler wrote in 1975 that environmental education could be mistaken for "ecological conservation education" and that a mass of overlapping approaches could dissipate its effect. He stated that this "gives rise to a dilemma of identity … that EE was being taught partially and incoherently, with virtually no overall thought or organisation" (Wheeler 1975, 18). He elaborates…

> *The objectives for environmental education vary according to the values and interests held by those advocating the necessity to teach about the environment. Those who advocate holding conservationists' ideals want a form of environmental education that sets its objectives firmly on the promulgation of the wise use of natural resources. The educationists who urge the implementation of environmental education curricula in schools and colleges vary in their objectives according to their respective emphasis upon environment as a concept; or on education as a process stimulated or hindered by environmental experiences. Much discussion has also taken place on the definition of "environment'. Is the "natural environment," or the "built environment" the one to be considered? Does the term "human environment" cover the total environmental setting for human beings including natural and social phenomena?*
>
> (Wheeler 1975, 19)

These concerns, written with Britain in mind, echo much of the confusion about the establishment and development of EE as documented in conference presentations and journal articles both in NSW, Australia and globally. At the UNESCO seminar in 1975, Linke said that EE would have no academic currency or place in the curriculum until defined in a practical way that is accepted by teachers and education administrators (Linke 1977). EE is concerned with values, attitudes and social action in resolving environmental problems (Greenall 1987, 12). The degree of EE dissemination clear about the problem solving and critical thinking aspect of EE has varied throughout its history (A. Gough 1997).

Setting the Scene for Environmental Education

According to Strom (1987), the development of major community drive in environmentalism began in the 1950s and 1960s. People were after a better world after the First and Second World Wars. Car ownership was more common so people were able to leave the stresses of the urban environment and access the great outdoors without relying on public transport. Television joined radio and the print media in broadcasting conservation topics, and conversely consumerism. The environmental coverage started to make an impact with stories of environmental vandalism. Strom said people wanted something done about resource management and the "horrors of the urban living" (Strom 1987, 5). There was a global upsurge in awareness and interest in environmental issues and growing membership of the significant number of conservation groups nationally and in NSW, many formed with the support of the Fauna Protection Panel (FPP), which also expanded. Environmentalism flourished. Conversely, environmentalism and conservation were seen "as almost absurd and ridiculous" in Australia in the 1950s and 1960s (Webb 1998, 106). There is something of a derogatory perception of environmentalism within non-urban communities that it is urban, middle-class and intellectual (Fox 2016; Strom 2017). According to Webb, "left wing" people found it anti-working-class and thus unacceptable (Webb 1998, 106). The working class often accepted environmental impacts associated with industry or development simply because industry provided necessary jobs or, in the case of development, particularly in the early history, land (Bonyhady 2000, 9).

Economic growth had been expansive in the post war era with Australia's period of economic growth continuing through to the 1970s. However, the 1973-74 oil crisis led to a loss of confidence in the welfare state's ability to address social inequalities, due to the ensuing recession and unemployment (Hughes and Brock 2008).

Education, like the economy, was also expansive into the 1970s. The transformation of society through the welfare state, with education a major vehicle for change, continued through the late 1960s and early 1970s (Hughes and Brock 2008). Significant federal initiatives in education after the election of the Whitlam Government were:

- the Karmel Report (1973) which backed an educational devolution and community participation agenda,
- the Australian Commonwealth Schools Commission (1974 [subsumed into the Department of Employment Education and Training in 1987]) which established financial support and a climate of acceptance for devolution of schooling and curriculum development to school communities along with Piagetian cognitive principles, and
- the Curriculum Development Centre [NSW] (1975) which researched and resourced major curriculum development initiatives.

The School Commission saw 2000 grants under the Innovations Program between 1974 and 1977 although the amount allocated for curriculum development was modest (Hughes and Brock 2008). Resource dissemination monies were not available for CDC projects (Greenall 1987). However, there were 343 grants with some aspect of EE (Curriculum Development Centre 1978a), and the State Development Committee and Regional In-service Committees utilised significant Commonwealth funding in their mission: $2,660,000 from 1974-75 in NSW alone (Hughes and Brock 2008).

The Environmental Education Crisis Conference and Developments

At the 1970 conference "Education and the Environmental Crisis," Strom was appalled by the suggestions put forward concerning what might be adopted to educate the community, from cradle to grave. From Strom's reflection, it is assumed that most of the suggestions involved the same old existing approaches—nature study and conservation education. His 1987 deliberation elaborated,

> *Environmental education is not synonymous with nature study or natural history or ecology or even knowing what pollution is or does. Environmental education must first and foremost, make everyone of us aware that the human animal is but part of the great ecosystem which govern all ecosystems.*
>
> (Strom 1987, 7)

There were some interesting papers given, however. For example, Beverley O'Neill outlined the state of EE in Australia. According to O'Neill, there seemed little in the curriculum about the impact humans were having on the environment (O'Neill 1970). O'Neill's concluding remarks may be seen as prophetic,[12] and increasing in relevance given the rise in accountability:

> *Nevertheless, it is apparent that, at present, most of the environmental education in our schools is being given at the discretion of individual teachers. There are many teachers who are deeply concerned and aware of their responsibilities in this area, but, equally, there must be many who, for various reasons, do not feel this concern. They are not likely to notice that the syllabuses on which they base their lessons are deficient, let alone try to impart to their students the basis of environmental ethics. Even those teachers who are convinced of the need for environmental education must be affected by the pressure of examinations and the necessity to fulfill the prescribed syllabus requirements.*
>
> (O'Neill 1970, 46)

Importantly, Bill Stapp also presented at the Crisis conference. Stapp, an American professor of natural resources with a passion for environmental education, had a similar ethos to Strom. Stapp and Strom were believers in dissonance (Fox 2016),

> *The motivation for environmentalism must arise from encounters with environmental issues. The aim is to shock and disturb those who experience the encounters so that they are motivated to learn the answers, and then, come hell and high water, to have them to work to correct stupidity, ignorance and plain greed. Environmental education must enshrine that procedure if it is to be meaningful, and it must provide a continuing drive for that process to go on and on, long after the schoolroom is left behind.*
>
> (Strom 1987, 7)

[12] See Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3 by the Australian Education for Sustainability Alliance (2014) for evidence of the slow progress of the teaching population paying more than lip service to EE/EfS.

Strom also became acquainted with R.Piesse, the Director of the Australian Conservation Foundation, through his reaction to the conference. Together they wrote a special publication for the Foundation (Piesse and Strom 1970) investigating the possibility of FSCs for Australia and recommending a system similar to that in the United Kingdom (Fox 2016). These centres, run by the British Field Studies Council, were well established and were funded by fees and public subscription with indirect support from local education authorities (Morrison 1974). The Piesse and Strom document outlines the field in the United Kingdom, with a focus on England where the organisation was most extensive, but also covering centres in Canada and the US. It additionally outlined a couple of floor plans of established centres, sample budgets and staffing arrangements; summarised developments in Australia, drew on conservation initiatives and outlined possible criteria and responsibility. They recommended a Field Studies Council impelling state and federal funding and lands for a system of centres (Piesse and Strom 1970).

The scientific and community push for FSCs and other environmental initiatives was successful. It gained political recognition when the pre-federal election Labor Party platform included, "the establishment of field study centres in consultation with the Commonwealth and State Departments of Education and Australian Universities Commission" (Australian Labor Party 1971, 14). Other relevant proposals outlined in the platform, under the title "Conservation and Environment," included a central body to control and coordinate nature conservation activities and increased research funding for conservation studies across various programs. Additionally, under the heading "International Science", the Platform supported overseas exchanges for scientists and technologists through a scheme of post-doctoral and senior fellowships. To achieve these outcomes, they needed adequate science education, more science teachers with improved training, more graduates, both undergraduate and postgraduate, and the upholding of traditional freedoms for scientists. After Labor won the 1972 Federal election, the FSC platform was endorsed at the first National Conservation Study Conference, run by the Australian Conservation Foundation in 1973 (Morrison 1974).

In a 1974 critique of field studies in Australia, Morrison stated that it was too late to advocate a "common pattern of development" for FSCs, with some autonomous and some Department of Education centres already existing in all states, and considerable development in some

individual schools" (Morrison 1974, 59). While there were many different types of FSCs, Morrison was focused on places where school students participated in curricular, recreational and social activities. The paper states that it concentrates on the field studies aspect of EE or outdoor education not because it is the most important aspect, or to draw boundaries, but because the topic of EE is too vast to develop for a research paper (Morrison 1974, 49).

While Morrison's study explored field studies in Australia, the circumstances of EE in Australia were investigated through a national survey conducted during 1973-74 by Russell Linke. Funded by the Australian Research and Development Committee, the survey was based on an earlier developmental study sponsored by the Australian Conservation Foundation (Linke 1980). Linke outlines the Australian Conservation Foundation's comprehensive conservation directory (1973) which included organisations establishing formal relations with various state departments of education to facilitate EE within primary and secondary schools (Linke 1980, 42-43). These community resources were wide ranging and included botanical and zoological gardens, museums and various wildlife sanctuaries. They did not, however, have the resources to coordinate a substantial and steady educational impact.

With the popularity of outdoor education, schools and community groups faced excessive waiting times in accessing available sites. Other issues Linke noted were:

- a lack of time to make arrangements,
- a lack of confidence in knowledge about outdoor studies (in-service courses had been conducted on plant and animal identification and basic ecology),
- a lack of background localised knowledge of many of the popular field study areas, and
- a lack of interest on the part of teachers (surmised from the number of teachers conducting environmental education) [Linke 1980, 113-114].

In some states metropolitan schools, or a cluster of schools, were acquiring their own rural outdoor study areas as a result of the closure of some remote single teacher schools. Conversion of these schools to FSCs was viewed as a remedy for the short supply of sites

experienced at the time. Linke's study noted the lack of coordination with individual schools and teachers initiating their own experimental programs. A more systematic and organised approach was needed to achieve a substantial and consistent educational impact (Linke 1980).

The Curriculum Development Centre: Advancement at a National Level

Linke's study gained further purpose when he became the first CDC, Environmental Education Committee Chairperson in 1974. The Federal Government established the CDC in 1973 to work closely with state and territory school systems, teacher educators, researchers and other groups associated with education, such as professional bodies. They researched curriculum needs and developed priorities for action, and developed school curriculum and associated educational resources (Austlit 2012). The CDC had prioritised environmental education in 1974 when it was an Interim Council, and then again in 1977 when it became a legitimate Council [the Centre was legislated in 1975] (Curriculum Development Centre 1978c; Greenall 1981a).

The original CDC EE Study Committee, established by Education Minister Beazley in 1974, had assessed the needs of EE and submitted a proposal for development and support. (Greenall and Womersley 1977). Teacher education proved the greatest need: awareness and understanding of EE, change in attitude toward EE, and development of skills and increased communication and exchange of ideas relating to EE, all needed significant input (Greenall 1987). Findings were that Australia was very much in the vanguard of EE activity on the world stage but, as Linke had found, "despite this multifarious activity, much of the Australian endeavour is unco-ordinated, isolated and of uncertain effectiveness" (Curriculum Development Centre 1978c, 10).

The resulting action plan included support structures in the form of a national information centre, local information resources, FSCs, regional EE consultants, and an evaluation and materials development team to focus on teachers, which would ultimately benefit students (Greenall 1981b; Greenall and Womersley 1977; Spring, Greenall and Sellers 1975). The Australian UNESCO seminar on "Education and the Human Environment," in Melbourne in 1975, along with submissions from other interested parties, strengthened the report without

causing major structural change to it (Greenall and Womersley 1977). The report gave little thought to scaffolding the change from teaching of content to "attitude and behaviour change" (Greenall 1987), nor was EE defined clearly. This was possibly politically expedient, although it must be said that EE definition was still evolving at the time. The expected expansionist budget for 1975 did not eventuate, leading to the deferral of this approximately two million dollar proposal as the CDC had its budget cut (Greenall 1987). With the change of government in 1975, EE lost its broad political support and priority. However, an EE Study Group established by the new Minister for Education, Senator J. Carrick, in 1976, had an essentialist brief of making recommendations for school-based curriculum development in collaboration with the states and territories (Greenall 1987; Greenall and Womersley 1977). The EE Study Group was inclusive of related government bodies such as departments of environment, education, housing and community, as well as industry and environmental organisations, in calling for the enactment of necessary actions (Greenall and Womersley 1977).

Recommendations included:

- the acceptance of environmental education and its significance with emphasis on recognition and awareness of the diverse teaching workforce,
- EE curriculum resources for a diversity of disciplines,
- open communication channels for the effective and efficient flow of environmental education both nationally and globally,
- the forging and maintenance of global links, particularly regional, and
- the establishment of a national EE council (Curriculum Development Centre 1978c).

One of the dot points within the CDC 1978 report was to make senior administrators concerned with education and environmental management and aware of, amongst other things, the international status of EE. While this report recognised that the EE found within formal education did not meet EE expectations and that EE was evolving, it recommended case studies of existing work rather than new exemplars of practice (Greenall 1987). It did, however, acknowledge and prioritise the need for increasing teacher awareness of EE.

Unfortunately, prioritisation was lost when other supporting agencies, including state departments of education, supported case studies, papers and evaluation reports for teachers, and in-service activities with little spotlight on increasing awareness. Once more, there were no details of aims and definitions for EE and guidance on teacher assistance was absent.

The CDC produced statements, frameworks and educational resources. Three initiatives were coordinated by the CDC, two of which stemmed from the CDC's Study Group on EE. These initiatives were:

- the EE Project funded over two years to support the resource development necessary for teachers and schools to develop EE policy and programs and its implementation into schools (Greenall 1979),
- a multi-media kit of materials investigating the National Estate, and
- an EE Resources Project funded by the Commonwealth Department of Environment, Housing and Community Development which supported the development of four facets of the national estate: the built environment; the fragile environment; Aboriginals and the environment; and, decision making and the environment (Greenall 1979).

Submissions for the EE Project resource development did not meet expectations of education "for" the environment with most of them missing the affective or action-oriented objectives (Greenall 1987). Additionally, few involved more than one or two disciplines, so the interdisciplinary nature of EE was absent. A few resources were commissioned to add substance to the production of the resource books (Curriculum Development Centre 1981a, 1981b; Greenall 1987).

The Centre produced the first national statement on EE in 1980, mostly funded by the Commonwealth Department of Environment, Housing and Community Development (Greenall 1987)—*Environmental Education for Schools: Or How to Catch Environmental Education* (Greenall 1980). Distributed to all schools, it provided policy guidelines (Greenall 1987). Greenall described the modified set of the Belgrade and Tbilisi objectives within this

statement as compromised due to the watering-down of the environmental problem emphasis (Greenall 1981a).

Within project dissemination there was a lack of systemic support. The state and territory liaison officers that were part of the CDC EE project support network and the production of materials were out of synchronisation—the network existed from 1978-79 while materials were not available for dissemination until 1980. Additionally, these CDC network commitments tended to be an add-on to the workload of already overstretched liaison officers, rather than resourced one day per week as intended (Greenall 1987). Furthermore, CDC support shifted to other competing subject matter in 1980.

In working on establishing the national EE agenda within the CDC, it was found that rather than explicit opposition, protest was expressed in "structural and constitutional ignorance and apathy" (Greenall 1981a, 251). Additionally, there were difficulties for teachers practicing EE.

> *Counter-hegemony in Australian education is probably as rare as elsewhere. It is more likely that Australian schools will "swim with the tide" rather than "anticipate future developments." Attempts to teach publicly critical social problems can meet powerful opposition.*
>
> (Greenall 1981a, 61)

The CDC was absorbed into the Federal Department of Education in 1981 (Austlit 2012), dissolving a developing environmental studies core EE curriculum for Australian schools with a design for environmentalism to pervade the core (Greenall 1987). The Employment, Education and Training Act 1988 (NSW) disbanded the Curriculum Development Council that oversaw the Centre (Australian Government: Federal Register of Legislation n.d.). Yet, by the end of the 1970s, the defining character of EE was still ambiguous and contested—seen as "field studies in Science or Geography, or just more educational jargon." (J. Smith 1978, 5). The issues with lack of EE definition and workable statements, along with the lack of systemic support and funding, contributed to the slow and confusing development of EE, as did the "toing and froing" of political favour.

The Formation of the Australian Association for Environmental Education

CDC activities, however, led to the establishment of the Australian Association for Environmental Education (AAEE). The experiences and evidence of the CDC EE committee/study group revealed a need for greater EE coordination, better lines of communication, and a desire for a supportive, collaborative network, in addition to a need for a push for coordinated EE curriculum. CDC associates involved in the EEP, including John Smith, Annette Gough and Fensham, had been investigating and progressing an Association (Curriculum Development Centre 1978a,b, 1978/79, 1979a,b,c,d,e; Fensham 2015). A national newsletter, originally titled *Environmental Education Project Newsletter*, assisted in disseminating information and coordinating activities.

The AAEE took shape and was established in 1979, galvanising a network for support. The newsletter became the *AAEE Newsletter*, and later, in 1989 *OzEEnews* (Australian Association for Environmental Education 2015). In 1980, the AAEE held its first conference where a draft constitution was developed. The *Australian Journal of Environmental Education* had its inaugural edition in 1984, paving the way for the development, support and progression of EE/EfS research and theory, and thus furthering praxis, within the Australian context.

Further Development within Environment and Education Bureaucracies

In the second half of the 1900s, the "environment" was becoming more of a feature in state bureaucratic entities. On a state level, the State Planning Authority was established in 1963 tasked with the difficulties of administering non-Crown land usage (Strom 1987). While the NSW State Pollution Control Commission was enacted in 1950, it took until 1991 for it to evolve into the NSW Environmental Protection Authority [NSW EPA] (Austlit n.d.). The Department of Conservation has also undergone great change depending on changes in governance.[13] Specialisation importance within governance can be gleaned from the department groupings and their nomenclature.

[13] Constant alteration of groupings for government departments is dependent on political power. The Department of Environment has been particularly changeable at a national and state level. For instance, the

In the NSW Department of Education, economic prosperity brought substantial educational reform at various times during the period under consideration (Hughes and Brock 2008). This enabled the development of FSCs in NSW, and by default, and in the case of the Education FSC architects, design, the environmental education that was emanating from them. There is a huge argument here as to whether there was environmental education for the environment. However, I will argue that while much of the education was "in" and "about" the environment, many of the centres did enact the crucial element of "for" the environment. Centres would have been a beacon within an environment resistant to change due to many differing factors including the power struggle of the university system, the science discipline, and the bureaucracy to control the curriculum. Elitist ideals prevailed while the necessity for board curriculum was abidingly evident. Additionally, the centres were and are immersing and connecting, educating, students in, with, and about an environment they are increasingly alienated from—an essential ingredient in motivating an individual to be critical and take action.

The boom years of the 1950s and 1960s brought pressure within both the public and Catholic schooling system as the population expanded through prosperity and a large post war migrant intake (Sriprakash and Proctor 2018). Lack of resourcing due to the Depression and the war years exacerbated the situation. Catholic schools were particularly affected, having lost their government funding in the 1880s and experiencing a significant decrease in brothers and sisters entering the Catholic Church religious teaching orders.[14] Protestant schools tended to concentrate on the elite student catchment.

Harold Wyndham was appointed Director-General of Education in NSW in 1952 (Barcan 1965). He was the first Director-General not to have had a trajectory from primary school teaching, through the ranks of inspector and administration within the Department. Wyndham had university experience including post-graduate work overseas, and as

NSW Office of Environment and Heritage was established in 2011 and abolished in 2019 after the election—subsumed within the Department of Planning, Industry and Environment (NSW Government 2019).

[14] While governance of education was consistently a state affair, from the 1960s onward the federal government started to provide funding. Initially, Menzies 1963 election promise saw the States Grants Science Laboratories and Technical Training Act 1964 (Sriprakash and Proctor 2018).

Secretary to the Department of Education from 1948-51. He was regarded as cultured and thus better suited for the position given Australia's more sophisticated character in the context of the 1950s boom and globalisation. Wyndham took on the task of reorganising secondary education at a time when there was a shortage of teachers, buildings and funds. He chaired the Committee to Survey Secondary Education in NSW in 1953, which tabled its report in 1957.

The aim of the Committee was to examine the objectives, organisation and course content of public school education provided to adolescents, and based on the findings to recommend a way forward for a good general education that would deliver a diversity of curriculum to meet the varying abilities and skills of all pupils (Barcan 1965). Wyndham believed that the academic tendency of secondary courses had "sanctioned the omission of elements necessary for ordinary citizenship" and created "wastage of ability" (Yelland quoted in Hughes and Brock 2008, 56) given the academic stronghold of an elite curriculum directed to university entrance. Recommendations included a transition from primary education at about the age of 12, to four compulsory years of comprehensive high school education with no entry examination. Curriculum was to include initial compulsory core subjects with guided electives introduced in consecutive years. This compulsory four years of schooling was to end with the School Certificate examination. A final non-compulsory two years culminating in a Higher School Certificate was to provide an avenue to university.

The Wyndham Report coincided with the mid twentieth century discovery of adolescence as a growth stage, made possible by the affluence of the times (Barcan 1965). Comprehensive, co-educational schooling began and changed schooling culture, as it was known. The price paid for comprehensive education was large schools with students organised into groups generally called "houses." Core subjects included English, social studies, science, mathematics, music, art, crafts, physical and health education and religious education (taught by visiting clergy).

The importance of changes to education and the curriculum for conservation education, EE (Curriculum Development Centre 1978c) and, importantly, the setup of FSCs, was the diversification of the curriculum and the need for facilities to learn about science. New

syllabuses needed to cater for a wide range of abilities, not just those who were likely to go to university (Barcan 1965). The changes to school curricula contributed to an increase in fieldwork.

There had been growing discipline problems from the mid 1950s, particularly for low achieving students (Barcan 1965). Learning through hands-on outdoor activities and being immersed in the natural environment has been proven over the years to increase learning engagement for low achieving students (Lieberman and Hoody 1998) with the first evidence of this possibly emanating from the experience of Enmore Activity School at the Broken Bay National Fitness Centre camps. Wyndham would have been aware of this, given that he was one of the creators of the Enmore experiment.

Despite some apprehension, the Wyndham recommendations were put to Parliament, and were accepted in 1961. Two education boards were established: The Secondary Schools Board and the Board of Senior School Studies. Some characteristics of change within education in NSW mentioned by Barcan (1965) seem of relevance to EE. First, the motive for change was the pressure of numbers; second, some of the changes were already occurring; third, implementation was delayed due to a desire to economise; and finally, there was modification of the recommendations. Granted these delays came from the powerful conservative Public Service Board[15] who held the purse strings and were not keen on such an expensive, extreme venture, and the Catholic membership of the Caucus education sub-committee. This committee argued that the extra secondary year would disadvantage Catholic families who were paying fees and needed their children working at an early age. Accordingly, there was concern that students in Catholic schools could miss out on a school qualification. Thus, for the Government of the day there was fear of a political backlash from Catholic voters (Hughes and Brock 2008). Change was also very dependent on the Education Ministers with some being more amenable and skilled in pushing agendas while others were reluctant to rock the boat—particularly around election time.

[15] The Public Service Board controlled government departments funding until 1988 when its functions were devolved to department heads (MacPherson 2015; NSW Government: State Archives & Records n.d. d).

The required practicality of the planned Wyndham proposals necessitated greater freedom of decision making for individual school principals. This was due to varying conditions of the buildings and equipment, and staffing (subject knowledge and numbers) of secondary schools (Barcan 1965).

This decentralisation and ensuing curriculum diversification with its emerging increase in field studies coincided with regulated education practices evolving within the NSW nature reserves. The wildlife service within the FPP had found the need to consider limits to the types of usage within their reserve areas (Strom 2017). The public was welcome because of the necessity to educate and endear the public to the reserves, but it was also necessary to set up guidelines to protect these sanctuaries. Plans were developed for maximum numbers, appropriate activities and areas of restriction, advertised and regulated by staff. Specific reserves and areas within reserves were set as "educational nature reserves" under strict support, taking the pressure off other reserves whilst still fulfilling an educative role. Strom stressed the objective of nature reserves as "reserves of biotic diversity" as opposed to national parks that were overwhelmingly seen, by the public, politicians and bureaucrats, as recreational areas. The FPP was keen to encourage research within the nature reserves, as was the trend overseas. The need for clear educational programs had been set.

Whole Child—Head, Heart, Hand: Sabotage

The establishment of the earlier Departmental FSCs and EE coincided with the development of progressive education in the late 1960s and throughout the 1970s. The child development theories of Piaget stimulated the acceptance of child-centred education. The importance of first-hand experience was stressed. Progressive methods of teaching and alternative forms of schooling were of interest. Ivan Illich's ideas that education should be de-schooled were popular, as was the work of Neil Postman and Charles Weingartner who were attempting to turn education on its head (Hughes and Brock 2008). Dr John Vaughan, an advocate of child-centred learning and the devolvement of curriculum to the school /teacher level, was well placed to effect change. He was the Director of the Studies Directorate in the NSW Department of Education and the Executive Officer for the Secondary Schools Board and the Board of Senior School Studies as well as being a member of these Boards. Vaughan

ultimately inspired curriculum development change—a turning point from teacher to student-centred learning—reflexivity of teaching practice.

The three Vaughan reports from 1974-1978 (*Aims of Secondary Education, Base Paper on the Total Curriculum, and Aims of Primary Education*, 1974, 1975, 1978 respectively) called for the curriculum development process to include greater teacher and school participation (Hughes and Brock 2008). Distinct subject areas were questioned, and a more cross-curricular approach favoured. This complemented the purposes and pedagogies of environmental education. However, the initiatives failed due to lack of resourcing and the highly centralised structures controlling schools. The Directorate of Studies was set up in 1973 to coordinate curriculum policy yet there were other head office directorates and an intricate web of departmental and interdepartmental committees which had input into the school curriculum. Many of these statutory boards and committees were dominated by academics insisting on academic "depth and merit" (Hughes and Brock 2008, 95). It has been very difficult for NSW to move toward whole school, whole child education.[16] Devolution and child-centred learning concessions were made but central control was maintained with head office structures strengthened.

In 1975, there was a need to broaden the curriculum prescriptions from the Wyndham Scheme for senior secondary students given an increase in low ability pupils continuing on to senior studies (Hughes and Brock 2008). Courses under the banner of "other approved studies" were introduced. They did not contribute to the HSC aggregate mark and were generally one-unit Year 11 course for students who did not intend to continue to tertiary education. An additional purpose of these courses was for teachers to develop curriculum to meet local needs. In some cases, the Year 11 course supplemented the need for 12 units in Year 11 when a student intended to undertake a three-unit course through to the HSC. Some of the courses developed were "environmental studies" courses.

[16] The domination of university academics discipline-based curriculum on the school curriculum and attempts to gain some control over it are evident from the early 20th century (Hughes and Brock 2008).

Wirrimbirra: Life Before FSCs Within the Department of Education

Years before Strom found himself back in the Department of Education, an education facility with a focus on the environment had been developing at Bargo, southwest of Sydney. In 1962, Carmen Coleman from the Wildlife Preservation Society of Australia, had purchased a property called Wirrimbirra, meaning "to preserve" in Aboriginal language (David G. Stead Wildlife Memorial Research Foundation of Australia n.d.), for the establishment of a conservation centre for meetings and activities (Webb 1998). Wirrimbirra was handed over to the Association for the David G. Stead Memorial Wildlife Research Foundation of Australia (Incorporated) in 1964. Monies from the David G. Stead Memorial fund, set up in 1958 after Stead's death in 1957, were diverted into the cause, and Harris enthusiastically came on board paying the remainder of the mortgage (Webb 1998).

The aims set out by the company owning Wirrimbirra were:

- to initiate, promote and further research, scientific, technical or other, into all aspects of the conservation of wildlife of the Commonwealth,
- to maintain sanctuaries, reserves, and to carry on experimental work,
- to co-operate with organisations, universities and institutions in experiments or research into the use of national parks, playgrounds and similar areas, in the proper management, cultivation and preservation of Australian indigenous fauna and flora,
- to publish information related to these aims and objects and to arrange lectures and carry on educational courses for the furtherance of these objects, and to establish fellowships and scholarships for work in conservation, and
- to establish and maintain museums, arboretums and collections related to its objects. (Webb 1998, 145-146).

These aims suggest an intention to be a private wildlife service or a not for profit wildlife service, noting the distinction between private and public.

The Wirrimbirra property was on the Hume Highway, between Tahmoor and Bargo, and had the southern railway line running through it (which was to cause problems and add to the

argument for the withdrawal of the Department of Education's support in 1996). The property included 12 acres between the railway line and the Hume Highway and 90 acres to the east of the rail after additional parish land was purchased and Crown land sought. Wirrimbirra Gardens, and buildings associated with the enterprise, were allocated 12 acres of the property. The enterprise was very much a community collaboration: the wooden gates to Wirrimbirra were a retirement present from Harris' Sydney Teachers College colleagues; Carmen Coleman, an accountant and driver of the initial project, worked on a plan for an education and research centre; and Milo Dunphy and landscape gardeners perfected the plan for Wirrimbirra Gardens (Webb 1998).

The first Board included Harris and Strom. Ivor Wyatt of the National Trust of Australian (NSW) was also a founding Board member. Wyatt's mother had been a great friend of David Stead and was the founder of the National Trust of Australia in 1945. David G. Stead's son, Robert L. Stead was the Honorary Treasurer. To secure Wirrimbirra into perpetuity, the Foundation, lobbied by Harris, relinquished the freehold of Wirrimbirra to the National Trust of Australia (NSW) in 1965. This leasing arrangement, costing a pound per year, enabled taxation concessions on gifts and exemption from local government rates (Webb 1998).

The *Wildlife Research News*, the newsletter of the Foundation, kept the community informed and educated about the environment and the wide range of activities taking place. Residential facilities were built from 1972 to 1974 with companies contributing some funding. For example, the Persoonia Cabin was funded with the support of the Colonial Sugar Refining Company (Webb 1998).

Hicks, the first President of the Foundation, credited Strom as having "guided the Environmental Field Studies Centre into being" (quoted in Webb 1998, 226). Yet there were many involved. Mel Fackender, a well-known conservationist from the Illawarra, became the on-site ranger for Wirrimbirra from 1965; there was the Strom Demonstration Natural Area and pool, intended as a demonstration site for teachers and schools; Harris prepared a secondary school assignment; and volunteers acted as educational officers. Strom and Fox observed that the ranger, Mel Fackender, engaged the public with his engrossing naturalist

narratives and that Wirrimbirra had become a popular destination for local schools who had recognised this great field resource (Fox 2016).

The Development of EE Within the NSW Department of Education

When Strom abruptly found himself working back at the NSW Department of Education in 1968, he was given a desk in the corner of the typing pool in the Bridge Street engine of the Department. Fox states that Strom's new position was political with the Public Service Board wanting to look after an extremely dedicated senior public servant—the position of "Advisor in Conservation" was not a strategic Departmental decision. Rather than feeling demoralised by demotion to a typing pool, Strom got onto his mission and found a great amount of support within the Education Department (Fox 2016).

Strom noted in his developing ideas about the justification, substance and purpose of EE in and for discussion with the Director General and five of the Directors of Education:

> *Environmental Education is not a media for propagating a cause. It aims to alert the community so that responsible administration can take action. Maybe causes are wanted, but using Environmental Education programmes [sic] propagate a particular attitude is dangerous. I.e. mining and miners. The value judgements should be made by the citizens, not for him… But how many are capable of making the decision? We will always be dependent upon the informed fraction of the community.*
>
> (Fox 2016, Ch. 12, Para. 43 & 44)

Strom's notes go on to say that EE programs need to make people aware of administrative decisions and actions and assess them for their effect on the environment, and assess the impact of newspapers and mass media. Programs need to provide environmental encounters. Program outcomes include knowledge about resources, their use and management and being able to make value judgements. Programs should aim to explain the student's world around them—its history, value and problems, and plans for the future. Strom advocated utilising students' environments in doing this (Fox 2016; Strom 2017) and stressed that environmental education was not a new subject but one that utilises the existing curricula to benefit the students and the community (Fox 2016).

Strom supplied a work proposal to the Assistant Director-General (Services) Charles Ebert, instigating a policy meeting with five directors of Education (Fox 2016). Ebert was a contemporary of Wyndham's who had attended the same primary and high schools—Kensington Public and Fort Street High School—a few years after Wyndham (Hughes 2002). After this meeting, the Deputy Director General of Education (Chairperson), Mr Yelland noted in relation to Strom's statement of duties that:

> *If he is to assist in the field work required at both primary and secondary levels, he will need somewhat wider terms of reference, with the emphasis of science observation in the field. It is recognised that the ultimate benefit of such observation will transcend the requirements of the Science, Geography and Nature Science Syllabuses, and will lead to a heightened understanding among school pupils and teachers of the principles of conservation.*
>
> (Yelland quoted in Fox 2016, Ch. 12, para. 48)

Yelland goes on to state that, "agreement was therefore reached" that Strom would provide an advisory service in field excursion work with the immediate purpose of fulfilling the aims of the science, geography and natural science syllabuses. He elaborated:

> *Assistance of this kind presupposes:*
>
> - *Surveys of suitable natural reserves*
> - *Production of notes on these areas with material suitable for both primary and secondary teachers*
> - *Conduct of in-service courses for teachers*
> - *The setting up, in selected schools on a pilot-scheme basis, of external or field laboratories capable of meeting the needs of some of the scientific observations required. If owing to the lack of staff, the work is hindered, priority should be given to the Science area.*
>
> *To carry out this work Mr Strom will require:*
>
> - *An additional field officer*
> - *A regular clerical service for the production and distribution of material*
> - *Field equipment and an annual financial appropriation*
> - *The cooperation of the In-service Training Division.*
>
> (Yelland quoted in Fox 2016, Ch. 12, para. 49)

According to (Fox 2016), Charles Ebert directed Yelland's expanded directive to a sympathetic Education bureaucracy via the regional directors of the Metropolitan, Newcastle and South Coast Regional Directorates.

In Strom's 1969 memos, he talks about EE but says the term "environmental education" was new to him at the 1970 "Education and the Environmental Crisis" conference. There could be a multitude of reasons for this irregularity. There is no doubt Strom did indeed teach beyond "conservation education." However, it is clear from the Director's correspondence about the initial policy meeting with the five Education Directors that they were talking about "conservation education." For those in the EE field, conservation education and EE had been used interchangeably over the years and perhaps been used interchangeably and/or conflated over this period. However, according to Bonyhady, as the industrial revolution progressed, "professionalised" conservation became less about a continual supply of natural resources and more a "form of intensive resource exploitation predicated on radical interference with the environment" (2000 9). For example, large-scale irrigation and monoculture plantations for saw-milling became part of the professional conservation agenda. Conservation became a disparaging word for those advocating for protection and proper management or preservation of ecosystems.

The primary and secondary education directors found Strom's proposals ambitious and unrealistic given the Department's finances (Fox 2016) yet they were probably not aware of the background preparation work Strom and Fox had already done while working within the Fauna Protection Panel. Strom and Fox had been interested in FSCs from 1966 onwards. They had conducted a literature search on the subject and contacted Dr Eric Bird, a geography academic at the Australian National University who was knowledgeable about the English FSC system (Fox 2016). In 1966 Fox, as Field Officer at the FPP, presented a paper at the University of New England's "Education in Conservation" seminar where he emphasised the value of nature reserves in formal and informal education. FSCs, in conjunction with nature reserves, had been suggested as a way forward. Strom and Fox, both with experience in outdoors education, had already discussed this potential and had been planning centres at Barron Grounds, Hallstrom and Nadgee Reserves. The education services set up in reserves by the FPP received popular support. A FPP request for funds for a centre at Barron Grounds

was not successful at the 1966/67 budget estimates. However, money was set aside the following year for a FSC—at a time when the FPP was in limbo because of the announcement of the Government's proposal to abolish it (Strom 2017). Panel funds were frozen and rolled into the NSW National Parks and Wildlife Service (NPWS) which was established on July 4, 1967.

Once in place as the advisor for conservation, Strom started canvassing suitable "conservation education" areas in reserves and on Crown land in the Sydney region. With school groups, he carried out mapping and investigating the geology, landscapes, history and ecology. Fox points out that many within Education across the hierarchy, from regional directors and school inspectors to principals and teachers, were enthused by Strom's sense of purpose and commitment. Strom, Harris and Webb had also influenced many of them as teacher educators (Fox 2016).[17]

> *The ten areas that he listed in his proposed program as District Field Centres, were already well-studied by him and had been involved in earlier work, some even with pre-prepared notes used on Club [Caloola] studies. They were also unaware of the work both Strom and I had been engaged in relating to the operations of field studies centres that Strom had ideas of developing in some of the nature reserves and national parks for which he was [sic] member of NPWS management committees. … Three areas had been studied for such development and we had the ear of Mr Bruce Loder, the Service's architect to design a suitable building. The areas were, Barren Grounds and Muogamarra Nature Reserves and the Bouddi and Warrumbungle National Parks.*
>
> (Fox 2016, Ch. 12, para. 55)

As noted, prototypes for conservation education, which aimed to motivate people into actively caring about their environment, were evident at places like Barron Ground.

The concept of FSCs, in a NSW conservation sense, was originally aimed at providing education for all within the national park/nature reserve environment.

[17] For instance, both Webb and Tribe had been taught by Thistle Harris. Some of the environmental educators within FSCs had been taught by Webb.

> *They would provide a wide opportunity for education over the whole spectrum of the environment and hopefully sensitise participants to see the environment as the integration of natural and man-made systems.*
>
> (Strom 1987, 6)

Strom's move to the Department of Education was significant as centres were within the Education jurisdiction and thus only available to service government schools. Indeed, Strom later lamented, "One can imagine the educative potential of even ten field studies centres if these were an active campaign to encourage use by all schools and the community" (2017).

The Gould League of NSW and Gould League Advisory Service

The Gould League of Bird Lovers NSW, established by two teachers in Wellington NSW in 1910, quickly grew to having branches in most schools (Johnston and Tribe 1982). In the late 1960s one of Strom's strategic positions was as a member of the Gould League Council of NSW (Fox 2016). About the time that Strom moved to the Department of Education, the organisation underwent radical change to widen their educational gaze and effectiveness by encompassing EE—they became The Gould League of NSW (Strom 1987). Strom was attempting to reinvigorate the Gould League of NSW into environmental education action. In 1969, the *Gould Leaguer* (NSW Department of Education 1969a) produced by Strom, was amalgamated with the *Junior Tree Warden Journal*. Strom had instigated this merger when he started out as Advisor of Conservation at the Department (Fox 2016). This publication was an effective vehicle for disseminating information regarding conservation/environmental education, the development of FSCs and their progress and, when necessary, galvanising support (NSW Department of Education 1969a, b, 1970, 1971a, b, 1972a, b, 1973a, b, 1974, 1975). The reason for surveying field studies sites was provided in the inaugural edition:

> *To demonstrate or initiate studies arising from the science and geography syllabuses of schools and to provide a means of bringing learners into close contact with natural resources and natural resource management so that vital attitudes towards conservation may be developed.*
>
> (NSW Department of Education 1969a, 7)

The Advisor in Conservation contact given at the Head Office, Bridge Street, Sydney, was also publicised in this edition. There were great moves forward for EE in the early 1970s.

In 1971 Tribe, a teacher at Wakehurst Primary School, along with teachers Henry Bingham and John Kelly, set up the Gould League Advisory Service—advising teachers about EE. They had been encouraged to join the League by Strom in his role as Advisor in Conservation. Tribe had met Strom at an in-service event where Strom took participants to Muogamarra. The Gould League Advisory service contacted schools and let them know they were available for support. They carried out their first environmental education in-servicing at Balgowlah Heights Primary School and at Manly Dam.

One teacher professional development event worth mentioning took place in North West NSW in the 1970s. David Maher, the Regional Director of Education for North-West NSW, released 30 teachers in the North West so that they could participate in a three-week travelling EE seminar/workshop. According to Fox, this highly productive in-service produced resources and enabled EE. Treating the working groups as one would a class of students minimised/eliminated any perceived difficulty participants had felt with regard to programming and presenting EE. Additionally, the plant identikit was developed (Fox 2016).

On a broader educational front, Rex Meyer, the Director for the Advancement of Teaching within the School of Education, Macquarie University, was on a mission to channel the resources of the diverse plethora of field studies centres in NSW for the environmental studies cause (Meyer 1972; Pearson 1978). In an address in April 1972 at the David G. Stead Memorial Wildlife Research Foundation of Australia, Meyer drew on the aims of the National Park Service in the US to outline the type of centres he envisaged for environmental education in Australia. These aims talked about citizens being introduced to their total cultural and natural environment, both past and present, to develop a more ecocentric citizen, able to take responsibility and action in environmental problem solving (Meyer 1972). Meyer proposed that the various centres established in Australia could easily be inclusive of environmental studies. These centres included FSCs for biological and earth science research, national parks and conservation society centres, those concentrating on specific

environmental foci such as ornithology or botanical art, and those interested in fitness, adventure, bushwalking, sporting or recreation camps.[18]

> *This planet is the only place we can call home. It is small, over-crowded and littered with our refuse. Our survival depends on understanding our relationship with this environment; we must look closely at every aspect, not just that part that appeals to our particular sectional interest.*
>
> (Meyer 1972, 4)

The Association for Environmental Education (NSW)

In September 1972, Piesse and the Australian Conservation Foundation sponsored a public meeting at Macquarie University organised and chaired by Meyer and convened by Strom (Fox 2016). Attendees included Beryl Strom, McDonald, Joan Webb, lecturers at Newcastle College of Advanced Education (CAE) and the Ku-ring-gai CAE respectively, and Tribe. Beryl, an environmentalist, was Strom's wife (McDonald 2015). All these people either had or went on to have a significant impact on EE.

The seminar, titled Environmental Studies in NSW, garnered significant support from government agencies and tertiary education organisations to establish a working group for future action (Fox 2016; Strom 2017). Morrison (1974) observed that the Association for Environmental Studies in NSW had run its first activity in the field in December 1972. The Field Studies or Environmental Studies Association became the Association for EE NSW [AEE (NSW)] (Association for Environmental Education [NSW] 1983; McDonald 1999; NSW Department of Education 1973a). Environmental education advocates in the Hunter Region including Kevin McDonald, Arthur Munro and Brian Gilligan, formed the Awabakal Association for EE in 1975. Throughout the state, other regional networks were developed. For example, Dufty set up the AEE NSW Country Region (McDonald 1999). The Associations worked closely together and were a strong force in pursuing FSCs in NSW,

[18] Some of the content of Meyer's talk had been previously published in *The Living Earth Journal* in 1971.

lobbying governments for EE (both formal and non-formal) and a formal EE curriculum, and a Council of EE (Fox 2016).

> *So one of the very strong roles of the Association for Environmental Education, and also of these field studies centre conferences, was to actually lobby for, not just an inspector that had environmental education as part of his or her portfolio, but to have a specialist position in the Department of Education that could coordinate environment education within the state, including environmental education centres.*
>
> FA

The AEE (NSW) was instrumental in building EE capacity and networks, and conferences were initiated in 1976. These conferences took place over several days in various locations across the state. Papers, roundtables and poster presentations were presented on current environmental and environmental education issues, and site tours of environmental education interest were undertaken. In addition to important networking and professional development initiatives, a crucial aspect of conferences was the planning and refining of strategies to further EE and environmental improvements. The AEE (NSW) was influential in lobbying politicians and ministers for more FSC/EECs and the conferences were a space to coordinate strong and sustained influence. Conference plenary sessions included resolutions for action and adoption, forwarded to various influential agencies, including the state government.

An annual award for outstanding contribution to EE in NSW commenced in 1981 (McDonald 1999; Fox 2016).

> *All movements evolve and these people were the movers and shakers, working usually in if not the most unfriendly of environments, then in a human community very ignorant of the issues.*
>
> (Fox 2016, Ch. 12, para. 80)

A list of award recipients for the 1981 to 2015 period reveals that four FSC/EEC principals, Gilligan, Dufty Chris Prietto and Stuart DeLandre, and three FSC/EEC managers, Tribe, Geoff Young, and Syd Smith, were beneficiaries. There is evidence throughout the research data that there was a very close connection between the AEE (NSW) and the centres/centre staff with many of the staff participating and taking on roles within the organisation. Conversely, many did not experience the influence of the AEE (NSW). Distance from the Association (both space and time) and the distraction of local events seem to be factors.

FSC/EECs within the NSW Department of Education

The establishment of the first two FSCs within the NSW Department of Education were the culmination of an enormous amount of politicking and clever manoeuvring within and outside the Department of Education. Serendipitous and advantageous circumstances also provided the appropriate environment and resources for their foundation. The first two centres made visible how field studies could function within the Department. Importantly, these centres were immensely popular and highlighted the benefit centres provide to education. This was particularly important at a time when schools were adapting to administering and teaching a much larger and more diverse academic cohort, and the changing curriculum and pedagogy this necessitates.

The next section of this chapter and the following three chapters of this narrative provide descriptive vignettes of the establishment and functioning of each of the centres.[19] These descriptions outline important events, examples of pedagogy and curriculum, and, inhibiting and enabling factors in the development of FSC/EECs. These chapters are interspersed with snapshots of events that took place on an international, national, statewide, community and departmental level that impacted the development and functioning of the centres. These factors in addition to what is learnt from this history regarding effecting change in large bureaucracies will be analysed in the final chapters.

Muogamarra Field Studies Centre

Muogamarra Sanctuary was an amalgamation of the Hallstrom Nature Reserve and John Tipper's Muogamarra Sanctuary (Strom 2017). Tipper was an avid conservationist. He belonged to the Wildlife Preservation Society of Australia, was founding president of the Rangers' League of NSW (1929) and assisted in establishing the Australian Bushland

[19] The variability of data genre and availability for each Centre has provided for chronological and political evolution within an inconsistent structure.

Conservation Association in 1932. To protect part of the region, Tipper took out a lease for 2,000 acres of land from the Department of Lands. The land overlooked the Hawkesbury River and was around the Muogamarra Ridge, Awabakal for "Preserve for the future" (Gowers 2002).

The Sanctuary opened in 1935 with limited access during the wildflower season, from mid August to late September. To preserve the vegetation, Tipper set up a volunteer fire brigade and ultimately a study centre and museum. In 1953, Tipper relinquished the sanctuary to trustee administration supported by the State Government. He held the position of president and resident curator but grew increasingly unhappy with management practices once the NSW NPWS administered the Sanctuary in 1967. He ended his association with the Sanctuary in 1968 due to a combination of ill health and dissatisfaction over the level of protection afforded Aboriginal relics on site (Gowers 2002).

Muogamarra, FSC[20] opened in 1971 after an agreement between the NSW NPWS and the NSW Department of Education. NSW NPWS supplied the building and the NSW Education Department supplied the teacher and the necessary education equipment (Fox 2016). Strom was able to persuade the second Director of the NSW NPWS, Don McMichael (1969-73), of the value of a FSC on Muogamarra Nature Reserve utilising the previously allocated funds (Strom 2017). The Wyndham Scheme gave validity to the argument for establishing field studies centres within the Department, given the emphasis on a diversity of subjects in addition to field work in Year 11 and 12 subjects (Strom 2017).[21]

Fox, Senior Education Officer at NSW NPSW; Bruce Loder, the NSW NPWS architect; and Strom worked on the design of the building, which was to be a template for others. The design specifications included being suitable for up to 40 students and two teachers, low maintenance with natural lighting provided by wooden shutters to bench height, and a 2000 litre water tank. A generator was to supply energy when necessary. The building was to be

[20] Later to become Gibberagong Field Studies Centre.

[21] A. Strom, audio interview by D. Tribe. 1991.

easily transportable so it could be used as a research station. Classroom facilities were to include a lockable storeroom and teacher preparation area. Opposite walls were to have workbenches with lockers underneath. There was to be a chalkboard and projector area at one end and a reception area with hooks for bush and wet weather gear at the other (Fox 2016). There were already septic toilets and basins on site. Apparently, the building was made with pine logs treated with arsenic and in later years the building could not be used in case students licked the white powder off the walls.

The site chosen was a hundred metres from the Hawkesbury sandstone escarpment and overlooked Peats Bight. There was access to temperate rainforest, and woodlands and heaths typical of Sydney sandstone vegetation. It was at the end of a track a few kilometres off the Pacific Highway (Fox 2016). Strom had suggested the building be erected in a position close to the railway and ranger's quarters for access and supervision but it was built some distance from these facilities (Strom 2017). There was also no connection to the electricity supply.

There was a teacher shortage in NSW around 1970. A reluctant NSW Department of Education staffed the complex, built by the NSW NPWS, when it was pointed out that if they did not they would be letting another agency do their job (Strom 2017). Barbara Hamilton was the first teacher-in-charge at Muogamarra (Fox 2016). A practicing educator who had come from the Sydney Church of England Grammar School in Moss Vale (Morgan 1972), Hamilton had a B.A. in Town and Country Planning, a Diploma in Education and an interest in Botany (Woolley 2016). She had previous experience taking her students on field excursions around the Southern Highlands, the Murray Valley, and Central Australia (Morgan 1972). In 1971 Hamilton went to the NSW Department of Education and applied for the position at Muogamarra on the spot after seeing an advertisement for a teacher to establish a program at the new FSC (Woolley 2016). She had six months to set up the program[s] (Morgan 1972; Woolley 2016).

Muogamarra had its official opening and opened on a full-time basis in 1972 (Hamilton 1973; Morgan 1972).[22] An article in the *Australian Woman's Weekly* (1972) described the purpose

[22] It should be noted that Willis was the Minister for Education from 1972 and Tom Lewis Minister for the NSW NPWS before he became Premier from 1975-76 before the fall of the Liberal Government. Willis ousted Lewis as Premier in the last few months of the Liberal Government's reign. Strom had worked under both of

of Muogamarra as educating for change in attitudes and behaviour in relation to the Australian environment and the preservation of reserves. In an article Hamilton wrote for *Education, the Journal of the NSW Public School Teachers Federation* (1973), she noted that the Centre was a pilot that was being monitored by Meyer from Macquarie University, and Strom, amongst others (Hamilton 1973). She also noted that time in the classroom was kept to a minimum with fieldwork and hands-on experience being the intention. Hamilton went on to say that,

> *The centre offers a basic preliminary introduction to fieldwork. Various courses are available but they are not prescriptive. Any student or teacher wishing to use the reserve and its many possibilities in a different way is encouraged to devise his own program of study. Nor is the use of the reserve restricted to science subjects; in particular I would like to see art classes using the wide variety of natural forms as inspiration as well as the more conventional use by natural science, senior science, geography, biology and related subjects.*
>
> (Hamilton 1973, 17)

The article stated that students showed a need for experience in observation and the recording of data. The article stressed that fieldtrips contributed to learning about the natural environment and how to conserve it, rather than just being a day out. The limitations of a one-day outing were discussed along with the desire expressed by students and teachers for a residential experience, including night viewing of nocturnal animals. The article goes on to mention the well-established nature of English centres, the already developed plans for more centres in NSW, and the need for adult learning centres in both natural and built environments. In detailing the protocols for booking Muogamarra, a month's notice was requested with the maximum number of students set at 40. Available resources and supports were discussed, along with the intention of pre and post work, integrated into a larger study focus. The article concludes with an invitation to teachers to visit and observe the centre during school hours in order to gauge its potential for themselves.

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these politicians in the FPP. Rivalry between these two ministers has been previously noted and continued with Lewis hosting a grand opening with only the Inspector of Schools in charge of the Gould League, Colin MacDonald, invited.

Other projects were happening, and other groups were utilising Muogamarra. For example, marsupial research was being undertaken to the south of the site by the Marsupial Research Centre, The University of NSW (Morgan 1972), and Meyer took science students to the FSC in the early to mid 1970s.

Muogamarra FSC became a good demonstration site for education potential. The area was very popular for school activities in conservation education (Fox 2016). Hamilton had the support of Strom (Woolley 2016) and in years to come she supported new FSC teachers such as Keith Armstrong, Wirrimbirra (1973) and Simon Leslie, Wambangalang (1975) by teaching them the ropes in managing and teaching in these new found centres. EE gained so much traction that the NSW Department of Education dedicated a school inspector to the growing field which was announced in the January 1973 edition of the *Gould Leaguer* (NSW Department of Education 1973a).

Wirrimbirra Field Studies Centre

The Gould League of NSW contributed to the development of Wirrimbirra by building a lecture, display and laboratory room in remembrance of one of their pioneers, Mr J. E. Roberts, Secretary from 1938-1962 (Webb 1998). Once the facilities were established, the Department of Education was encouraged to contribute to the development of a FSC. The Department of Education came on board in 1973 designating the Wirrimbirra FSC[23] as a School for Specific Purpose (gazetted)[24] and staffing it with Mr Keith Armstrong who transferred from Sylvania High School. The Department also supplied the furniture and equipment. Wirrimbirra FSC was available to public schools from Monday to Friday during school terms. Mr Colin Macdonald, the Inspector of Schools in charge of EE, was enthusiastic about the centre being a prototype for future FSCs (Webb 1998, 161). Harris was on the interview panel for Keith Armstrong's position. They had different ideas about

[23] Later to become Wooglemai Field Studies Centre.

[24] The New South Wales Government Gazette is the permanent public record of official NSW Government notices.

teaching with Armstrong very much focused on experiential, hands-on explorations while Harris favoured old school identification and classification. Armstrong's pedagogy suited the circumstances given that his classes were up to 40 students in size.

The activities of the Gould League Advisory Service proved to be in such demand that a dedicated a full-time position was requested from the Inspector of Schools in charge of the Gould League at the Department of Education, Colin MacDonald. Frank Haddon was seconded from the Central Coast, where he was very involved in EE, and became the first senior education officer of the Gould League of NSW in 1974 (Johnston and Tribe 1982). Frank, mentored by Strom, took over teacher in-servicing. There was great collaboration with the NSW NPWS: Strom and Haddon carried out many one-day in-service EE courses at Royal National Park, Bouddi, Kurnell/Towra and the Blue Mountains with Fox and Wendy Goldstein of the NSW NPWS Education Unit (Fox 2016).

Conclusion

This chapter outlines the genesis of environmental education in a golden era of environmentalism. It illustrates the opportunities taken to embed conservation education and a growing environmental education within the NSW Department of Education, and for FSCs to be established to support this growth. International and national workshops and conferences specifically addressing environmental concerns focused on EE. Audits of EE practice in Australia were conducted in order to develop an understanding of an emerging field. A definition of EE was slowly developed, reflecting the confusion and difficulty in progressing a problematic topic area given its cross-disciplinary, action-oriented, value laden character. At a national level, the Curriculum Development Centre, the Karmel Report and the Australian Commonwealth Schools Commission foregrounded prosperous times with progressive education and the funding of curriculum support for the devolution of education. These developments, while demonstrating the waxing and waning of political favour and power, led to the development of a national advocate for EE in the establishment of the AAEE which grew out of the ashes of the Curriculum Development Centre EE Committee/Study Group.

While the international and national phenomena outlined took place in the mid to late 1970s it was earlier, in the late 1960s to early 1970s, at a local level that the first two FSCs were created. Instrumental in their development was the Australian Wildlife Preservation Society, the Gould League of NSW, and Strom and others within the NSW Department of Education and NSW NPWS. Strom was established within the Department of Education, moving the agenda for the development of EE and FSCs from within. Significantly, the early 1970s saw the important transformation and creation of two influential EE organisations in NSW—The Gould League of NSW and the AEE (NSW). Additionally, there was support for EE through the Gould League Advisory Service and the employment by the Department of a Gould League environmental educator.

Within the NSW education establishment, FSCs were seen as a support for established subject areas given that comprehensive compulsory education was in its infancy and the student population was growing and diversifying. However, it is evident that EE advocates and educators were motivated to cultivate awareness of the inter-relationship between humans and their environment, and the effects of human activity in the environment. The local/ground level push for these centres coincided with an educational push for a more constructivist pedagogical, decentralised autonomous paradigm in the most prosperous economic, and thus political and social, era in history. Yet the dominance of a conservative approach to educational disciplines prevailed.

Sketching what was happening internationally and nationally on an economic, environmental and educational level has assisted in identifying the milieu for further growth of what was already developing on a local level. This chapter has described the distinctive collective efforts in the establishment of the first two FSCs, Muogamarra and Wirrimbirra—the collegiality, networking, collaboration and political interconnectedness. The establishment of the first two FSCs set the foundation and thirst for the formation of others. The next chapter details the next sequence of FSC establishment.

CHAPTER 5: A RUN ON CENTRES

Once Wirrimbirra and Muogamarra were up and running and proving to be very popular, every region wanted a field studies centre. There was a great flurry of centres being set up—pushed by local communities advocating for them through their local political members and/or the NSW Department of Education. It is worth noting that the first two centres were a joint venture. The Gould League of NSW, other community organisations and the NSW National Parks and Wildlife Service (NPWS) had significant input while the NSW Department of Education supplied a teacher and some equipment.

Non-Viable Primary Schools as Field Studies Centres

The closing down of non-viable small primary schools coincided with extra money from the Federal (Whitlam) Government for state schools. According to Bridger (1997), many of these small communities had invested in the establishment of their local primary school years before—often the community had supplied the school building while the NSW Department of Education supplied the teacher. It is understandable that the community wanted them retained in some meaningful way. It was common for high schools to advocate to have these small schools set up for school excursions. Redundant Cascade Primary School, for instance, became an annex for Dorrigo High School (Bridger 1997). Another example was a principal in the Illawarra having the keys for an abandoned school in the Southern Highlands. In exchange for site maintenance, this deserted school could be used for excursions. In addition to small redundant schools transforming into field studies centres (FSC), there was pressure on the NSW Department of Education for others. This run on FSC will be the focus of this chapter.

To recap, in 1974, Strom was Advisor in Conservation and Haddon the Gould League Education Officer in the NSW Department of Education (Johnston and Tribe 1982; Fox 1979). Additionally, and importantly, Arthur Frost, Staff Inspector (Manual Arts background) and MacDonald, Inspector of Schools (Science background) were the head

office inspectors who played a crucial role (MacPherson 2015; NSW Department of Education 1973a, 1977).[25] Inspectors held positions of power and influence. Frost's position, in particular, seemed to have been significant and powerful enough to effect change and get FSCs established and functioning within the NSW Education system—a staff inspector was a step up from the initial inspector ranks (MacPherson 2015).

> *Yes, there's a whole lot of politics with Arthur Frost too. He was a great one for working the system to help FSCs. He knew how the bureaucracy worked…. He used to drive a V8 Holden Statesman to conferences, which used to make us all laugh.… Arthur used to go to bat in the Department for us. He used to speak for us. If anything were going to happen he'd tell us... we were where he got his credibility from, through coordinating FSCs. So he was very instrumental in keeping us on stream.*
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> AA

It is also likely that Frost, like Strom, had informal connections to others higher up in the chain of command and that some of these people had quite an interest in the progression of Environmental Education (EE), as has been highlighted with the Wyndham link previously.

The next run of centres opened in closed primary schools while Frost and Strom were in head office (NSW Department of Education 1977). According to Welch (2018a, 87), by the 1880s, there were over 100 small provisional schools across rural NSW. Provisional schools were in remote locations in private buildings built by local effort and staffed by itinerant, often unqualified teachers. Provisional schools were unable to maintain the minimum attendance of 25 students. Additionally, Bridger (1997, 92) found that between 1889 and 1903 provisional schools were subsidised. Communities however, had to supply the building and the teacher. Thus, from the 1970s, when the NSW Department of Education started to make these schools redundant, rural communities appealed for their continual benefit to the community in some way. With environmentalism in a diverse array of forms, and thus EE, popular at the time, many closed schools were utilised as FSCs or EE professional development sites. The *Education Gazette*[26] advertised positions for a "teacher-in-charge" at

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[25] Strom, Allen. 1973. A Field Study Centre at Bega: Some Details of the Project Being Operated at Bournda, Near Bega and Tathra: Preliminary. Email June 21, 2018.

[26] The Education Gazette: Inside Education series was first published by the Department of Education to comply with the requirements of the Teaching Services Act 1970 (NSW). It publishes personal and general notices in addition to amendments (NSW Government: State Archives & Records n.d. a).

Bournda and Thalgarrah FSCs in late 1975. Jack Miller and David Kennelly were successful in gaining these positions at Bournda and Thalgarrah respectively, beginning at the start of 1976.

A few of the old guard teachers-in-charge remember being interviewed by MacDonald and Frost, or Frost at least—in some cases the other interviewer was the regional director. Their understanding of environmental issues was queried, and it was impressed upon them that their mission was to have the centres cater for K-12 students, particularly those undertaking HSC subjects.

> *So it was a fairly forward thinking, radical proposition. Radical in that sense of ahead of current practices of the times and so on. And because it didn't exist in the education consciousness in New South Wales, in Australia I suppose… to have proposed establishing these special schools for environmental education probably would not have been successful in its own right.*
>
> KA

The centres were to cater for a broad range of subjects. Although Kennelly recounts being told by Frost not to consider classes below Year 4, he did include younger ages in his endeavour.[27] Miller remembers these inspectors and someone from Wirrimbirra interviewing him in 1975 and felt that Strom was very close to what was happening. Strom and Fox were instrumental in setting up Nadgee Nature Reserve and had a keen interest in the area (Fox 2016; Strom 2017). There was concern about the woodchip industry on the South Coast at the time that Bournda was established. Both Strom and Fox knew Miller, an avid bushwalker and active member of the National Parks Association of NSW. The inspectors and Strom took Miller out to lunch in Sydney after he was successful in gaining the position of Bournda teacher-in-charge. They revealed they thought he could survive the woodchipping situation.

While Thalgarrah and Bournda were the first FSC positions advertised, those for Awabakal, Wambangalang and Dorroughby followed within a year or two. It is not the intention of this study to delve too deeply into what was happening at most of the centres before Departmental

[27] Kennelly, D. n.d. Brief History of FSCs/EECs. Email June 28, 2017.

personnel took up their positions. However, from the information obtained it appears that there was significant, specific, place-based community activity occurring.

Thalgarrah Field Studies Centre

Armidale College of Advanced Education lobbied the NSW Department of Education to open Thalgarrah as a FSC. Thalgarrah was a small, closed one-teacher school that had been vacant for some time. It was on seven acres surrounded by a grazing enterprise. The school was gazetted on the 26 March 1976. The Liberal Minister for Education, Neil Pickard, signing off on it (NSW Department of Education 1976c). It comprised a wooden classroom with a veranda, a small office with a storeroom attached, a weather shed, bubblers/wash shed, and two small toilet blocks, one for each sex.

When Kennelly arrived as teacher-in-charge, the place was empty of chairs, paper and many other school essentials. The district inspector advised him to visit other closed schools in the district to gather supplies in addition to visiting the Dumaresq store, an old closed school where excess school furniture was stored. Functioning schools in the area supplied their surplus chalk, paper and cleaning equipment.

> *Dave saw the educational function of the FSC as engaging students in the natural environment in a manner consistent with the objectives of the curriculum. Dave had a strong interest in matters of the natural environment, the manner in which the environment was used and a strong ethic of resource conservation. His approach was "cross curricular" with activities delivered being derived from all "subject" areas. He also had a keen awareness of the isolation of many schools in the region and worked consistently to attract remote and small schools to TFSC. This outlook towards EE appeared to be commonly held at the time, but of course it evolved over time and the role of the FSC/EEC altered accordingly.*
>
> JK

Bournda Field Studies Centre

In March 1973, the Bega High School Inspect Group brought the need for a local study area to the attention of the Bega-Tathra Conservation Society.[28] The area of focus had been utilised

[28] Bega-Tathra Conservation Society. Letter correspondence, circa 1976. Email June 21, 2018.

by Jim Collins, the science master, for many years (Miller 1976).[29] The Conservation Society requested the NSW Department of Education take an interest in the site becoming a FSC. Establishment was difficult with major issues such as land tenure (1973). The Bournda site was partly reserve for public recreation and partly Crown land. Its recommended inclusion in the Bournda Nature Reserve had been rejected; nevertheless, it was the NSW NPWS who controlled this unused space.[30] The former Jellat Jellat Public School reopened as Bournda FSC in February 1976.[31] A Regional Employment Development and Australian Schools Commission Innovation Project grant funded improvements to the facilities, such as the High Ridge Hut, toilet facilities, Sandy Beach Creek Suspension Bridge, and track upgrades. Community voluntary work kept costs at a minimum. Gazettal of Bournda FSC took place on the 7 May 1976, approved by the newly appointed Labor Education Minister, Eric Bedford (NSW Department of Education 1976b).

When Miller started as teacher-in-charge, the Department of Public Works, who were finishing replacement bridges after the 1971 floods, occupied the closed school. Miller worked out of, and slept in, the weather shed for a few months. Early documentation from Bournda set out the objectives and pedagogy for the centre:

[29] Miller, J. 1976. Bournda Field Studies Centre: The first 100 days. Email June 21, 2018.

[30] Strom, Allen. 1973. A Field Study Centre at Bega: Some Details of the Project Being Operated at Bournda, Near Bega and Tathra: Preliminary. Email June 21, 2018.

[31] Bega-Tathra Conservation Society. Letter correspondence, circa 1976.

> 1. *To foster an awareness of the inter-relationship between humans and their environment, and the consequences of their activities in the environment,*
>
> 2. *To promote a feeling of concern about the quality of human environment,*
>
> 3. *To develop a commitment to the principle of conservation of the environment, and*
>
> 4. *To develop abilities and attitudes which will assist in the solution of human environmental problems.*
>
> *Once the objectives were settled, it seemed that the most likely theme to follow in order to achieve them was a discovery one—hence "discovering the Bournda environment." A program of "discovering ••• " units was designed on topics such as rocks, landforms, streams, coasts, plants, trees and animals.*
>
> *Additional to the Bournda area program, and in response to local area demand, extra material is being prepared on similar lines for units on farms, industries, towns, national parks and nature reserves, land use and maps. These latter units are designed for use, not at Bournda, but within a few kilometres from the Centre.*
>
> (Miller 1976)[32]

Kennelly and Miller formed a great friendship, supporting each other by phone. They were both experiencing the management of these new innovative experiences in remote locations, and their experiences differed markedly from those in metropolitan centres.

Opening of centres happened in quick succession. Awabakal and Wambangalang opened later in the same year as Bournda and Thalgarrah, 1976. Once more, the events that led to their establishment were unique.

Awabakal Field Studies Centre

There was a major local community political push to get the Awabakal FSC and Nature Reserve founded in the mid 1970s. The Awabakal Association for EE, established for this purpose, had an initial meeting in 1975 instigated by Mrs Betty Roberts, Inspector of Schools (McDonald 2015; Webb 1980). Field days progressed a detailed documentation of the natural

[32] Miller, J. 1976. Bournda Field Studies Centre: The first 100 days.

history with many teachers supporting these events (Webb 1980). A temporary adviser in EE, teacher Mr Boris Sokoloff, was seconded by the NSW Department of Education at the end of 1975, and prepared resources and encouraged site usage as a field study area. The Association was particularly active and in-servicing, working bees and trail days occurred on the site.[33] In March 1976, the opportunity was taken to repurpose a temporary demountable building, associated with renovations at Dudley Public School, as a FSC. The demountable was moved to a block owned by the NSW Department of Education between the school and the proposed nature reserve.

At the time, the Awabakal Association for EE was in a conflict with the proponents of sand mining at Dudley Bluff. The mine was subsequently approved with stringent conditions (Webb 1980). A teacher-in-charge position was advertised in the Education Gazette on 3 August 1976, and Gilligan, a qualified science teacher with majors in geography and geology, commenced in the role in October. The Centre gazettal took place on 13 August 1976 (NSW Department of Education 1976a).[34] In November, the government dedicated approximately 121 hectares of land encompassing intertidal rock platforms, coastal cliffs, clifftop sand dunes and a permanent fresh water lagoon as a nature reserve (NSW Legislative Assembly 1976; Webb 1980). Richard Face, the local Labor member, had pressed Parliament for these resources. The Reserve and FSC officially opened in 1978.[35] Gillian wrote many resources, and others such as McDonald and Munro drafted material for the site. Barbecue facilities were built by Gilligan's brother to provide a welcoming experience, with the local butcher and shop assisting with supplies so that a not-for-profit lunch could be provided.

A broader view of EE, including studies of the effect of human activity on the environment, was being advanced at Awabakal from as early as 1976 (Webb 1980). In time, Gilligan found

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[33] McDonald noted the decline of community participation in the Association and the environmental movement from the late 1970s (Webb 1980).

[34] These events indicate a significant amount of activity taking place within the Hunter Region, NSW Department of Education for these developments to take place.

[35] McDonald. 1978. Humble Beginnings, Historic Photo. [Photograph]. Email March 18, 2017.

that while the site was biogeographically significant, the range of study sites was somewhat limiting and isolated. He increasingly found the need to organise visits to other locations such as Blackbutt Reserve, Kooragang Island, Seaham Swamp (Gilligan had completed a Masters degree on the biogeography of the swamp) and areas closer to the visiting schools.

Wambangalang Field Studies Centre

This centre was setup as a residential FSC in the Central West, about half an hour's drive from Dubbo. It is on a piece of the old stock reserve around wheat and sheep farming land with pine and eucalyptus woodland (Fox 2016). The old closed school site developed into a FSC and other old school buildings from local closed schools were added to the complex. Once more, local interest in utilising redundant schools was decisive. Simon Leslie was the first teacher-in-charge at Wambangalang. Dufty, a teacher with an earth science degree and two years' experience as a seasonal part-time ranger with the NSW NPWS, was employed as the assistant teacher from 1976-1980. While at Wambangalang, Dufty started the Association for Environmental Education Country Region (AEE NSW), using the basic forms of communication available at the time.

> *Well before fax or… and certainly miles before email. So, I did this all by, you know, by sending out just a little newsletter. When I say sending out—snail mail. You know, phoning people, having little meetings. And a lot of the people that came on board were farmers. So that was a major move, I think, in the right direction. But this is a long, long time before we had Landcare and probably well before a sustainable farming approach.*
>
> ND

Importantly, a "Friends of Wambangalang" group was set up to inform and grow acceptance in the local farming community. Community/centre relationships were critical in progressing the centre, with the locals providing much needed support. The travelling stock reserve across the road was used for field studies and the local farming community expanded the diversity of learning experiences by allowing fieldwork on their properties. They also contributed their time and expertise in farming practices. An environment developed which nurtured the exchange of ideas and work. The word "environment" had negative connotations in pre-Landcare days, and both Leslie and Dufty initially talked of the centre as an outdoor

education facility—teaching EE under the guise of outdoor education until, over time, the community saw merit in its work and the centre gained its trust and support. Other staff cheekily dubbed Wambangalang the "kangaroo shooting company" as they were in locations where "environment" was more acceptable, if not in vogue. Wambangalang FSC developed what became known as the Wambangalang Scheme, an environmental program that was completed at the centre but involved both pre and post schoolwork. FSC staff would visit the schools to inform staff and their classes about their pending FSC experience and deliver the pre-visit activities/curriculum. Learning started off with being "in" the environment to learn "about" the environment with education "for" the environment integrated when understanding and trust developed—it was always the aim. Many of the school groups stayed for five days. Often students were from isolated areas and learning the skills of socialising was arguably as important to them as the formal elements of education. For School of the Air students, a visit was their first introduction to many normalised school activities such as forming a line. Conversely, inner city students, many from culturally and linguistically diverse backgrounds, were often astonished by the vastness of the rural environment. This experiential learning was extremely valuable.

In addition to the natural woodland, educational resources included Aboriginal heritage, farms, soil conservation projects, and wildlife (Fox 2016). Bob Newton, the next teacher-in-charge, developed the site extensively, adding aviaries and ponds. The centre had a special NSW NPWS licence to hold endangered species so that visitors could learn to identify the species and thus assist in their protection. Providing accommodation enabled Wambangalang to be a role model for sustainable living including gardening and recycling. An informative newsletter provided environmental news of state, national and global interest, regional school networking, interesting activities, nature games for students, and resource guides.

Dorroughby Field Studies Centre

Dorroughby was a small closed primary school on nearly a hectare of land about half an hour from Lismore, a socioeconomically depressed region at the time. It became the site for a FSC application as efforts to put the site to good use were limited and needed support. Ken Hoy,

an inspector of schools in the region, was keen to see redundant schools put to good use.[36] Ian Clements, a social science teacher with a strong interest in educating and participating in rainforest regeneration, became the first teacher-in-charge at Dorroughby. His background included coordinating field studies within his high school and he had also participated in an EE in-service workshop at Cascade Public School. The gazettal of Dorroughby FSC took place on 21 January 1977.

There was a six-month timeframe to get Dorroughby FSC setup. The site was overgrown with lantana and other weeds and Clements brought his tractor up from his farm four kilometres away to clear the site, (eventually the centre could afford to buy its own equipment). Inadvertently, observing their new long-haired neighbour sweating it out and putting his back into getting the centre up and running garnered respect from the generally friendly, conservative farming community. Clements' action in caring for and working the land went a long way to breaking down the barriers and developing good relationships for the centre, particularly with one farming family whose property surrounded the centre—access to property was essential.

There was an old chamferboard (a form of weatherboarding/cladding) classroom divided into two, and a toilet block some distance from a weather shed. Additionally, a cooking facility installation made the classic Federation-style formal residence functional for large groups. Regional funding provided for a shower building and parent/teacher accommodation. The student dormitory housed 40 bunks, similar to backpacker accommodation. One of the first Public Works pole constructions saw a simple outdoor eating area but the process of sourcing supplies from the NSW Department of Education stores via a catalogue and ordering system was laborious. Once the site was up and running, Clements insisted on manageable groups of 35 (30-32 students plus accompanying teachers and parents). The location was quite isolated, but rainforest regeneration and some fruit trees eventually beautified the site.

Many field excursions were developed to areas that were accessible via foot. For instance, there was walk up to Rocky Creek Dam and into the Gibbergunyah Reserve and return—a

[36] McDonald. Email February 5, 2017.

day trip. Other experiences included visiting local macadamia, tropical fruit and dairy farms. Importantly, in an effort to branch out, Clements gained a bus licence and did a deal with the local bus company—creating business for them and securing a low hire rate for the centre. In addition to enabling excursions to places such as Mount Warning, the bus transported students to and from Dorroughby when costs would otherwise have been prohibitive. There were numerous accounts of the residential component providing a positive environment for student development and relationship building.

Bruce Foott, childhood friend of Clements, brought his Year 11 Environmental Studies class as one of the first visiting groups to Dorroughby. They spent a week studying pristine rainforest, recently protected forestry, and alternative lifestyles. Clements built good connections for sustainability and was heavily involved in revegetating rainforest both on site and within the region.

During Clements' first year or two at Dorroughby, a logging dispute developed at Terania Creek, less than half an hour's drive from Dorroughby FSC. Forestry logging plans became public knowledge in 1975 and direct action began about 1979 (Bible 2009). This significant regional event had national consequences. The end of the confrontation came with the remaining forest being gazetted as national park by the Wran Government, and becoming the "Nightcap National Park" in 1983 under the Forestry Revocation and National Park Reservation Act 1983 [NSW] (Adams 2016).

Isolated on the far North Coast, a network of like-minded professionals developed between Clements, a few foresters, and NSW NPWS rangers. Len Webb, a rainforest ecologist at Griffith University, who played a role in influencing Neville Wran's Terania Creek decision, mentored Clements and Rob Coinman, a forestry ranger, who is now a rainforest ecologist himself. Clements said of Len Webb:

> *And he grabbed Rob and I and he said, "I understand you can't be at the coalface over there in Terania but you've got a bigger role to play. Come along and walk with me in the rainforest."*
>
> IC

Len Webb understood the importance of an informed citizenry and opened a large and influential circle to both Clements and Coinman.

> *He was just really a subversive underneath it all and his subversive message to us is (was) that we should expand the awareness and the importance of rainforest and all ecosystems and that we should be unrelenting in promulgating that from whatever vantage point.*
>
> IC

There were examples of the mingling of social classes generally in the 1970s. Academics, working class, for example C.I.G. workers, and foresters, all interacted in the public sphere—the pub. There was an understanding that entailed a certain larrikinism that radiated empathy… an understanding of the environment within and across the class structures.

Developing Centres, Curriculum, Pedagogy and Networks

Developing Confidence and Resilience in Risky Situations: Managing Risk

Teachers-in-charge had a great responsibility in taking students unknown to them into the environment, sometimes camping (Fox 2016). Teachers-in-charge were ingenious and innovative in developing strategies to minimise risk in these situations, often in isolated places, without limiting the experience for students. It was important to know the students in a potentially life-threatening situation with minimal staff. Following are some examples of this gleaned from the interviews.

Teachers-in-charge had autonomy in developing strategies that were fit for purpose—and they worked. Further, they were trusted to be responsible with their charges. Systems were in place to ensure that everyone was accounted for and that everyone understood the risks. The ability to take risks and build confidence and resilience, and to achieve by doing, was highly valued.

> *I didn't ever behave like I was shackled by insurance companies and in the whole 20-year period, whatever it is, under my management there was never a serious accident. There was never even… there was hardly a minor accident. … but I wouldn't compromise. … And I'd give them a system of pairing. And a buddy system. Where I could call out at any time … I showed them where they could jump off and take a risk. But, they had a protocol to follow to make it safe. … And so, that aspect, I think was significant. Because there was going to be nothing that would destroy the ability to do it.*
>
> GA

Strategies were developed to ensure the most effective learning, and seamless bushwalks took place with students given the opportunity to be the teacher and impart knowledge to their peers. Students became the expert in certain aspects of the bushwalk, learning the role of an element(s) of the environment, utilising all their senses to understand it, and then reinforcing that knowledge by teaching it to their peers. Meanwhile, the walk progressed without the stop/start and bottleneck congestion of attempting to teach too many students in a confined narrow space.

> *When you're on a long trail, where I was very often, with a bunch of people in a long strung out line, so to speak, then you can't stop and take advantage of the features that are going to direct the group to the focus of their study. Because you've got to wait and constantly gather them together and sometimes there isn't a big enough space. So I developed a technique where I would use three of the participants. And I would get them to point out—physically point out—touch, smell, a feature and then down the track, I'd leave another three and they would add information to that feature, and then another three down the track that would kick that into the overall system that we were walking through. And that was not only a great disciplinary technique; it was a great teaching technique because even though they're getting the snippets of knowledge from me, they're playing a role in explaining that feature, or putting that feature into a context of understanding of the overall system that you're wandering around in. And so you learn to observe key things in an actual theme that are going to illustrate a concept and so then you've got to get the individual to immerse themselves in that feature or have some sort of interaction with it. And at the time you know your concern is not that they're content tested at the end of it, is can they remember a Flindersia australius, but are they aware of the role that fungi are playing, or how the soil is being [affected] or whatever…. cycles.*
>
> GA

Teachers-in-charge had free rein and often produced innovative programs (Fox 2016). The following excerpt illustrates the importance of building trust and confidence in risky, unfamiliar spaces and one technique used to build trust and connection with fellow students.

> *You know, I used to do these activities when you go in the bush you've got to have a buddy and you've got to have… "It's not about just you. It's about us all getting out of the bush. And here's the dangers we could confront and so we're all going to work together. And that is going to save us." And so as part of that introduction, I would do some more or less personal development activities. But I would do one activity… because you had to develop trust right. So everybody would line up and they would put their hand on the shoulders of the person in front and I'd show them how to do this massage right. Loosen up the shoulders, you know, bang, bang, bang, down the spine, a bit of a rub above the backside and you know… like a proper massage. And then they'd all be doing it to each other and then they'd turn around and reciprocate, do it to the person who'd done them. You know the kids would all have fun, it was an icebreaker but it also got the message across, "Hey you know. We're in this together."*
>
> GA

Other innovations will be elaborated on in further chapters.

Collaboration between the centres was intense in the early days of establishment. Centres innately wanted to learn and share their learning and practice in an effort to further FSC/EE.[37]

> *We were encouraged to work together in those early times and in the first two years I made visits to Wirrimbirra, Muogamarra, Bournda and Wambangalang, all by public transport—usually a rail warrant. I even visited in my holidays the site of the soon to be opened Dorroughby FSC.*
>
> DK

Field Studies Centre Educator Conferences

The FSC educator conferences, initiated in 1976 at Wirrimbirra, were extremely important in providing support and professional development to centre staff. This was the first group of environmentalists coming together on behalf of the state government. This looks somewhat radical these days, which is ironic given that development would have had a significantly greater detrimental impact were it not for EE/education for sustainability (EfS) and environmentalism.

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[37] Exchange of ideas and practice with the FSCs in QLD started from the early days. One QLD environmental educator remembers the hospitality of David Tribe and Allen Strom when he travelled to NSW to investigate "How does one do this thing called environmental ed?" in the early 1980s. This exchange continues to this day and includes conference attendance.

Education was not the focus of the NSW NPWS who had an emphasis on "interpretation." Nor was it the focus of the Forestry Commission, who also had an interest in EE. There was no Environmental Protection Authority. It was a new frontier on the periphery and those involved were "outcasts" in many ways, both within the NSW Department of Education, and the communities in which they worked and lived. There was no template for how to setup and run these centres with the new teachers-in-charge largely given the keys and left to their own devices. The professional and social connection, and collaboration were crucial in developing the centres.

> *The teachers-in-charge got together at Wirrimbirra and basically just compared notes… I was just soaking up all that I could to try and get some clues about how to go… So when we came back after that and got into the start of the 1977 school year then basically I was sort of operational and had a bit more confidence about how to go about things.*
>
> EA

The conferences influenced EE greatly because people could share their learnings. The second conference at Wambangalang saw the first world FSC volleyball championship take place. Only male teachers-in-charge attended, and a female education consultant who was present noted the gender bias and started to assist in neutralising gendered language. The bias was possibly more a sign of the times than a characteristic of the teacher-in-charge community. However, the conditions they found themselves in and the camaraderie of their like-minded missions did go a long way to developing strong bonds between the early FSC staff. The consultant saw them as knockabouts—hippies, with one a lone "rugger bugger" (a rugby union fanatic).

> *So it was challenging but very exciting times, and certainly, I think for all that we actually bonded well, and also appreciated the different techniques that we had to use tailored for the different situations that we were in.*
>
> FA

Kennelly noted that many of the issues raised at the early conferences continued to resonate into the future—promotion and publicity, policy issues for the operation of the centres, and EE as a subject and its placement within the curriculum.[38]

A Snapshot of Developments within Environmental Education

Strom provided a large amount of field support—guidance, open communication and personal demonstrations. Strom retired in 1977 (NSW Department of Education 1977; Fox 2016) and Haddon became the new Curriculum Consultant for EE, continuing some of the functions of Strom's Advisor in Conservation position (Curriculum Development Centre 1978a), working in the curriculum development section of head office. In addition to liaising with teachers-in-charge of FSCs, Haddon's position description included working with teachers and other consultants in progressing environmental programs specific to schools and their districts. In the late 1970s, Haddon was seconded on a one-fifth time basis to be the State Liaison Officer for the Curriculum Development Centre EE project.[39] Tribe took on Haddon's old position as Education Officer, Gould League of NSW (1977). There was a great deal of in-servicing and a Gould League of NSW weekly television segment on the *Super Flying Fun Show* that aired for seven and a half years (Johnston and Tribe 1982)[40] , along with lectures, demonstrations and assistance in developing EE programs and resource materials within schools.

Noteworthy were the development and use of school grounds for EE, and the sensory environmental awareness activities that Tribe had adopted from the US after a Teachers Service Fellowship to the US to investigate their system in 1976. Lectures and workshops based on these adopted programs and activities supported FSC and in-servicing, and

[38] Kennelly, D. n.d. Brief History of FSCs/EECs. Email June 28, 2017.

[39] In addition to Haddon being the NSW CDC network representative, Frost and Meyer had input into the CDC study and recommendations.

[40] This practice was started by David Tribe before he took on the position of Gould League Education Officer and then extended to further television coverage by Haddon.

professional development often happened at the centres. The Gould League of NSW coordinator network was established due to the demand to organise EE activities (Johnston and Tribe 1982). Coordinators were college/university lecturers, FSC teachers, other school staff and the general public, and some of the participants went on to become FSC teachers-in-charge.

The Gould League had convened an annual national conference for those interested in EE by the mid 1970s. Its purpose was to coordinate activities, networks and communication and to discuss problems and needs in an effort to progress EE. In 1977, the conference focus was FSCs with topics covering the worth of FSC, objectives and strategies, teaching strategies, the scope and development of programs, factors to consider in centre establishment, evaluation of FSCs in relation to EE, alternatives to FSCs, and in-service training for FSC staff. Queensland convened the conference, as they also had been pioneering centres.[41]

A host of EE "godparents" attended including Joan Webb, Haddon, Tribe and Henry Bingham, from NSW. Frost attended for the NSW Department of Education (Gould League 1977). Interestingly, Tribe was disseminating information about some of the innovative programs and activities he had learnt about while on his US Teaching Service Fellowship trip. Many teachers-in-charge enthusiastically embraced these programs and activities and applied them to the centres.

> *Advocated by two people who are influential here, partly through the movement … through the activity of David Tribe, were Bill Stapp and Joseph Cornell. And Bill Stapp was more… he didn't call his stuff outdoor education, he may have been one of the first people to call it environmental education, I'm not sure. But Joseph Cornell did the outdoor education learning. Learning by sensory interactions, so tree hugging and all that sort of stuff which David Tribe basically taught me about. And he, David Tribe, was very instrumental in promoting all of that through the Gould League he was involved with at the time.*
>
> KA

[41] Queensland was the only state similar to NSW in providing 25 EECs within their education department. Establishment of the centres in Queensland seems to have had greater systemic support (Webb 1980) from Education as well as from other departments. This study set out to concentrate on one bureaucracy. While Queensland Centres, a mix of outdoor centres and environmental education centres, run parallel to those in NSW they are not the focus of this study. Note however, the exchange of EE form and function developed between NSW and Queensland early in the establishment of EE.

Noted at the conference was:

> *That teachers are sick to the teeth of being told both in written and verbal form, what they should or might do. Many have said, "Don't tell us what to do—show us." While field study centres continue to demonstrate practical approaches and strategies performed by people who are actually working in the real situation confronted by similar problems, they will not lack for customers.*
>
> (Williams 1977, 2)

Additionally, and interestingly, considering the dearth of research about evaluation within these centres over the years, it was noted that effective evaluation of the centres was lacking:

> *On the surface it seems that the enthusiasm which generates itself in the activities of developing Field Study Centres comes from teachers who have an eagerness for the task of enthusing students in the outdoors. These people seem to experience a temporal pressure that does not allow them to engage in the seemingly complicated task of evaluating what they are doing. The task of evaluation is therefore largely left to various members of the academia who are in a lesser position to reflect in their evaluation the affinity for the process which is shared by the practitioners. Either the teachers are going to have to take themselves apart from their commitment to working with students in order to review their activities with some perspective and feeling for the subject area, or else those people concerned in producing research papers which feature the evaluative process in relation to outdoor studies are going to have to devote more time to developing better first-hand knowledge of the subject they set out to research. The situation at present is that piecemeal attempts are made by the researchers through collaboration with the practitioners to develop a "precis concept" of the operation they intend to evaluate.*
>
> (Foreman 1977, 15)

Illustrated in this text is the broad and illusive categorisation of education within the centres. Additionally, it is highly unlikely that NSW teachers-in-charge had the time to undertake evaluative practice given their staffing circumstances, as will become apparent throughout this narrative. This text does, however, demonstrate the consideration of the nature of evaluation from the inception of FSCs.

Changes at Muogamarra Field Studies Centre

In 1977 Barbara Hamilton was disappointed to be informed that she was to be replaced in the position of teacher-in-charge at Muogamarra (Woolley 2016). Several factors may have led to this outcome, and these have been inferred from the evidence at hand. Strom retired in

1977 and the NSW Department of Education desired the centres to develop fieldwork in line with the public, formal, education curriculum, particularly for the senior years. This aspiration may have become more pressing without Strom there to champion the EE cause. Although K-12 were targeted, visitation at Muogamarra was mostly upper primary classes. Further, teachers were invited to develop their own program if the programs on hand did not suit (Morgan 1972). Perhaps after a few years of the Muogamarra pilot, they found that teachers did not have the knowledge base or capacity to develop their own fieldwork and there may have been a perceived need for further development in this area. The NSW Department of Education may have wanted someone who was more familiar with the state-based curriculum and the functioning of the state system. Foott had been teaching an environmental studies elective at Galston High School—a rarity in the 1970s. Hamilton was given a position at Stewart House and taught at several schools before resigning in 1979 (Woolley 2016). In recognition and appreciation of her work in teaching at Muogamarra, an insect, Peripsocus hamiltonae sp.n., was named after her (Smithers 1977).

When Foott took over, he concentrated on targeting K-12 through providing fieldwork opportunities that aligned with the syllabi, particularly with high school geography and science where the main fieldwork focus lay. This had been one of the directives in his job interview with Frost and Colin MacDonald. Additionally, history resources, including pre and post-resources, were developed to align Muogamarra's rich Aboriginal and early European settlement past with the history syllabus. With the first convict road going through Muogamarra, unfortunately straight over one of the Aboriginal engravings, there were many contact sites to explore. Historical excursions were developed where students, given clues, and through observation, had to build a picture of what had occurred on the site—enquiry, hands-on learning.

Royal National Park Field Studies Centre

Royal National Park FSC opened in 1978 as a shared facility. Wendy Goldstein, an environmental educator with the NSW NPWS, lobbied strongly for its establishment. Gary Schoer, a science teacher from Jannali Boys High School, was the first teacher-in-charge

operating out of a small office in the NSW NPWS main office—down the hill toward the Hacking River in the Park. The Superintendent made him feel unwelcome. Apparently, the centre establishment was a higher-level decision made without much consultation or consensus. There were no clerical or general staff for a short time.

To coincide with the 1979 Royal National Park Centenary, historical documentation was showcased in a history professional development seminar. Staff used the Centenary as a stimulus to get schools involved. Publicity, resource development and in-servicing were Schoer's initial priorities.

> *All of us I think at the time used the mantra doing education "in the environment," about the environment," but to be true environmental education, of which there was no real policy at the time, it was education "for the environment." And sometimes we added, well I added the extra one, education "from the environment" like if you wanted to estimate the height of a tall thing, using trigonometry or whatever, we would use a tree rather than a roof.*
>
> GS

Before long, the centre moved to the old dancehall next to the Hacking River where there was space for equipment, but this resulted in diminished collegiality and professional development with the NSW NPWS staff and Schoer missed it. Nevertheless, he tapped into those interested in EE and the NSW NPWS resources. Harold Senior, one of the first rangers at the Park, came to give talks to students. Initially, work was concentrated on the park. Schoer conducted many major staff development activities and developed resources. The government printer was well utilised. Schoer describes some of his teaching memories as follows:

> *So, where we could we pushed the "for" but I think the best thing we did was sensitising students to the environment. And even making teachers feel relaxed. I really did hone the skills of being a quality teacher in those days. I remember being on a bus with kids who were about six heading to Wattamolla or somewhere to the beach. And anyway, the fog had come down and it was a bit drizzly and a bit cold and terribly misty up on the plateau down there. And the teachers are starting to grumble saying, "Oh, this is going to be a great day." And so just before the bus stopped… I used to occasionally go on the buses with them… I said, "Look, we're really lucky. We're going to go to a lookout. But," I said, "You're not going to see many things from the lookout but guess what. The thing you are going to see is real cloud… You're going to be in the middle of real cloud." And as the kids were getting off, they were looking around. Holding each other's little hands and they're shaking their heads and they're saying, "Oh, real cloud!" I thought it was absolutely fantastic. So the idea of… Yeah, teachable moments is another common phrase that we all used to use. An eagle flies overhead. Right oh, what do you do? "Down on your backs. Look up. We're so lucky. We haven't seen an eagle for two weeks. Oh look at this eagle."*
>
> GS

Over the years Schoer extended his work into teaching "on-school"—utilising the school grounds.

Webb's 1989 study noted that there was open communication between rangers and FSC staff and that the centre was restricted to four days a week during school terms. Due to high demand, it was only available for public schools. Technical and Further Education (TAFE), Guides and church groups used the centre, but generally there was a policy to exclude weekend and school holiday use (Webb 1989). Webb observed the programs having an ecological emphasis with the promotion of awareness, responsibility, and management of the national park.

Early Field Studies Centre Comparison and Critique

Comparing the FSCs with some within the US after a scholarship funded trip in 1978, Webb noted less state government and community support for those in NSW, as compared to the nature centres of Iowa, in addition to the insularity of those in NSW given their general availability to formal education only. She also noted the support for EE in the US given the 1970 EE Act (Webb 1979). Dorothy Pearson, reflecting on her study encompassing over 500 FSCs from around the world, stated that the connection between the cognitive and affective was often missing, yet she talked about being excited by some of the learning within centres

in NSW, QLD, SA and the ACT (Pearson 1979). She stressed the importance of hands-on direct experience that marries the cognitive and affective. Furthermore, in conclusion she stated that staff personality was of the utmost importance.

One of the early teachers-in-charge talked about mounting frustration at the seemingly superficial nature of some of the field studies lessons.

> *The other frustration I was feeling by about then was a frustration with the fact that we were only managing to achieve what I regarded as a fairly superficial level of awareness raising. And yes, you gave people an experience of using their senses and learning something about the natural world or the Aboriginal world or history, but it was pretty superficial rather than really engaging them with their interaction with the environment in a more sort of comprehensive and in-depth analysis. Now I tried to deal with that a bit by preparing materials for teachers to do things in their local school... what we struggled to do was to translate that into something that had more depth.*
>
> EA

The difficulty in recruiting visiting teachers to take EE into their schools was also a source of disappointment.

> *Whilst I think we can give ourselves a couple of ticks for awareness raising and experiential memorable experiences for students, the extent to which we were able to empower teachers so that you got a multiplier effect on that stuff was pretty limited in my experience. Now maybe some of the other field study centres had more success.*
>
> EA

Nevertheless, awareness and skills development were an important part of the EE process (Webb 1980). From early on, teachers-in-charge were encouraging schoolteachers to be involved and were increasingly exasperated by the difficulty getting classroom teachers to participate. Teachers-in-charge conducted pre and post-activities to ensure learning connected to substantial intellectual quality—so the experience included both understanding and engaging with the environment and connecting with the curriculum on a deeper level.

There is evidence of visits to schools to prepare teachers and students for their impending experience. This assisted the FSC educator in connecting with the class—getting an understanding of class and individual student requirements and dispositions. Some school visit tactics had novel hooks.

> *And so if you were with a group and you needed to distract their teacher from them, I think Bruce taught me this, I'd carry a few things and the one that stands out, you've seen it a dozen times, was the box with the mirror in it and the big label on the box, "The world's most dangerous animal."*
>
> *AR: Oh yeah, yeah.*
>
> *GA: So you'd use that to initiate some animation in the kid's room. You said, "Look you know, if you sit there quiet while I talk to… I'll show you what this animal is."*
>
> *GA: And of course they'd wet themselves till it happened but then when you showed them that would immediately—they'd burst into comments, which would reinforce the idea mainly that yeah, we're wreaking the place. And so you had a bit of an opportunity to see what level of animation your group was going to have, what your management issues were going to be in the field.*
>
> GA

There is also evidence of excellent progress in covering the Department of Education's field studies outcomes. While the following extract is from a teacher-in-charge and thus is a public representation of success from within, it also demonstrates that personnel are clearly comfortable in proactively supporting the agenda.

> *There is no doubt in my mind that Longneck Lagoon F. S.C is meeting these aims by enabling children to gain first-hand experience in a natural environment developing field skills in investigating and problem solving.*
>
> WG, 1978, letter to the Director General, Metropolitan West, 12 December[42]

Longneck Lagoon Field Studies Centre

Longneck Lagoon, a popular bird-watching haunt on the road between Pitt Town and Cattai, near Windsor on the Hawkesbury floodplain, opened as a FSC in 1977 (NSW Department of Education 1972a). The Lagoon and surrounds encompassing approximately 150 acres was a Gould League of NSW project and by 1972 had been reserved for fauna and flora. The Long Neck Lagoon Trust had been set up to steer the management of the project with the intention

[42] Giblin, Warwick. December 12, 1978. "Letter to the Director General", Metropolitan West, NSW Department of Education. Mail May 2017.

of opening a FSC (NSW Department of Education 1972a). Kevin Rozzoli, the Local Member for Hawkesbury, was on the Trust. In 1974, the League were in the process of fencing the site when they learnt the project was under threat from the proposed Sydney to Newcastle natural gas pipeline which was due to run through the centre and across the Lagoon (NSW Department of Education 1974). The League pressed ahead, completing the fencing, building a teaching facility, revegetating, and building an access road. It provided environmental lessons and activities at the facility and staffed the centre with a Gould League of NSW senior education officer, Haddon, and latter, Tribe. They taught two days a week at Longneck Lagoon FSC until the NSW Department of Education provided a teacher-in-charge and assisting teacher in April 1978.

Setup of the facility was a little more extensive and laborious with mud deposited from the Easter 1978 floods having to be scraped off the walls. Only the building existed so sourcing and setting up the centre with essential equipment was the initial priority along with developing resources. As with all the centres, publicity was important. Warwick Giblin, teacher-in-charge, and David Bowden, assisting teacher, spent a lot of time publicising the centre and its services which included talking to various organisations. There was also a lot of teacher in-servicing.

One early debacle was the felling of nearly all the trees along a 24 metre rather than the agreed 20 metre width for the gas pipeline easement. The National Trust claimed that none of the necessary guidelines were followed ("Pipeline cuts swathe through Longneck" 1980). Advocacy from the centre, the NSW Department of Education, and the NSW Minister for Planning and Environment,[43] Eric Bedford, and a great deal of publicity, saw erosion control measures put into place and rehabilitation of the site (NSW Government 1980).[44]

Due to its wetland bird habitat status, Longneck Lagoon had strong links with the Australian Museum, the Royal Botanic Gardens, and a range of other organisations and researchers.

[43] NSW Government. 1980. Letter from the Minister for Planning and Environment to the Director of the National Trust of Australia, August 31, 1980. Mail May 2017.

[44] Note Bedford had just moved into this ministerial role after being Education Minister.

Dufty continued the ties with the birding community when he became teacher-in-charge in 1987. Academic researchers involved with the site included Geoff Sainty and Surrey Jacobs.

Brewongle Field Studies Centre

In 1978, Giblin became the administrator of the Brewongle FSC, Aboriginal for "camping place" (Giblin 1978), another redundant school some 26 kilometres away from Longneck lagoon. The centre was a venue for students to conduct field work associated with the school curriculum and was the only centre developed to cater for students with disabilities, featuring accessible paths, buildings and shower/toilet facilities (Webb 1980). Originally the closed Sackville North School, a heritage sandstone building on the Hawkesbury River, the school had been upgraded with a kitchen, showers and accommodation and rebadged a camp. Both the Metropolitan West Region and the St George Region of the NSW Department of Education had input into the centre with the St George Region taking up 50% of the patronage. A report had advised against the addition of Brewongle as a FSC due to its close proximity to Longneck but it was a very different style of student experience, had strong community backing and was reportedly favoured by one of the local directors. There was a strong outdoor education element to the Brewongle camp with some environmental education needed to get those involved on the EE agenda. The school was renamed Brewongle FSC in 1978 but was not gazetted until 1979. In 1978, there was little time for Longneck staff to do anything other than facilitate the Brewongle experience with teachers resourced to undertake the experience and students oriented to the site. However, in 1979, Bowden transferred to Brewongle four days a week and in 1980, he became the teacher-in-charge of the Brewongle facility. Upgrading of Brewongle included A-framed sleeping shelters. During the upgrade Bowen and his clerical assistant worked out of Longneck, moving to Brewongle in late 1979, early 1980.[45]

In the late 1900s-early 2000s, sustainability was integrated into the Brewongle programs.

[45] Heinrich, J. 2006. The Beginning of Brewongle Field Studies Centre. Email June 28, 2017.

> *Around this time at the Environmental Education Centre I developed a sustainable agricultural program which included excursions to farms that implemented sustainable management practices. So that sustainability thread started being embedded into the programs at Brewongle. I also established a renewable energy program. Now that's another… the renewable energy program was the first one in Australia. So that was very exciting. We had a solar tracker put in the grounds of the Centre.*
>
> JD

Jenny Dibley, teacher-in-charge at the time, went onto work in the EE Unit preparing the policy implementation document before moving to the Federal Government to work with the Sustainable Schools project.

Developing Centres, Curriculum, Pedagogy and Networks Continued

Progressing Environmental Education Guidelines and Centre Policy

It took some time for policies to be developed for the establishment and functioning of EE and FSCs, and the centres played an essential role in this. The Education Department's centralised Human Resources unit determined regional staffing levels while staffing allocation was at the discretion of the regional director. Professional direction was from the central curriculum branch while administration was regional (Wilson 1979). The *ad hoc* establishment of the centres (Webb 1980) resulted in a lack of guidelines on how FSCs should operate. To this end centre staff started to document centre structure and function at the Longneck Lagoon/Brewongle FSC staff get-together in September 1979 (Webb 1980).[46] It included a rationale, role description, structure of the centres, training of personnel, mode of operation and administration.

[46] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979. It is the first written evidence of EE and centre guideline development uncovered within this investigation.

RATIONALE

Environmental education is that education which develops an awareness of the environment, emphasising both the human and natural elements, and of the relationships between these phenomena. Environmental education is concerned with the development of knowledge, skills and attitudes so that an awareness and an understanding can be reached concerning the finite, nature of resources and the role played by society in the use of these resources.

The ultimate goal of environmental education is for people to develop an awareness of their environment that will lead to a personal sense of involvement and eventually to the shaping of an environmental ethic to guide each person's behaviour.

Directly concerned with the quality of life, environmental education cannot be considered as a single subject, but rather as a synthesis of all school disciplines, understandings and skills.

The Department of Education Field Studies Centres in N.S.W. act as agents of reference for schools on environmental education. These regionally based Centres have been established in response to a desire by various groups within the community for children to be better equipped with the knowledge, skills and attitudes necessary to make decisions on issues concerning environmental quality.

(Webb 1980)[47]

The role of the staff was to:

1. provide support for the implementation of EE whether at the centre, school, or another field location,

2. assist schools in embedding EE in their programs and practice,

3. provide in-service professional development to schools/teachers—to guide teachers to confidently teach EE independently,

4. produce resources, and

5. "promote an active, pupil orientated approach to environmental education, emphasising processes at work within the environment" (Webb 1980).[48]

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[47] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

[48] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

The structure of FSC highlighted the similarities and differences within centres. The varying locations, accommodation facilities (residential/day visit), staffing levels, degree of community involvement and regional support constituted the diverse nature of the centres. In clarifying the unique teaching role, the document states:

> *By its very nature, this occupation requires, to varying degrees, that staff fulfil a number of roles. These include education (to communicate to most age groups in many disciplines), administration and organisation. Such abilities should reflect in a positive way, commitment to sound environmental practices. Staff may produce documents to support the objectives of environmental education.*
>
> *Invariably, the Centres interact with a wide range of community interest e.g. local landholders, government agencies and private enterprise. Thus, public relations is an important consideration.*
>
> *In light of this rather unique occupation, personnel are specially selected from interested teachers throughout the state.*
>
> (Field Studies Centres Teachers 1979, 2-3).[49]

The mode of operation emphasised the importance of pre and post-visit development and ensured the active engagement of the visiting teacher, with the centre teacher "complementing" the visiting teacher in an effort to facilitate and encourage confidence in the teaching of EE.[50]

By the end of 1977, the first *Environmental Education Journal* of the NSW Department of Education had promoted FSCs at Wirrimbirra, Muogamarra, Bournda, Wambangalang, Thalgarrah, Awabakal, and Dorroughby. Jindabyne and Bunberry Sidings (within a school) were also on the list. The journal stated that the NSW Department of Education hoped for one centre per region (NSW Department of Education 1977). Showcasing Wirrimbirra, the article classified three centres as residential. In addition to Wirrimbirra it is assumed the others were Wambangalang and Jindabyne with Thalgarrah and Dorroughby still in

[49] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

[50] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

development.[51] Listed in the 1979 *Statement on Departmental Field Studies Centres* were 10 centres of which six provided residential facilities: Wirrimbirra, Dorroughby, Bournda, Wambangalang, Thalgarrah and Brewongle.[52]

Confronted by the anomaly of an entity within the school system that taught but did not have a stable body of students, nor responsibility for the assessment and the day-to-day continuum of school life, FSCs were categorised as "schools for a specific purpose—class four."[53] As many of the centres were old one-teacher primary schools, it must have seemed logical to class centres similarly. "Teacher-in-charge" was the classification given to the specialised teachers within these centres—a small step up from being a teacher but not close to a principal category. Centre staff were responsible to their district inspector and the regional director.

One-Teacher Dilemma: Capping Capacity

Having only a single teacher-in-charge at most of the centres (only Wambangalang had two[54]) made growing the capacity of FSC difficult. There was no lack of potential given that these centres were extremely popular for school excursions. In addition, it was sensible and economical for a school to fill a whole bus, generally about 60 students. Teachers-in-charge at the centres were reliant on the assistance of visiting schoolteachers. In many cases, this was used as a way of initiating teachers into the knowledge and skills necessary to enable confident EE teaching. Each centre handled the situation differently. For example, Bournda often found it necessary to facilitate a few school visits rather than concentrate on one school group at a time so that expected student numbers could be attained; Dorroughby capped student numbers at 35, some just handled the numbers but often noted the difficulty.

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[51] Jindabyne and Bunberry Sidings, via Parkes, were no longer within the FSC listing in 1983 (AEE [NSW]). While they had been mentioned by one or two interviewees, the story behind their inclusion and exclusion is elusive.

[52] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

[53] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

[54] It is presumed that this is because accommodation allowed for two staff members but another factor could be that it was the result of successful lobbying from the region.

> *You know some days I'd take up 60 students that was not only dangerous but very hard to give the students a really good experience.*
>
> AA

It was also problematic for teachers-in-charge to be sick or to attend professional development days.

Without a student population there was no precedent for extra staffing at the centres. In the 1970s, the centres started advocating for an assisting teacher. Later, when it was possible, teachers-in-charge had to create a teaching role and somehow pay for it to justify the cost. Nevertheless, initially, the ceiling of one teaching staff member per FSC was a problem.

> *So if two people wanted to come down on the one bus, the standard thing I would do would be to arrange to meet a person who wasn't going to be with me. And it usually was the person who was the most capable if you like, to come down with me in the bush where we were going to run the excursion and we'd walk it through and show them the exact sites that they could use and tweak any worksheets that we might have been working on, whatever. But then the person I would have with me would be the one who needed my support more than the other. So that's the way I tended to do it.*
>
> HA

Gaining Clerical and General Assistance

The *Statement of Department of Education Field Studies Centres*[55] indicates that all centres had clerical and general assistance, a move that must have taken place between 1978 and 1979 given that there was no assistance for most centres when they began. It was Clements, teacher-in-charge at Dorroughby, who achieved part-time clerical and general assistants for the centres. This was something the North Coast region was proud of even though it did not succeed in gaining funding for a car for the centre. This was an issue, given the large amount of travel the teacher-in-charge was required to do, particularly in a rural location. Teachers-in-charge were doing everything for a while until Clements was motivated to make a submission for a clerical and general assistant. There was already some allocation for a cleaner, but the funding was based on the requirements of non-residential rather than residential facilities—a different battle to the one for assistant.

[55] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979.

> *So I was doing the cleaning, conducting the teaching program, designing the teaching program and I was also doing the grounds work, our mowing and disposing of the waste… But no I thought, "Well no, I haven't got the hours to possibly cover all bases and am I going to allow my resource to be reduced to a servicing function when I'm trained to be an educator."*
>
> IC

After the proposal for assistance for the centres was submitted to the NSW Department of Education, a senior inspector flew up from Sydney to assess Clements' situation and ensure it was legitimate.

> *Because they've got (had) no idea that there are such institutions operating, let alone how they operate.*
>
> IC

The visit enabled "the hierarchy" to get an understanding of centre operation and led to recognition and, importantly, an allocation of ancillary and clerical assistance for the centres. Over the intervening years, their hours were extended a little beyond the original agreement.

The Importance of Good Relationships and Ecocentric Understanding

Individuals within the bureaucracy could make or break EE and the work within the centres. Significant in the treatment of the centres and their staff was the relationship between FSCs and their regional director, in addition to the general understanding of EE and its importance in the development of society within the Departmental structure. Often support would wax and wane depending on those within the regional hierarchy. The link with regional office could be a gateway to support and funding or an obstacle to FSC progress depending on the personalities involved. At times the issues were due to a clash of culture or personality.

> *Yeah, the Regional Director at the time would not let me leave the centre to visit schools as other Teachers–in-Charge did as he thought I was not an appropriate person to represent the region. I was also sent a transfer form after three years because he didn't like the length of my hair. He confirmed this personally when I finally met him.*
>
> AA

In other situations, the problems were associated more with the rigidity of the system and less with understanding regional supervision of the centres. The theme of doing "battle" with the system and some of the personnel looms large within the data.

> *Here was the impediment of just, you know, a difficult bureaucracy to handle, and in some cases I also found my supervisor, which would be a cluster director or inspector of schools, not highly sympathetic to what we were doing, and quite rigid in his or her views. So, you know, I certainly had some battles, strong battles with directors and schools because we were not classed as principals, but were expected to carry out the role of principals.*
>
> FA

Some of the supervising personnel within the NSW Department of Education had no idea how to access such a holistic, cross-curricular area not constrained to a single discipline. Often supervisors were narrowly focused on their speciality with little understanding of the bigger picture.

> *I mean he just had no idea how to assess what I was doing. No clue whatsoever. I mean, he assessed that in the field I was an effective educator but as to achievements on syllabus or curriculum he was flat out getting his head around what I was doing and I'd take him into a room where I had all these worksheets, not that I used them a lot. But I must have had… I don't know… 100 different worksheets that covered various areas and various subject areas various physical areas.*
>
> *AR: You would think he would know where it fits in the syllabus though, wouldn't you?*
>
> *GA: Well no, he wouldn't because any inspector's got a very narrow focus. You know, if they were secondary, they were either English, or History or… and if they were primary well they basically didn't do outdoor education or environmental education in primary schools so what's his yardstick or her yardstick? So, from my point of view in the educational practice, there was a sham accountability but really, there was bugger all.*
>
> GA

Yet, there were also Departmental personnel who supported the centres and worked with them in developing EE and navigating a complicated bureaucracy, exemplified in the following two quotes.

> *He was fantastic, you know. They just treated you like you are a professional and that you were an equal. And that they had experience that they could share with you and help you, and so long as you kept the lines of communication open.*
>
> GA

> *The Regional Director in the North Western region in the 70s was very supportive and a variety of inspectors visited Wambangalang due to it being within their portfolio as a "special school."*
>
> FA

Embargo, Threats to Closure and the Politicisation of EE

By the end of the 1970s, it was clear to the NSW Department of Education that these centres were going to require more resourcing than was initially envisaged.

> *So I suppose another major hurdle was that the Department had to fund these things, and some of the costs were actually much greater I think then what they thought.*
>
> FA

Accordingly, an embargo was placed on centre establishment and development.

> *Growth of existing Centres and the establishment of new ones has been very much restricted this year due to a directive issued by the Policy and Planning Group in the Department. Apparently they are uncertain and, sadly, yet to be convinced of the educational merit of field studies centres.*
>
> (Giblin, W. 1979).[56]

Threat of closure or subsumption within the Department of Sport and Recreation is a theme that runs throughout this history. Sport and Recreation Centres—the National Fitness Camps rebadged—have a very different purpose, distanced from the educational roots of EE. This threat became the hook for one of the most remembered pranks played at a FSC conference. The host teacher-in-charge had convinced a colleague to impersonate an Education Department official outlining the transfer of the centres to Sports and Recreation. The staging of this prank was very authentic and included a PowerPoint presentation outlining the putative transition process. It did catch everyone's attention and ire was mounting until a wry smile was detected on the face of the pranking teacher-in-charge and his cover was blown.

Any politicisation of the EE staff, both on a professional and personal level, was purely for the advancement of EE. While staff were and are a cross-section of the political spectrum, one unifying element was their desire to progress EE. Yet, the bureaucracy, many of those acting for the bureaucracy, and the politicians, were generally unable to distinguish this defining character.

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[56] Giblin, W. June 29, 1979. Letter to Dr Douglas, Professor of Geography, University of New England. Mail May 2017.

> *From a political view, we weren't highly linked into the political world. Having said that, quite a few of us certainly in the 70s, were members of the Australian Conservation Foundation, Wilderness Society et cetera and we were seen as, certainly in the local communities, but also by the Education Department and politicians, as being greenies. And that certainly polarised us, and I think as I explained before, a few of us had some issues politically because of particular stances that we took in our broader life on environmental issues, which polarised the community back in those days in particular… I've worked for left-wing labor politicians, and I've linked with the Greens, and also conservative parties as well, wherever I've been. So, one of the inspectors got wind of those linkages and felt that I was running a political agenda at the Environment Education Centre and I said "Which political party am I aligned with? There's this one and this one—I've links with all of them. Politicians are part of the community, and they will help support what we do, and maybe even better, they are a conduit to funding, and it's important that they are on side whoever they are. Both sides – all sides of politics." So, you know, there was maybe some pressure there to possibly close the Centre in that case because they saw that I was politically motivated but they didn't… I tried to explain that environmentalism is multi politics, you can't take politics away from anything we do and in fact, the whole school system is politically driven and politically persuaded. So what's the difference – I don't think he particularly got that point, I think he saw me once again, as a bit of a green freak show and also the fact that I, you know, I think had so much linkage into the community, such strong links. Far more than you know, you would have in an internal school community. He saw me, I think, as a threat, and I think probably that's a good way of summarising how we were seen in terms of the education system.*
>
> FA

An interesting observation in the quote above is the perceived threat centres posed to some politicians and the NSW Department of Education because of their extensive community links. This is a theme that carries through from Strom and his experiences with the Fauna Protection Panel (FPP).

Woven throughout the data is the importance of politics in shifting EE and the centres forward, and warding off the threat of closure at times.. Politicians used the centres to gain favour with the community who were backing the centres:

> *If there was some political mileage in it for the politicians, we got a jersey… It was on from day one. We had to play politics all the way. And David Tribe, he was playing politics for us at one stage too… but we were always—well, whoever had the ear of whoever was in power you know… Whoever knew someone would do the deed. We were always playing around with that. And of course, the Department didn't really want us. They wanted to give us to Sport and Rec at one stage… We were always under threat of being closed. So political in those days, still are.*
>
> AA

The vested interests within the well-established learning areas of science, history and geography were battling the new upstart environmental educators. So the centres were

fighting three or more entrenched curriculum areas. The theme of the power play between and within the curriculum was touched on in previous discussion relating to the attempts to shift schooling in NSW to a more "whole child—head-heart-hand," student centred pedagogy. This theme is entwined with the battles that centre staff, and EE in general, have had in changing what we learn and/or how we learn it, given that EE/EfS is so antithetical to traditional ways of learning.

While the gazettal process was important in securing the centres, and indeed, at times staved off their closure, it is difficult to ascertain the exact details of the process and who was involved. When a centre is gazetted it has the same status as a school. The process provides a school number and establishment funding and staffing. It is difficult to close a school. Gazettal was immensely important for the centres. It appears that the process started in 1976 with the first of the old schools being established as FSCs and it seems that some teachers-in-charge were involved or instigated the process.

> *I mean it's fantastic the environmental ed centres are still going but we made sure through a lot of lobbying that these centres were schools. That was critical. That was… because you can't close down a school, pretty much. Only through numbers. We made sure that that happened. So they could get rid of the environmental ed coordinator, you know central coordinator, they can do whatever else they want to, but they've actually got to close a school politically. But even based on legislation they've got to carry out certain activities, and the main one is to say that no one is turning up—and that's not going to happen . So the bottom line was that we made sure that… and we fought to become a principal of a school. And they're listed and gazetted as schools. And that was the win. It's game set and match.*
>
> FA

A Shift in Oversight

About the time of Frost's retirement, greater regional independence saw the employment of teachers-in-charge managed by the regions. One of the old guard thought the political and environmental nature of many of the first few intakes of teachers-in-charge was intentional and conceivably due to Frost's authority. It was possible that regional selection was influenced by consideration of potential negative consequences from more senior ranks, particularly after the embargo. Increasing politicisation of education could also have had an effect.

Centre educators remember Haddon overseeing the centres but his oversight was not the same as that of Frost who was from within the system at a more strategic level. Frost was able to keep FSC staff informed of any matters pertinent to their cause such as annual budget allocations and it was Frost who organised the centre conferences. Teachers-in-charge would write annual reports and present them at the conferences (not too arduous when there was fewer than 10 attendees). Post-presentation submission of reports to Frost and the regional directors kept all authoritatively informed. These reports would outline numbers through the centres and their Year groups—K-12. It was many years before the practice of annual reporting became mandatory for all schools. After Frost left the NSW Department of Education and the teachers-in-charge of FSCs were answerable to a regional director, the powerful positions that had influenced the establishment and development of the centres were no longer available. The Curriculum Consultant for EE did not have this power. Haddon took over the organising of the conferences, but centre staff led the content.

> *And Frank loosely oversaw us but not like Arthur Frost. Arthur used to go to bat in the Department for us. He used to speak for us. If anything were going to happen he'd tell us…. I was saying that Arthur was more like our principal and we were his staff. And he had control over, not what we actually taught but how the centres ran. He organised the conferences and told us what was going on and how much funding we were going to get next year… after him the people that took over his role didn't have as much power within the Department. They were under regional directors themselves and they were answerable to them. I don't know who Arthur was answerable to, he seemed like he was answerable to himself … When Frank Haddon took over he used to organise the conferences but it was more led by us. But he would tell us what was going on.*
>
> AA

A Snapshot of EE into the 1980s

Environmental issues were very much in the media at the end of the 1970s. Government departments were involved in the push for change. For example, the Minister for Education, Eric Bedford, in 1978 stated,

> *"There is increasing concern over such issues as wood chipping, uranium mining, sand mining, preservation of whales and seals, preservation of trees, containerization, oil transportation, recyclable products and disposal and reclamation of useful items from domestic and industrial garbage waste.*
>
> *Children in school today will be the adults of the next generation who have to utilize and identify the issues which lie behind these complex challenges."*
>
> (Education Minister, Mr Bedford cited in the NSW Public School Teachers Federation 1973, 17)

There had been at least seven major national conferences and many state conferences providing the space for cross-pollination and opportunities for divergent thinking within the field. For instance, Lee Williams, organiser from Queensland's Department of Education, had presented aims for FSC through his 1977 presentation to the second AEE (NSW) Conference at Newcastle (Sokoloff 1977). The Curriculum Development Centre (CDC) EE Project was also inputting into the education system from the second half of the 1970s.

The core of EE within NSW at the end of the 1970s was:

- the museum EE group (The Australian Museum 1978-79)—open to FSCs,
- FSCs which were generally hubs of activity acting as regional advisory centres for teachers,[57]
- the Gould League of NSW and the 70 Gould League of NSW coordinators being set up around the state, and
- the curriculum projects that were supported by the CDC (Haddon 1979).

> *All Education staff attended the meetings of the Museum Education Officers Group held at various museums in Sydney and environs every two months.*
>
> (The Australian Museum 1978-79, 52).

> *The Museum Education Officers group would have meetings and field studies centre teachers were invited to come as… parallel educators. And they were at places like the Powerhouse, the Museum, the Water Board.*
>
> KA

[57] Giblin, Warwick. 1980. Windsor Rotary Club Address. Mail May 2017.

By the end of the 1970s, there had been substantial growth within EE but it was still ambiguous with the predominance of education "about" and "in" the environment but not great progress in the education "for" the environment (Robottom 1983a). The difficulty in changing the paradigm of education within a schooling structure embedded within a dominant capitalist structure was continuing. There was a state priority given to internal, local developments with dissonance between the understanding on a national level (CDC) and the state representatives of the national projects. It was Haddon who was the NSW representative who interacted significantly with FSCs and the schoolteachers who had to deal with principals and curriculum committees embedded in a disciplinary, academic orientation (Robottom 1983a).[58] Thus, national thought, through the CDC, was that orientation towards environmental action was not produced from knowledge and skill development alone (Robottom 1983b). It seems that the elements conducive to action were most likely to be developed/developing through the types of programs, pedagogy, practices and role modelling growing and emanating from the FSCs. Yet the apathy in the NSW Department of Education in the late 1970s emerged with attempts to establish an advisory board in EE to guide teachers (Strom 2017).

International and national documents supported the development of EE at a state level where the jurisdiction for education lies. There has been a slow metamorphosis of formal EE curriculum from the 1970s through to the present, with many of the earlier years influenced by science education approaches (Disinger 1993, 20). These approaches were aimed chiefly at assisting the conservation of natural resources with economic development—without changing anything quickly or fundamentally" (A. Gough 1997, xiv). This conservation approach was supported by a number of international and national policies. International initiatives in the 1980s included:

- The World Conservation Strategy (WCS): Living Resource Conservation for Sustainable Development, 1980, developed by the International Union for the Conservation of Nature and Natural Resources (IUCN), and

[58] There may also be an element of state and federal power play within this development.

- "Our Common Future" the Brundtland Report, 1987, the World Commission on Environment and Development [WCED] (A. Gough 1997).

The concept of sustainability had been established in a contemporary sense through the Club of Rome's "Limits to growth" (Meadows et al. 1972). It was embedded in the subtitle for the World Conservation Strategy in 1980—Living Resource Conservation for Sustainable Development—(A. Gough 1997, 30) and in 1984 it became a mission when the World Council for the Biosphere and the International Society for EE joined forces (Australian Association for Environmental Education n.d.). The Brundtland Report in 1987 provided further propagation. The "sustainable development" terminology was a technocratic call for people to live within the earth's carrying capacity without a clear understanding of what these dimensions would be (A. Gough 1997).

Mention of EE in the Brundtland report occurs in two Chapters—"Population and Human Resources" and "Industry: Producing More with Less." EE in formal education is positioned within the sustainable development discourse encompassed in "Broadening Education", within subsection: 4.III.3. "From liability to asset." It calls for EE to be included in all subjects:

> *Environmental education should be included in and should run throughout the other disciplines of the formal education curriculum at all levels—to foster a sense of responsibility for the state of the environment and to teach students how to monitor, protect, and improve it. These objectives cannot be achieved without the involvement of students in the movement for a better environment, through such things as nature clubs and special interest groups. Adult education, on-the-job training, television, and other less formal methods must be used to reach out to as wide a group of individuals as possible, as environmental issues and knowledge systems now change radically in the space of a lifetime.*
>
> (World Commission of Environment and Development 1987, A Policy Framework, Section 3, subsection 3.2, point 68)

Economic and Political Change

Fundamental changes were also occurring within the economic and political structure. Despite the lowest economic growth rate in 27 years from 1974-1983, the Whitlam years saw Australia become a country that was "fairer, more decent, more open, more confident, more

exciting" (Keating 2014). Foreign policy was re-oriented to a post-imperial outpost—shifts in social programs saw Medicare, secondary and tertiary education, and rights for women. This, however, blew out the budget. Keating noted in his reflection on the Whitlam era in comparison to the Hawke/Keating era that the difference in "Cabinet craft, the specialisation, and the common ownership by each Cabinet Minister in the whole program, or of each stage Cabinet discussion, or of each issue" was profound. This suggests that proprietorship has gone. In addition, Keating argues that goodwill disappeared from federal government given the Coalition's gracelessness in opposition—and a schism ensued (Keating 2014). This fundamental fissure within the fabric of the Australian political system has had a detrimental effect on planning and decision making within Australian governance and for controversial topics such as the environment this effect is particularly exacerbated.

In writing about the effect of economic growth in *Australia's 100 years of National Parks*, Fox draws on a paper by the economist James Weaver (1971). Weaver argues that the economic premise of "more is better" is false on the grounds that it ignores both what happens when a purchaser realises expectations have been met, and what happens to society and the environment in the production of additional goods. Expectations increase and there are dehumanising effects from the massive "undemocratic, bureaucratic and hierarchical organisation" required to feed economic growth (Weaver cited in Fox 1979, 7). Fox talks about a revolt against a move toward a newer, liberal education in an education system with an economic growth mindset. He talks of this new education, particularly those areas emphasising environmental sensitivity, being under attack by industry and technology interests (Fox 1979, 8). Education, he says, is supporting economic growth, teaching students extrinsic rather than intrinsic value as this is needed to feed the economy. The environment is commodified and there is a lack of time to slow down and value it (Fox 1979, 7).

Industrial interests, most likely having learnt from the combined efforts of conservation groups, can unite in trying to contest terrain from the conservation movement. An example given by Fox (1979, 7) was an overseas expert who argued, with press giving his views great support, that multi-purpose parks with such activities as forestry, grazing, mining and conservation were an efficient model, yet this was not the case. The future will only see further pressure given resource squeeze and profit motive (Fox 1979, 13). Whilst Fox is

talking specifically about national parks and reserves, this is relevant for EE/EfS given that he positions education within this economic paradigm but also sees education as the potential liberator. Fox goes on to say that,

> *National parks are somewhat like a straw which biosphere people might clutch in an attempt to steady their decline as humans. But in so doing they should remember that the parks will survive only as long as the user can learn from ecological people and sense themselves as part of nature not apart from nature.*
>
> (Fox 1979, 11)

Further, Fox outlines critical thinking and action as a way forward:

> *Environmental education programmes (see article on education this issue) if they are effective, must be more than natural history lessons; they must provide environmental encounters and show people how to become involved in the decision making process itself. This is probably the only way to break the "tragedy of the commons," to give those who have no economic gain a say in the future of the commons. Without the consciousness of people to the decisions which lay ahead, I see little hope. The programmes must deal with living people, systems, and processes of life, and investigate the human intervention in ecosystems and the driving forces of economics and politics.*
>
> (Fox 1979, 13)

As early as the late 1970s, Fox was talking about the rhetoric of public involvement in decision making, written into planning processes, being only lip service (Fox 1979, 13)—a sign of the movement away from community involvement.

The Karmel Report, *Schools in Australia* (1973), with its argument for equity of educational opportunity to be a benchmark, and the release of large amounts of funding for this purpose, was the outcome of long-standing political commitments to societal equity (Welch 2018c, 271). Superseding this benchmark was a move to more outcomes-based education with the 1985 *Quality of Education: Report of the Review Committee* (Welch 2018c, 272). There was a hollowing out of what had been state functions, according to Pusey, with the economic rhetoric of individual rights and ideologies of efficiency and choice dominating (Pusey 1991).

The Webb Report: A Survey of Field Studies Centres in Australia

Webb published the findings of her survey of FSC in Australia, funded by the Australian NPWS, in 1980. It noted that the term "EEC" was more appropriate than the outdated "FSC" (Piesse quoted in Webb 1980). Unravelling the difference between outdoor or conservation education using Swan's 1969 description, Webb points to EE being about citizens developing concern for environmental quality and thus being involved in environmental problem solving, with an interest in nature being a by-product of the learning rather than an aim (Webb 1980, 5). The study noted that centres had moved significantly towards approaches studying the human impact on the total environment rather than studies of ecology. Interestingly, for evaluative purposes, with some environmental educators seeing attitudinal change as the main objective, it was thought that the effect of EE could not be measured until tested via the undertaking, or not, of environmental action later in the affected student's life (Webb 1980, 92).

One major issue addressed in Webb's report was the FSCs not being available to private schools and the general public—a frustration for many within the environmental groups and some within the NPWS who would like to have seen the centres open to all seven days a week (Webb 1980, 105). At this stage, the NSW NPWS was the only NPWS to have an EE policy—they were keen for centres to be utilised by all. Webb, noting the Education Department/governmental monopoly of FSCs in Australia, derided the sporadic, uncoordinated community involvement (few individuals carrying much of the load) compared with that of the US.

> *Let it be said that lack of awareness, which stems from lack of education, is creating a vicious cycle, and where commitment does exist, often this is stifled by a lack of funds.*
>
> (Webb 1980, 108)

At the time of Webb's study, there were a variety of FSCs in NSW. There were 48 centres in all: 10 FSCs within the NSW Department of Education FSC network, 13 closed schools utilised by schools for studies, six private organisations, 10 sport and recreation centres, seven tertiary FSC, two managed exclusively by a school (one private and one public) and six private centres which accepted the general public but most of their clientele were school

students. In analysing the number of students through centres within Queensland and NSW, Webb concluded that Queensland's network was providing services more efficiently with more centres per head of population and with plans for more, whereas NSW had no future plans, having "closed the doors to expansion" and looking for a more efficient use of centres (Webb 1980, 109, 135).[59] However, both states were only catering for a fraction of the school population (6.1% and 2.2% respectively). Webb established that the cognitive and skills components were being taught well while the personal relevance and problem solving/decision-making aspects of EE were neglected.[60] Webb considered that sports and recreation facilities had great potential for EE given their extended residential capacity, and their greater overall capacity in having more staff and bigger facilities, yet, the EE within their programs was minimal. The Gould League of NSW had over the late 1970s and early 1980s in-serviced these centres but their focus on fitness and outdoor education took and takes precedence—changing ethos is not easy. Webb's study questioned the reasoning behind the placement of NSW FSCs and their efficiency in being in locations that could provide for a sufficient number of schools, with a diversity of experiences unavailable to schools themselves (Webb 1980, 114). The study suggested other EE possibilities such as wide-ranging EE consultants for the Riverina, which was a large region without a centre. This was something the FSC staff themselves had suggested from the early days—more staff taking EE to schools. Webb's study outlined a pressing need for a demand for FSC services but suggested no further expansion until policy and rationale development—something the centres were in the process of formulating, albeit within their structure, part of which Webb references (Webb 1980, 22).

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[59] Furthermore, Queensland had a policy of two teachers per centre from their establishment with the number of staff growing over the years (Stevenson, examiners report, December 17, 2019; Webb 1980; in addition to one of the study interviews).

[60] It should be noted that development within the FSCs under investigation is difficult to tease out given the plethora of NSW centres, let alone to study nationally. Additionally, from many interview accounts, while Queensland does have EECs, there are also many Outdoor Education Centres (EECs are primary whereas the outdoor education centres are secondary oriented—but practices within are variable), whereas the Centres in NSW are clearly defined EE or Outdoor Education (Fitness Centres). All centres are considered in Webb's analysis.

While a broader base and a greater shift to EE was advocated, as outlined in the Belgrade Charter (more progressive problem solving/action based/connected education), it was noted that some centres—Arbury Park in South Australian, many in Queensland, and, within NSW, Awabakal, Bournda, Wambangalang, and Muogamarra—were working towards achieving this effectiveness (Webb 1980, 120). To answer the question, "Are the field studies centres staffed by NSW education officers achieving their objectives as they relate to visiting school children?" a case study of Awabakal FSC was undertaken. It established there was significant achievement of centre objectives with the embedding of the centre visit in an overall program of study developed by centre staff in consultation with the visiting classroom teacher (Webb 1980, 136).

Like AAE (NSW) and Australian Association for Environmental Education (AAEE), Webb called for:

- Clear policy,
- EE coordination by a permanent body of people in each state—representative of departments,
- a regional consultancy network,
- key coordinators within schools,
- resource dissemination capacity for schools, and
- once clear criteria, objectives and functions of FSCs are set, the expansion of FSCs.

(Webb 1980, 120)

Some EE Events in the 1980s

Bill and Gloria Stapp visited Australia once more in 1982, with Bill presenting at both the AEE (NSW) conference at Mitchell College of Advanced Education, Bathurst, and the AAEE conference in Brisbane (Australian Association for Environmental Education 1982). Funded by a Senior Fulbright Fellowship, the Stapps toured Australia and reported on the

state of EE sponsored by the Australian – American Education Foundation, the AAEE, the Frank Daniel Butt Memorial Foundation, and Griffith and Monash Universities. The Stapps visited Awabakal, Wambangalang, Dorroughby and Brewongle and while findings and recommendations are too broad to attribute to the NSW FSC specifically, it is possible, and can also be surmised from the data collected for this history, that Stapp's finding: "While in Australia we were exposed to some environmental education strategies, approaches, and activities that we considered to be outstanding and/or exemplary efforts in environmental education" and the advice, "That staff in environmental field study centers [sic.] direct attention to ways to prevent staff burn-out" (Stapp and Stapp 1982, 9) would have been, in some part, directed to the NSW FSCs staff.

> *So, probably the most influential was Bill Stapp, William Stapp, and he certainly gave a lot of guidance for environmental education pedagogies, and also a range of interesting activities… into the field. But you know, he had several books that he wrote. He was a leading educator in the United States and he had a lot of clout. And he got on this bandwagon and there was some fantastic stuff that came out for teachers to use, and obviously we picked up and learnt greatly from these people. Mainly at environmental education conferences, not at field studies centre conferences. But David Tribe did bring around a range of other educators that you know… for example sensory awareness I think was one of the activities or range of activities so… feel a tree and a whole range of… all these lovely little games and activities, which I did by the way well into the 1990s. Probably still being done now.*
>
> FA

In addition to practice, the Stapps influenced the fledgling field of EE theory and research.

> *So people like Duane Toomsen and Professor William Stapp from the United States provided a lot of academic guidance in terms of teaching and learning and also theoretical theory and also research.*
>
> FA

The inaugural AAEE Conference was held at Arbury Park Outdoor School in South Australia in 1980. Haddon, listed as Consultant, Environmental Education at the Directorate of Studies, the NSW Department of Education, presented at this conference on how EE was progressing in NSW.

- There were 12 FSC located throughout the state. This must have included Jindabyne and Bunberry, which had been included in the first edition of *Environmental Education*, a NSW Department of Education publication produced in 1978. Royal National Park, Longneck Lagoon and Brewongle had been added to the growing number of FSC by 1980. (In Webb's study Jindabyne and Bunberry were no longer listed as within the FSC network but rather within the Department of Sport and Recreation and attached to Dulwich Hill High School respectively [1980]).
- Teaching environmental awareness was a new component in the new primary science syllabus.
- Broad based environmental programs were being developed utilising the "Man and the Environment" component of the secondary geography syllabus.
- *The Gould Leaguer* (with additional collaboration from The Energy Authority of NSW, The Public Works and Schools Building Research and Development Unit) was expecting to exceed demand with their 50,000-print run by the end of the year.
- The NSW Department of Education was expecting at least three new regional EE consultant appointments by 1981. They would supplement the FSCs who also acted as advisors.
- There was an environmental resource officer paid by the State Pollution Control Commission in the NSW Department of Education producing State Litter Reduction Campaign curriculum material (AAEE, 1980).

- The Premier, Neville Wran, was backing a NSW EE Council through requesting the State Pollution Control Commission set up a forum for its creation. It was to represent the Gould League of NSW, the State Pollution Control Commission, the NSW Department of Education, NSW NPWS, the NSW Planning and Environment Commission, the Australian Museum, Taronga Park Zoo Board, the AEE (NSW), the Nature Conservation Council of NSW, and the National Trust of NSW (Haddon 1980, 52-53).

The AEE (NSW) restructured in 1981 to allow for regional branches within a state AEE (NSW) organisation, thus avoiding duplication (Association for Environmental Education [NSW] 1996; McDonald 1999). Groups were autonomous with two members from each constituting the State Executive who governed and lobbied on behalf of the whole—this group was a powerhouse of action. McDonald was the president, Tribe the vice president and Strom was secretary until his death in 1997 where Dufty became the secretary (McDonald 1999). Dufty was the editor of the quarterly State Executive newsletter *AEE News*. In 1983, there were six AEE (NSW) branches: Sydney, Hunter, Manly-Warringah, Metropolitan West, Ku-ring-gai, and Central Coast. A number of centre staff were active in Association branches in 1983 including Bowden, Dibley, Gilligan, Chris Koettig, and Steve Wright (Association for Environmental Education [NSW] 1983).[61]

The AEE (NSW), through a few regions, had been trying to educate the NSW Department of Education about the cross-curricular nature of EE that should "permeate the total curriculum." It was trying to rectify the assumption that EE belonged to the science discipline and was the focus of primary school only (Australian Association for Environmental Education 1982). Within the compartmentalisation of the high school disciplines, EE was problematic—but still achievable.

In 1982, the Minister for Planning and Environment proposed an Environmental Education Advisory Committee within the Environmental Planning and Assessment Act 1979 (NSW). This was not the Council, a statutory body, advocated for, but still it represented progress in

[61] These were direct connections found in a snapshot in time of the AAEE (NSW). There could well have been many more centre staff involved.

enabling promotion and coordination of EE across NSW (Australian Association for Environmental Education 1982). By 1985, however, the EE Advisory Committee had been abolished.[62]

A series of EE in-service workshops was hosted by the Gould League in early 1980 and 1981, and conducted by Duane Toomsen and Joseph Cornell with his *Sharing Nature with Children* (Johnston and Tribe 1982). While there were some teachers-in-charge who were not overly influenced by these visiting environmental educators, there were many who were. The workshops greatly assisted teachers in developing their EE practice. It was the FSC teaching staff who adopted many of these practices and ensured their enduring further dissemination within the state. The following excerpts illustrate both views of the impact of these educators.

> *They were interesting people to meet and you might have picked up a couple of little thoughts and activities or perspectives here and there but they didn't totally, dramatically change the way we did anything in my view.*
>
> EA

> *It had a huge effect with many educators using it… Duane Toomsen utilised Piaget's theory of child development. In-service participants experienced having to design lessons—including the investigation, invention and implementation stage. There were some excellent outcomes with the creation of inventive lessons, such as "Chocolate Chip Mining" and "For the Future," where the concept of sustainability, and empathy for future generations, was revealed through wise use of resources—chocolate chips, and the mining of the chips with as little, or no, damage to the cookie; and smarties… These activities could be given in a classroom… The activity does the teaching and the students do the learning by actually investigating then inventing, and lastly, which hardly ever happens in education, implementing what you have learnt and seeing the outcome.*
>
> AA

A book titled *Outlook Australia*, containing EE activities developed by the collaboration of American and Australian environmental educators, including Clements and Foott, and edited by Tribe, was published in 1989. While there was criticism on a national level (Australian Association for Environmental Education 1990b), of the lack of critical pedagogy within this publication, some of these activities did have an element of education "for" the environment

[62] Urban Studies Centre Working Party Formerly Urban Studies Centre Subcommittee Environmental Education Advisory Committee. 1986. Mail July 2017.

when practised by environmental educators with clear intentions. Additionally, the necessity for sensitisation to the environment for many students who were already showing signs of disconnect from their environment, both natural and built, and the value of this education in a system unwilling to be open to controversial issues, needed to be accounted for. There was frustration in trying to move EE toward educating "for" the environment a bit quicker, but the people on the ground were dealing with the intransigence of a hegemonic system happy with its position and unwilling to let go. In the right hands, the connection between cognisance and action is revealed and enlightenment ensues. As Pearson and Webb have indicated, the educator involved in the EE is of the utmost importance, and many of the educators within the centres were very good pedagogues with an excellent knowledge of their content and craft while acting as role models for teachers, students and the community alike. Consideration of specific time and place is important in valuing these activities (Renshaw and Tooth 2018). In saying that, these activities became very popular and are still utilised within the formal EE/EfS system and further. Some of these activities still have a place given the need for an effective element in EE/EfS and the increasing disconnect that is being experienced within society.

> *Perhaps a little bit less to do with learning but to do with the whole student and this relates to a range of things including the rapidly growing disconnect young people have with their natural environment. And as time goes by an increasing number of kids will not have experiences in the natural world. Now that could be a physical separation, our cities are getting larger, transport is getting more difficult, all that stuff. Or that could be a social separation where things like their parents may not have seen or don't see the value in taking the kids for a bushwalk, taking the kids to the national park, allowing kids to do that unstructured nature play, those sorts of things. So when you do have kids in the EECs you can allow them to experience I suppose that rawness, that unfiltered, that unsanitised closeness to nature. There's of course a few policy related things there. Safety issues and all that kind of stuff. But it does allow…. It removes those barriers, it removes those filters.*
>
> VB

Downsizing of FSC Oversight but Developments Inside and Outside

In 1981, owing to government cutbacks, the Curriculum Consultant for EE and Gould League of NSW Education Officer positions amalgamated with Haddon continuing in this role (Johnston and Tribe 1982). It is assumed this loss may have contributed to the NSW

Department of Education's encouragement of the establishment of regional EE committees, which gained sparse response (Australian Association for Environmental Education 1982). Tribe returned to schools for a time, becoming the principal of Manly Vale Public School, which he set up as a "centre for excellence in environmental education" (NSW Department of School Education 1993).

While many changes within the NSW centres are captured in Webb's research, there are glimpses specific to the Departmental FSC/EECs through the reminiscence of the foundational teachers-in-charge. The importance of the biennial conferences in planning direction was expressed:

> *Well the field studies centre conferences were also important events. Obviously, they dealt very much with the conditions in field studies centres; and when I say conditions, not only the physical conditions but also the conditions of employment with the Department of Education. … So one of the very strong roles of the Association for Environmental Education, and also of these field studies centre conferences, was to actually lobby for, not just an inspector that had environmental education as part of his or her portfolio, but to have a specialist position in the Department of Education that could coordinate environment education within the state, including environmental education centres.*
>
> FA

In addition to planning time, there was great value in teachers-in-charge learning from each other's diverse experiences, skills and situations.

> *It served the best purpose imaginable. Walk a mile in my shoes, you know. And you got to see each of their environments and you got to see how they interfaced with their community, which is always different. And you got to understand that a range of approaches is valid. And that, especially if the approach taken is geared towards either the clientele or the opportunities available. Everyone had different opportunities. Everybody could invent that role in whatever way they wished. And that is unbelievable professional freedom.*
>
> GA

The conferences attracted others interested in the field given they were some of the only experts in the field at the time, and that EE and its developing pedagogy were popular and new topics. Additionally, there were teachers who were actively pursuing EE in their schools. There were also some politically expedient conference attendees who either had been, were, or could be beneficial to the cause.

> *In those days, it was a broad spectrum. In those days we had lots of advisors… curriculum advisors. And they were based regionally. So you'd get a few of them. But also the centres would have links to the community and so sometimes it was politic to invite those people along because they were in some way or another backing the centre. But you'd get head office consultants. You'd get regional consultants. And then you'd get people outside education…they would in some of the sessions outnumber the field studies centre crew….* I think that perhaps there *wasn't much happening in environmental education and these people would see probably, "Ah, here's this elite that have been chosen and so we want to do it too so let's go along." But you'd also get teachers who were doing their thing, you know, they'd get an invite. And that was always really good. Or even at times, you'd be taken out to a school, taken out to areas.*
>
> GA

At one stage, people working on the "Do the Right Thing/Keep Australia Beautiful" campaign attended centre conferences. They were writing resource material for schools. This was a big issue for some of the centre staff given that the campaign was paid for by a levy on the packaging industry, ostensibly avoiding deposit legislation. Years later one of the teachers-in-charge consulting for the Keep Australia Beautiful Council was disassociated from the project after suggesting container deposit refunds and refusing to compromise.

The advantage of the FSCs was the freedom to innovate. The disadvantage was no rules were set which made consistent management difficult. Staffing was also an issue. There was a blank canvas for newly appointed FSC teachers-in-charge—there was no policy within the NSW Department of Education. There was no direction on how to run a FSC, nor what and how to teach—no position description. Fieldwork compatible with the classroom/curriculum was the brief.

The conference held in 1980 at Thalgarrah was significant in initiating the notion of the development of environmental education policy. There was always a senior official with EE in their portfolio at the conferences, generally an inspector. At Thalgarrah, Foott had invited a staff inspector to assist in progressing centre form and function, and from the data this was most likely Frost. He suggested two distinct matters—one industrial regarding the administration and management of the centres, the other revolving around curriculum. This initiated the focus on a FSC policy and *EE Curriculum Statement*, both of which took nine years to come to fruition.

There was an acrimonious meeting with the NSW Department of Education about working conditions in the late 1970s. The topic stayed shelved for a while until the old guard gave way to newer personnel and the acrimony subsided from the corporate memory. As it was a new concept, there were no Teachers Federation or Departmental policies for FSC working conditions, and as can be read from the description of the setup of the centres, things could be less than ready, to say the least.

Foott had been a Federation Representative when teaching in high school and thus had taken up the task of representing FSCs in their bid for better conditions. It took some time for the Federation to start supporting FSCs but after much discussion, they helped establish links with Head Office within the NSW Department of Education. Nevertheless, the Department refused to talk to the FSCs without the Federation, or unless the situation met the criterion of "in dispute with NSW Department of Education." This position motivated the FSC staff to develop their own policy and working conditions. Foott, Clements and Koettig formulated a draft during a conference at the Royal National Park. With a bit of tweaking, this became the centres' policy about 10 years later. From then on, the FSC had standing with the NSW Department of Education—the relationship changed.

Effecting Change on the South Coast

Before continuing, it is worth stopping to elaborate on some of the events that began evolving in the 1970s and were enacted throughout the 1980s. They have had a significant impact on the centres and how they operate. In attempting to flesh out the theme of "controversial issues," a case study of "Bournda Field Studies Centre" and the experiences of Miller has been developed.

The significant events of the 1970s such as logging at Terania Creek, provoked a strong response from the environmental movement and influenced FSCs topics taught in EE and the issues that were addressed. Some of the earlier teachers-in-charge were involved, outside of their work, in environmental groups trying to change logging and mining practices. Most FSC personnel stayed out of it but some were in centres that were in the thick of it. What does one do when teaching EE and the antithesis of it is on the doorstep? Many principals were conscious of conforming within the NSW Department of Education, with good reason

considering that actions could, and at times did attract the ire of the Department and Ministers. Public perception was important given the newness and unfamiliarity of the EE concept. Another point to take into consideration was the strong conservative science element within some of the camps.

At Bournda, Miller was close to the destruction of the South East forests radiating out from a woodchipping mill. There was scant environmental protective legislation at the time. Out of work time, Miller was active in the movement against woodchipping in the area. In his teaching he was always balanced—giving both the forestry and conservations side of the story. He was an active community member; people requested he represent them on many occasions, to further the conservation cause. Miller was, at different times, on the local district National Parks Advisory Committee, on a local State Park Trust, in the local Bushfire Brigade and politically active as a local shire councillor.[63]

Through Miller's involvement in the forestry debate he was seconded for three months by the Wran Government to the Ashton Committee enquiry into woodchipping which tabled its findings in 1978 (NSW Government: Office of Environment and Heritage n.d. a). The result was the transfer of Nelsons Lake and several other coastal catchments from State Forest to National Park as well as additional environmental restrictions placed on the Forestry Commission's operations. Shortly after this, about 1980, was one of the first Departmental enquiries into Miller's operations. A team of inspectors found everything above board—"'smelling like roses' was, I think, the comment they used." Miller's actions provoked the ire of the Forestry Commission on more than one occasion.

> *But it was all a bit worrying at the time because what I thought I was doing, and still think that I was doing, was in the ambit of what citizens should be able to do in a democracy.*
>
> JM

[63] Miller, elected as the chairperson of the Park Trust, was able to smooth the path for the movement of Bournda to the National Park, a move that was to take a few months originally but ended up taking years.

Furthermore, but not to take away from the significance of Miller's statement, a FSC principal stated that:

> *There are some people that can distinguish between Jack's role as a conservationist and his role as a principal but his enemies properly didn't.*
>
> DB

Miller was subject to death threats in the middle of the night, and had his phone disconnected for an 18-month period. He had experienced having his feet spat on in the street. It was difficult for his family, with his children attending a very small school, feeling the effects of a polarised community. "It was pretty unpleasant." However, through Miller's community work, respect and community standing was built over a dozen or so years.

Another battle occurred after Miller and Chris Grounds were involved in the writing of a resource for Year 12 Geography (Bournda Field Studies Centre 1989). It can be assumed that the content of this material would have differed from a traditional geography curriculum resource; it would have touched on some controversial issues given the forestry activity occurring in the Bega/Tathra region. About this time, Miller was elected to Bega Council. Bournda was threatened with relocation—effectively closure, given that the new location was about six hours away. While Hansard indicates lack of numbers as the reason (Brown 1991b), it was strongly felt by many research informants, and Hon. Richard Jones in NSW Parliament, that this was a cover up for the real reason which was Miller's involvement in politics. Indeed, their experiences point to some truth in the matter. Miller and the woodchip industry clashed on a number of occasions and the impact of this was acute for those in the NSW Department of Education bureaucracy who, because of their position, had to get involved in protecting the centres.

> *He became politically involved while he was still an employee of a government department, which is not really allowed. So that's why the Minister was involved and I had to keep that centre open and help keep the peace with the politicians to ensure things were okay and that it didn't wash over to the other environmental ed centres who were doing a pretty good job really, and were politically independent of local politics… even though they may not have wanted to… Yeah, it was a challenge to ensure they remained schools.*
>
> SS

There were moves afoot by politicians to change the status of the centres from specific purpose schools, as gazetted, to places where education occurred. Although a justification was given for classification change, it was strongly felt by many in the EE community that the proposed change was being pursued to allow for easy closure of these centres.

> *But we'd had it gazetted and that so it takes two years to close a school down. And so we were a school so they tried to change our status from a school for specific purposes to something else, to places where education took place, that's right. Yeah, that was a big one.*
>
> AA

Miller was busy in his own territory,

> *I seemed to be flat out keeping my head above water in an area where there was a very strong anti-conservation ethos… I was just flat out keeping the doors open against a lot of pretty powerful forces that wanted to close them you know… I was flat out trying to keep my head above water with the bloody woodchip industry. I just kept coming up against that. Every time we'd try and do something a bit more interesting they'd try and close us down or belt us over the head, you know.*
>
> JM

Miller was instructed to stay out of trouble and thought that Council would be a good way to effect change.

> *I'd been hammered by these enquiries and basically told, "although everything is okay at the moment, for goodness sake keep your nose clean from now on, Jack." You know, that was basically the story, and I was on the Council so I was doing what I could during the Council.*
>
> JM

However, Council proved to be a battle ground too. Miller served on the Bega Council from October 1987 to September 1999 when an administrator was appointed to the Council.[64] It seems the majority and minority factions on Council were at loggerheads, making functioning as a council untenable. The relationships between staff, particularly senior staff and Council members, was central to the problem.

[64] Bega Valley Shire Council. Email March 3, 2019.

> *The issues have ranged over a variety of planning matters, some issues of policy and some specific major items including the Merimbula Tip and the General Manager's second dwelling.*
>
> (Office of the Commissioner 1999, 402)

At one stage, one of Miller's adversaries sued Miller but Stuart Littlemore, a friend of a friend, won the case after taking it on *pro bono*.

These sagas have grown into battle legend within the centre network. Viewpoints about political advocacy are both positive and negative regarding events that took place at Bournda. The events seem to have contributed to centre staff being wary of participating in environmental politics.

Well before this incident, a very strong and vocal Friends of Bournda FSC support group was established. Influential local people set it up including a lieutenant colonel in the Australian infantry in the Vietnam War, an ex-Australian Law Reform Commission solicitor, an academic lawyer who had relocated to Bega, an accountant, and the editor of the local newspaper. This group was instrumental in ensuring that Bournda remained where it was. The Minister was bombarded with letters of support for Bournda.

In the early years, 1977 or 78, a World Environment Day Dinner was planned. It started off as 40 people to enjoy a pig spit at the centre with a speaker for entertainment. It morphed into a sell-out dinner at Bega Town Hall with over 340 guests with such speaking luminaries as the chairperson of the Australian Heritage Commission, David Jenkin; the executive director of the Australian Conservation Foundation, Rick Farley; the chairperson of the National Farmers Federation, John Coombs; and the Secretary of the Maritime Union of Australia. Well-established organisations such as the NSW Farmers Association and the Chamber of Commerce booked a table. Money raised supported the centre. Thus, the Friends of Bournda FSC provided much needed political and financial support. That Bournda was a marginal seat might also have played a part.

> *But I think if you've got a lot of community support it translates into the political system and leads to infrastructure and money and facilities and all that sort of stuff flowing your way. Personally it suited me pretty well…. Well I think I mentioned the fact that there was a conservation society down there…. I don't think they operated through the Department of Education. They just went straight to the politicians and you know, when you have them by the balls their hearts and minds will follow.*
>
> JM

Miller credited Kennelly and Foott as being excellent EE pedagogues while underselling his own effect. Yet, some of Miller's education stories tell of some wonderfully effective education, particularly community education. Additionally, he was a great environmental/sustainability role model… "So, it's not do as I say as much as do as I do."

> *I mean the sorts of things that I used to admire from people like Bruce and David were the initiatives that they came up with to make learning in this so good, where I guess with me it was more a broad brush experiential thing.*
>
> JM

Many parents were involved in their children's EE at Bournda.

> *Once parents saw that you didn't have horns growing out of your head, and a tail growing out, and you weren't a devilish sort of character you got on alright with them.*
>
> JM

In an attempt to educate the public to live environmentally responsible lives, Bounda marked out the FSC carpark to advantage those with the least vehicle size/capacity.

> *They were all formalised parking areas, parking spots for cars. On the first one we put, "Reserved for vehicles of less than 1500cc capacity," and the second spot, "Reserved for vehicles with 2 or more persons," things like that. And parents would come in with kids and they'd look at these things and they'd be driving large cars, and hopefully I made them think.*
>
> JM

Miller conducted effective sustained immersions in the natural environment. For example, he used to take Aboriginal students who were in a suspension cycle at school out camping for a few days. Organisation and agreements took place between Miller and the students over a few meetings. Students connected, learnt to look after themselves in the bush—they built resilience.

One project was a Farm Tree Management Competition. Miller, along with the chairperson of the local Pastoral Protection Board (Rural Lands Protection Board), the Dairy Farmers Association in the Bega Valley, and the Livestock and Grain Produces Association (NSW Farmers) travelled to each competing farm judging the entrants. Strong bonds formed and these relationships came into their own when Bournda FSC was threatened with closure.

> *Each of those blokes through their organisations were active in their own political spheres on the right of politics. But there was enough in it there, as a result of those sort of contacts to save the Field Studies Centre from being relocated.*
>
> JM

Miller tells a story about meeting one of his students years later when planting native trees and shrubs with a group on a badly eroded creek on a farm in Central Tilba.

> *She's a successful—she and her husband are successful farmers, business people, and have really tried very hard to integrate dairying into a sustainable production system and this planting was part of it. And when I went there, she came up to me… and she's a woman of I suppose 50, and publicly said to the dozen of us there, she said I had made her a conservationist. And the story she told was that I'd gone with a group of kids, she went to Narooma High School, to the top of… almost the top of the catchment of Tantawangalo Creek, which is the catchment of a weir, Tantawangalo Weir that supplies the town of Merimbula and other small villages with water. And we walked down this steep granite, coarse granite, forested slope to the creek and I spoke to them after they walked down, and it was probably a quarter of an hour walk down. Very steep and very hard, and they were kids of Year 8 or 9, or 10 or 11… I don't know what they were. And then we walked down to the weir, I hadn't told them there was a weir at the bottom. And that was an area that was proposed to be woodchip logged. And that was all it was. There was no written work associated with it. And anyway, apparently that was what did it. And she described it all to the dozen or so and then came and gave me a hug.*
>
> JM

Controversial Issues

The *Controversial Issues in Schools* policy statement was released in 1983 (NSW Department of Education 1983) as there was a perceived need for such a policy. The policy is indicative of the times given the community action of the 1960s and 1970s and the rise of the necessity for an understanding of problems, and empowerment and action within EE (without taking away from the necessity for a policy for addressing controversial issues *per se*). According to the policy, parental consent is required to discuss controversial issues

encountered on excursions (NSW Department of Education 1983).[65] Additionally, material of an "overtly political nature" needs to be published historical material, or required for teaching the official curriculum, in order to be distributed to students. This could make teaching "for" the environment difficult.

> *But I don't go in and say we should stop logging, you know, that's loaded in terms of the community and the principals trust us to not antagonise sectors of the community. We base our activities on understanding those connections and saying that we need to care for the environment. There's just no value in us attacking any particular groups or activities at a school. It just puts you on a back foot if you're offside with the community and my feeling is that we've managed to walk that line… I mean there's probably people that might criticise us … but our job is to work within the policy framework of the Department of Education and that includes teaching controversial issues in schools. And as far as I'm concerned if we stick to what the syllabuses say… it doesn't mean we have to not highlight issues or ignore things. We have pretty frank discussions with kids but if you set it up so that the educational activity gets them talking about it that's different from going in there and launching into things.*
>
> DB

Another principal elaborated on some of the techniques used in dealing successfully with controversial issues:

> *I was trained in a lot of those techniques, you know, values dilemmas, values clarification,…the idea of role-playing, putting kids into roles. Debriefing them and taking them out of role, getting them to do things like problem solve like that kind of thing in a role, then taking them out of it. So you're broadening their thought processes about these things, making them think about these issues. And on controversial issues like, "What would you do if?" That's the way to do it. "What would you do if?" Without exposing your position. I don't think as environment educators we've got the right to be hammering our own point of view and trying to… You know you don't teach dogma in environmental ed.*
>
> TA

The *Wetland* special edition of the *Australian Journal of Environmental Education*, included a paper written by Awabakal teacher-in-charge, Gilligan. Gilligan made a stand for the necessity of educator impartiality, a middle of the road stance, in order for acceptance by the majority, to effect change (Gillian 1986). This was possibly an attempt to solve the polarisation of controversial environmental issues that Gilligan was experiencing within his activism.

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[65] This policy has been updated on a number of occasions.

Conclusion

This chapter has sketched a brief history of the establishment of the first wave of FSCs and the supports that enabled their development. Thalgarrah, Bournda, Awabakal, Wambangalang, Dorroughby, Royal National Park, Long Neck Lagoon and Brewongle FSCs were all set up from 1975-1980, mostly in old school buildings. All centres had strong advocacy and support from local communities, the Gould League of NSW, the AEE (NSW) and strong individual advocates with political connections.

Teachers-in-charge had to be innovative by necessity given the unconventional, experimental, avant-garde nature of their newfound vocation and the isolated, unprepared and ill-equipped work environments they found themselves in. The teaching and management autonomy that came with the job was highly valued. Teachers-in-charge pioneered strategies for constructivist EE teaching while developing student confidence and resilience.

Most centres had only one staff member inducing even greater innovation in the art of risk-management given a busload of students in isolated natural environments where the potential for injury in unfamiliar territory was very real. The one teacher cap was problematic and debilitating for centres. It restricted professional development opportunities, and importantly, centre capacity to build their EE reach.

Collaboration between the centres was intense given a keen and crucial thirst for learning and an innate desire to share their practice. Given the isolated nature, both physically and mentally due to EE/FSC novelty, the FSC educator conferences were integral to supporting the professional development of centre staff. Conferences engendered a learning community of practice and an understanding of the importance of the individuality of places and spaces and the diversity within place and community. There was empathy for each other's unique situation and the differences within their practice.

This chapter has charted early moves by centre staff to document the form and function, implementation and processes of EE and FSCs through the commencement of EE and FSC

policy development. This helped establish a process for the operation of the centres and importantly EE's place within the school curriculum. Plans and initiatives to progress EE and the FSCs and improve their working conditions, and security, were activated in an era where the education establishment and the Teachers Federation were often oblivious to EE/FSC existence and predicament. Good relationships, networking and being politically pragmatic were key.

The receding of the prosperous economy was mirrored in the social and political spheres with the neoliberal turn (neoliberalism is a conscious move by the capitalist class to regain power from the working class, generally through the movement of capital to labor [Harvey, 2007]). While the groundswell for FSCs continued with many supporting conferences within and outside the centres and the input of innovative professional development, the pushback from the NSW Department of Education's rationalisation impacted EE and the centres, and restrictions were placed on the *ad hoc* and opportunistic development of FSC. While practices, pedagogies and curriculum, in addition to enabling and inhibiting factors, are touched on within this descriptive reveal, it is the final chapters that will draw these themes into analysis.

CHAPTER 6: FURTHER GROWTH IN CHANGING TIMES

The 1980s saw personnel in the established centres, Association for Environmental Education [NSW] (AEE [NSW]) and the Gould League of NSW, working hard to gain traction for Environmental Education (EE) and the flourishing of the centres. This work came together toward the end of the decade with the release of the 1989 *EE Curriculum Statement* and the development of the *Field Studies Centre (FSC) Policy Statement* (1989). Additionally, an understanding and thus relationship with the Teachers Federation was developed. The mid to latter half of the 1980s saw the breaking of the embargo on FSCs, subsequently followed by the most progressive time in the history of EE in NSW. However, these events were affected by the biggest changes within the NSW Department of Education since the Wyndham era—changes aligned with a shift from a welfare economy to one of economic rationalism (Pusey 1991). The following chapter recounts some of the events that occurred, including the next sequence of FSC establishment, nested within the influences of some of the impelling and guiding international and national events.

International documentation filtered down to the national and state level. The World Conservation Strategy, including its title, translated into the National Conservation Strategy Australia (NCSA) with its national action priority of "Review, strengthen and develop in schools environmental education programs which have regard for the basic objectives and principles of the NCSA," (Department of Home Affairs and Environment 1984 cited in A. Gough 1997, xii). This included the subtitle of "living resource conservation for sustainable development" (A. Gough 1997, 30). This document, encompassing its conservative stance, was translated further into various state conservation strategies around Australia.

Meanwhile, in the early 1980s no centres were set up within the NSW Department of Education. Max Delaney carried out an inquiry into the growth of FSCs while there was an

embargo on centre establishment. There were dozens of requests for support for various developments to become a FSC within the NSW Department of Education.[66]

> *There was no policy of where they should be established, how many per region or per school enrolments or in relations to population centres and travel times from schools to FSCs or their location in a variety of environments.*
>
> AA

The inquiry resulted in a rationale for where they should be. One centre in each region was favoured by the inquiry, but the regional directors pushed for equality—they wanted the same number of centres in each region. While regional directors pushed for equivalent resourcing, some of the criteria developed were directly related to the educational vision of the centres.

> *One criteria for choosing a new site was the likelihood of it introducing a new ecosystem or natural physical study site. For example, there was no wetland environment to begin with so the Wetland Centre at Shortland was seen as a worthwhile proposition.*
>
> XB

Shortland Wetlands

With the Hunter Region abounding with significant water/wader bird sites, particularly migratory birds, there was significant interest within various community groups including the Hunter Bird Observers. In the early 1980s, the Hunter Wetlands Group formed within the Newcastle Flora and Fauna Protection Society.[67] There was concern about increased development on nearby Kooragang Island where large areas of wetlands and plant communities had been destroyed. Max Maddock, a keen birder, particularly egrets, and an Associate Professor in Education at the University of Newcastle, approached Gilligan and McDonald about the possibility of buying some old Marist Brother football playing fields

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66 Giblin, Warwick. 1979. Letter to Dr Douglas, Professor of Geography, University of New England. June 29, 1979. Mail May 2017.

[67] McDonald, K. 2004. Looking Back: Reflections on the Establishment and Evolution of The Wetlands Centre. Training Day for Staff, June 21, 2004. Email March 16, 2017.

and the derelict Hamilton Rugby Club building next to them at Shortland, the purpose being to develop educational wetlands as egrets nested in paperbark forest in close proximity to the area.[68]

Over several years, funds were sought from businesses and Council, and a Bicentenary grant was secured to develop the site. The Hunter Wetlands Trust was set up to manage the funds. Gilligan was able to persuade Alan Beard, the regional director of the NSW Department of Education, Hunter Region, to allow Shortland to be an annex of Awabakal. Staff were able to reside at Shortland as it was much more centrally located for school visits. Beard's commitment contributed to the Wetlands eventuality. Many within the community were involved in Shortland's establishment. Businesses assisted with the necessary work of constructing the wetlands. Gilligan, in addition to being the teacher-in-charge, became the director of the Wetlands Centre Incorporated. The centre was managed by a Board elected by a Council, elected by the Hunter Wetlands Trust.[69] The Shortland Wetlands was opened by Neville Wran in 1985. There was a lot of publicity about these proceedings within the local news and enormous school patronage followed for many years.

The Battle for Greater Teaching Capacity

There was considerable quarrelling and wrangling within the bureaucracy and government of the day in order for new FSCs to flourish. The hiatus in FSC establishment ended about 1985/1987 with Education Minister Rod Cavalier's (1984-88) push for the establishment of the Field of Mars in his electorate. There was also strong support for a centre from the Ryde-Hunters Hill Flora and Fauna Preservation Society. Apart from strong advocacy for the setup of the Field of Mars FSC within his own electorate, there was a political connection within his office. Invited to visit FSCs, he visited Muogamarra and Shortland Wetlands to observe

[68] McDonald, K. 2004. Looking Back: Reflections on the Establishment and Evolution of The Wetlands Centre.

[69] McDonald, K. 2004. Looking Back: Reflections on the Establishment and Evolution of The Wetlands Centre.

their operation. Teachers-in-charge were advocating for more teachers and better conditions. They wanted to ensure the centres were given the presence and resourcing to ensure their facilities had security from the threat of closure, and could operate at capacity—ensuring that EE was effectively implemented and reaching as many people as possible.

In 1986, only Wirrimbirra and Wambangalang had assisting teachers.[70] Miraculously, Cavalier found some provision to allocate seven teachers at his discretion, so he appointed an extra teacher to most of the centres. He had to fight within Cabinet to have Treasury increase the budget to support the extra staff and to establish the Field of Mars. He had been impressed with what Gilligan was doing with the Wetlands so one teacher went to Awabakal, operating out of the Wetlands.

Muogamarra missed out on an assistant teacher, much to Foott's dismay given his advocacy. Two teachers went to the Field of Mars FSC, also located in the North Sydney region. Up on the North Coast, Dorroughby also effectively missed out on acquiring an extra teacher as the regional director on the North Coast was keen to get Cascade FSC within the centre network and so he allocated Dorroughby's extra teacher to Cascade. Clements, teacher-in-charge at Dorroughby, over 250 kilometres away, was responsible for them and the centre—further staff funding was not forthcoming.

So, centre politicking suited Rod Cavalier's political agenda.

> *But that was because we were politicking and it happened to suit his politics. The Department of Education did increase the number of centres but I would suggest it was because of local pressure both from within and outside the Department rather than any bureaucratic policy… but certainly, at the time when Rod Cavalier was in we were really under the pump. I think he was the reason the Department got told to pull its head in because that was when they were trying to get rid of FSCs as that is when I sighted that memo about the department divesting itself of FSCs to Sport and Recreation.*
>
> AA

[70] Urban Studies Centre Working Party Formerly Urban Studies Centre Subcommittee Environmental Education Advisory Committee. 1986.

Field of Mars Field Studies Centre

Community activism stopped the Field of Mars area, off Pittwater Road, East Ryde, becoming a landfill site. The Ryde-Hunters Hill Flora and Fauna Preservation Society had formed in 1966 specifically to preserve, conserve and manage the site. With a rich history of Indigenous and European occupation, the area supports at least six endemic plant communities, several of them critically threatened and vulnerable, including the vegetation of a small area of Wianamatta shale surrounded by Hawkesbury sandstone (NSW Government: Office of Environment and Heritage n.d. b; Pearson 1978). In 1978 the Field of Mars was a "natural, multi-disciplinary field studies centre" (Pearson 1978, 124) with the potential to be an Urban FSC. Managed by the Ryde Council with community support, it had an honorary ranger, Mr Wally Doyle. Time and effort made the Reserve an educational resource. The Council had established a visitor's centre and walking trails. Parts of the area, including an old rubbish tip site, had been revegetated/regenerated (Pearson 1978). There was advocacy to have the Field of Mars join the NSW Department of Education network and, with the Reserve in his electorate, Rod Cavalier wanted that too.

The Field of Mars FSC opened in 1987 with Howard Barker the first teacher-in-charge. Koettig, who had been teacher-in-charge at Longneck Lagoon before completing a few month's work with Geoff Young in the Curriculum Directorate, became the assistant teacher in April 1987. The Field of Mars is the only purpose-built facility on land owned by the NSW Department of Education. Because it was on Crown Land vested in the Minister for Lands, it, and a metre around its perimeter, became the property of the Department.

Baker only stayed for a few years and Koettig then became the teacher-in-charge with Steve Papp becoming the assisting teacher. Some centres had started employing casual teachers. Koettig had done so while at Longneck Lagoon FSC and continued this practice of increasing capacity at the Field of Mars. The input of enthusiasm and additional expertise in various areas of EE embellished centre activity in addition to building capacity.

Change on a National Front in the Late 1980s

On a national level, the Commonwealth Department of Arts, Heritage and Environment Conference in Canberra in 1987 gave some space for EE practitioners, academics and bureaucrats to reflect on the path EE was taking. Workshops outlined the inhibitors and enablers of past, present, and possible future practice for FSCs; primary and secondary education; and, teacher and community education. For NSW, the National Parks and Wildlife Service (NPWS), the Department of Environment and Planning, Technical and Further Education (TAFE), and some tertiary education and colleges of advanced education had delegates present. McDonald represented the Association for Environmental Education (AEE [NSW]) and Tribe attended (no organisation or allegiance specified). Baker was there representing the Royal Botanic Gardens. The NSW Department of Education had a few representatives in attendance including Young. For FSCs, Foott and Miller were in attendance while Rob Newton and Richard Jones represented Wambangalang.[71] Peter Hardy from the curriculum policy division of the Department was there, appropriate given the *EE Curriculum Statement* was due out in 1987 (Commonwealth Department of Arts Heritage and Environment 1987).

John Foreman from Arbury Park Outdoor School in SA led the FSC workshop. Many FSC workshop attendees favoured a name change to embrace the concept of EE rather than the confining connotations of "field studies." The centres were becoming more diverse and holistic with recreation merging with education programs.[72] Centre visitation numbers as a criterion for centre success was recognised as problematic. Envisaging a more expansive, holistic practice for the future, the involvement of community and diversification were elements touched on. There was a diversity of funding and management from government, community and private sources. It was noted that recognition attracted funds (Commonwealth Department of Arts Heritage and Environment 1987).

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[71] I suspect this is the same Richard Jones who was an advocate for environmental concerns as a NSW Legislative Council Parliamentarian from 1988-2003—he was well informed about EEC matters.

[72] Note this is in relation to FSCs in Australia so very broad.

There were several national influences of significance in the 1980s. *Our Country, Our Future*, a statement on the environment released by Prime Minister Bob Hawke, overlooked EE (Australian Association for Environmental Education [AAEE] n.d.). However, there was sufficient interest in EE in the late 1980s for a national EE strategy titled *Learning for Our Environment* to be launched in 1989 and, $400,000 in grants made available for EE activities (A. Gough 1997). Furthermore, for EE/EfS *The Hobart Declaration of Schooling*, the 1989 agreed-upon national statement for education, the top-down guidance to states and territories, provided the conservative statement of "understanding of, and concern for, balanced development and the global environment" (Ministerial Council on Education Employment Training and Youth Affairs 1989).

The history of Federal and state education in Australian has always seen the states guarding their curriculum from Federal intervention via resistance, both explicitly and implicitly (Reid 2005). This guarding against loss of curriculum power is by means of education ministers, bureaucrats, organisations and teachers. It is the Federal Constitution, Section 96, which allows the Federal Government to provide funding and thus exert some control over the curriculum and pedagogy (Mockler 2018, 345).

In the late 1980s, in an effort to control the open-ended spectrum of school-based curriculum design, John Dawkins, Minister for Employment, Education and Training in the Hawke government, attempted a top-down approach of control and accountability by starting a dialogue about designing a national curriculum (Mockler 2018, 346). Contention of consistency, non-duplicity, and the need to develop contemporary skills for improved economic performance started to challenge concerns about addressing the diversity of student needs, contexts, places and spaces. Dawkins' approach to a national curriculum as outlined in the *Strengthening Australia's Schools: A Consideration of the Focus and Content of Schooling* (1988), sketched a possible curriculum framework for major areas of knowledge in addition to what was considered appropriate skills and experiences for the schooling years (Mockler 2018, 346-347). Progression to, and substance of, a national curriculum has been an ongoing power struggle. Advancement has been generally dependent on state and federal political allegiance being in accord (Mockler 2018). Top-down pressure, from Dawkins as Federal Education Minister, to state and territory ministers, to education directors, saw

curriculum mapping exercises undertaken in the late 1980s. Fraught attempts to write a common framework followed (Yates and Collins 2008) with learning areas identified and statements and profiles developed (Mockler 2018).

Given the mooted national curriculum, there was lobbying for EE to be included as a curriculum focus (Australian Association for Environmental Education n.d.). The 1989 audit of EE curriculum materials and then a map of the cross-curriculum study of "environment" were set in train after the Australian Education Council widened its scope of the national collaborative curriculum activities. These activities came into being in 1994 with the release of *A Statement on Science for Australian Schools* and *A Statement on Studies of Society and Environment for Australian Schools*. There was advocacy for EE content with a social critical stance, called for through papers from academics such as Fien, N. Gough, Greenall Gough, Hunt and Malcom through the 1991 Australian Curriculum Studies Association Conference titled "National Curriculum for Environmental Education? Politics, Problems and Possibilities." Unfortunately, rejection followed; the socially critical stance was viewed as too critical (Gilbert et al. 1992; A. Gough 1997) by bureaucrats and politicians through the Curriculum and Assessment Committee. It became, "about" the environment. However, elements of the Tbilisi and other UNESCO statements on EE are within these national statements (A. Gough 1997).

Webb Field Studies Review Revisited on the East Coast of Australia

Meanwhile, another review of centres and EE was undertaken in the late 1980s. Webb at the Ku-ring-gai College of Advanced Education was once more contracted by the NPWS to review FSCs as an educational resource. This time funding restrictions limited the survey to the eastern states and caused author concern relating to research robustness (Webb 1989, vi). Some changes noted were:

- an increase in centres,
- an increase in the provision of integrated programs that were issue-oriented,

- increased use by school and community groups,
- greater delegation of responsibility to educational regions,
- greater EE interest in other government departments and community organisations,
- a shift in centre staff philosophy, and
- greater emphasis on concept and skills development and use of simulation activities. Additionally:

> *Staff continue to be capable, dedicated and experienced, and have to display a flexibility that fits them for any task; generalists syndrome.*
>
> (Webb 1989, vii)[73]

Limitations included that some educators had not processed the difference between EE and natural history or ecology—the "taking action" component, and the efforts within non-formal EE were still problematic (Webb 1989). Once more, Webb's study included all types of FSCs. The Webb study indicates that in both NSW and Queensland the Departmental networked centres provided EE in-service training, resources and advice to schools and that the close association of EE to FSCs in NSW prompted a renaming of the centres to environmental education centres [EEC] (Webb 1989). There is, however, documentation that contains both the FSC and EEC nomenclature for the centres within this study from about 1987 until 1999 when they were officially renamed EECs. This indicates that the name change may have been a little problematic and some of the arguments are documented in study interviews. Some of the earlier teachers wanted to stay with field studies because they were driven by it and its connection to the curriculum—getting students out of the classroom into the natural environment. Some felt they had worked hard to build up a strong following as FSCs and that it may be difficult to operate with a title that could have emotive connotations. Since the change, there have been periods where the political landscape is particularly unfriendly to the term "environmental."

[73] Webb noted that private enterprise was starting to fill a gap but essentially for adult education.

> *And there were some people who were not overly keen on that, they felt that we were better off sticking very closely to the curriculum and supporting curriculum with fieldwork. But with the environmental education policy for schools it gave us that imperative to start to provide something to support schools as they try to develop environmental management plans and try to integrate environmental education with their other curriculum areas.*
>
> QA

Webb's other recommendations included:

1. a shift in focus from primary to secondary education with the compartmentalisation of disciplines within high school being problematic,
2. a call for each state to have top level joint policy between NPWS and education departments for effective community EE,
3. greater involvement of NPWS in EE rather than interpretation,
4. a computer network for centres and EE coordinating bodies, and
5. greater preservice and in-service teacher education and greater research in specified areas.

Once more, there was a call for greater education across the non-formal sector. The study noted that most centres had high levels of regional support from within both Queensland and NSW education departments. Significantly, FSCs were supplying much of the expertise needed for teachers to develop their school-based EE programs. It was noted that support was shifting from the NSW Department of Education with NSW NPWS backing, to support dominated by other government agencies. Interestingly, the inadequate staffing of Rumbalara Rainforest Interpretive Centre is noted (pre-NSW Department of Education days). It was noted that in NSW the demand for EE and for new centres had increased with support for an urban and marine centre growing and greater community interest in EEC usage. Shortland Wetlands was given as an example of the change. The study juxtaposed EE development in NSW with FSC support, and Victoria where EE was school based with supports from Education and other agencies. Webb questioned the ability of teachers to incorporate EE into their programs successfully, particularly at times of EE in-service course and consultant cutbacks—where FSCs come into their own (Webb 1989, 28, 30).

The study notes greater restraints on centres with restrictions placed on centres. Permission for overnight stays was needed from the regional directors in NSW, and other unspecified restrictions were hampering effective use of FSCs in some regions. One wonders if one of these restrictions was the FSC educator being banned from visiting schools due to his long hair! Additionally, the cost of transportation to and from FSCs was often prohibitive (Webb 1989). Webb's research indicates little opportunity for professional development of centre staff for FSCs within the NSW Department of Education yet professional development was well attended by NSW Sport and Recreation facility and Queensland centre staff. Yet training in business management was essential for the effective running of FSCs. The study went on to suggest ways of staffing the centres to encompass informal education, including, but not exclusive to, other departments staffing centres on weekends. In a book chapter written about the same time as this review, "Off-School Field Centres for Environmental Education," Webb's characterisation of the existing situation for EE is still poignant and relevant today considering the crucial nature of EE/EfS and the massive task of teacher EE/EfS professional development required.

> *There is no way that any state system could move directly to school based environmental education without the in-servicing of teachers in the field, and that would operate best through the field studies centre network where teachers can see the way in which their pupils are changed by the field experience, and learn from the teaching methods of personnel operating the centre. Second, even if classroom teachers reached the point where they could effectively conduct their own school-based environmental programmes, there would still be a place for the experience of visiting a particular centre or facility.*
>
> (Webb 1990, 120)

Progression of EE in NSW and Within the NSW Department of Education

Over the period of the 1970s-1980s, the Museum Education Group, a formidable group, grew with the placement of officers within various organisations.

> *So you know, there were people in environment, in the EPA as it was then, the Environmental Protection Agency, National Parks, all of the museums, the Zoo. And then later, very briefly, but their incarnation as education officers didn't last very long, at the Wetlands at Homebush Bay. They were in, all sort of… disparate organisations, but they were all environmental education officers in their various institutions… It lasted for quite a few years. They did reports, we had meetings and what have you. They were very, very important in advancing the interests of environmental education as well.*
>
> KA

In 1985, the Environmental Education Officers Group[74] had been established after a recommendation in *The Scope of Environmental Education in NSW* (1984) report by the short-lived NSW Environmental Education Advisory Committee.[75] It was a joint venture between the NSW Departments of Planning, Environment, and the NSW Department of Education. Other interested governmental organisations were encouraged to join. The core group was the State Pollution Control Commission, The Department of Environment and Planning, NSW NPWS, Higher Education Board, Department of Technical and Further Education, and the NSW Department of Education. While the group understood it had no power or formal advisory function, the opportunity for networking and coordinating initiatives was perceived as valuable.[76] The museums and Taronga Park Zoo were represented at meetings. While no FSC teachers-in-charge were contacts for the Environmental Education Officers Group, Young, then a representative for the NSW Department of Education, was the contact person.[77]

As previously discussed, the idea of an environmental policy for NSW was first mooted at the Thalgarrah FSC conference in 1980 where the pressing need for formal documentation on the operation of FSCs and EE more generally was discussed. Over the years, there were

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[74] Environmental Education Officers Group. 1987. First Report: April 1987. Sydney, NSW. Mail July 2017.

[75] Other recommendations by this Committee were the expansion of FSCs, the development of EE policies, curriculum development by education systems, and training and professional development opportunities (Confidential draft discussion paper: The scope of EE in NSW, 1993 [A paper developed by the education section of the EPA for the EE Committee 1993]). May 12, 2017.

[76] Environmental Education Officers Group. 1987. First Report: April 1987.

[77] Barker was the contact person representing the Royal Botanic Gardens at the early Environmental Education Officers Group meetings. McDonald represented the Higher Education Board.

committees to write and re-write the EE policy for schools with heavy representation of FSCs.

> *I think we always in the field studies centres, from the time I was there, we always thought environmental education policy but we weren't quite sure whether there was a real willingness to see one through. And so it wasn't just us pushing the government and the bureaucrats, it was the Association for Environmental Education as well. But eventually we learnt that yes, there would be one definitely being developed.*
>
> HA

Haddon stepped down as EE consultant sometime in the mid 1980s.[78] Schoer took on the role during 1985 and had a part to play in pushing the policy forward. Young, a teacher from inner Sydney, who had experience in EE and Aboriginal education, then took up the EE consultant position.

> *He was right into Aboriginal scenes and inner-city education pushes and whatever… he'd been doing some good values type clarification activities. You know values spectrums and all this sort of thing, which we got into increasingly as we started to see our role beyond just field studies.*
>
> HA

Young had significant input into the *EE Curriculum Statement*—developing it to completion.

> *We wanted a policy to hang our teaching on and we wrote it actually with the help of Geoff Young…. The first one was commenced with a conference of about 30 or 40 people up in the Blue Mountains made up of teachers, consultants and FSC staff. Geoff Young who was the Environmental Education Consultant in Head Office was the main one who pulled it all together. But I think everybody from an EEC, or field studies centres as they were called at that stage, plus consultants from the Department. I don't know if there were independent schools there or not. I think it was an internal thing so it was all Departmental people. Because the Environmental Education Policy was going to be integrated into all subject areas, science, agriculture, geography consultants, etc from Head Office were there…. And the field studies centres were involved right from the start—all of us. Geoff invited other people to come from different curriculum areas for their input and then it was developed over a number of conferences and a few heated moments.*
>
> AA

[78] It is difficult to ascertain exactly what happened with Haddon. Apparently, he sadly died quite young due to the long-term consequences of a spider bite.

Foott wanted the inclusion of the issue of population but Young did not. Population is an emotive topic within the Australian discourse and is often silenced—puzzling given that it has such huge implications for a hot, arid country with a small carrying capacity (The Parliament of the Commonwealth of Australia 1994). Can we assume the chances of the EE statement gaining approval were seen as minimal if the topic of population was raised? In addition to the population debate, a few of those involved in the development of the curriculum statement found that it was rather busy with developers wanting it to be all things to all people—detracting from the main focus of EE.

> *I said that when we were writing the environmental education policy. "Don't blur it with all this other stuff." We used to have quite long discussions with Geoff Young about it saying, "Look, it's not a policy for everybody. It's an environmental education policy"... I can remember it took a while to swing Geoff around on some issues. Geoff Young that was... this policy had to be mandatory, which was a huge stumbling block. And there were a couple of other things that, if you'll pardon the term, gave it balls. And eventually after some debate and lobbying, those essential elements were accepted into it. It ended up being quite a good statement I thought.*
>
> GA

Syd Smith supervised Young during his time developing the curriculum statement and assisted with pushing it "up the rungs" within the NSW Department of Education. Smith had started in the Curriculum Directorate in 1978 as a geography consultant sitting across from Haddon—thus, he had a good insight into the EE area.

Interestingly, the North Coast Region had developed an environmental policy. Stan Gilchrist, Clements' boss, had supported Clements and his network of like-minded professionals in this venture by supported monthly development meetings and costs, in addition to the necessary Departmental advocacy. The policy was being implemented but was awaiting formal recognition while the state-based education statement was developed.

The 1988 state election saw a change in Government with the replacement of Cavalier with Terry Metherell as Education Minister. They both were responsible for unpopular changes in education which decentralised the power structure further away from the bureaucracy of the centre (MacPherson 2015). Given the temper of the times and thus downturn in policy, both Cavalier and Metherell had a poor reputation within the education community generally.

> *He caused a lot of trouble, Terry. We all went on strike and I said, "Bring back Rodney."*
>
> AA

However, both had a positive effect on EE and the development of FSCs. While there was an advocacy connection with Rod Cavalier, when Metherell was elected, the baton was passed to Tribe who had been lobbying Metherell for some time. Metherell, together with Tim Moore, the Environment Minister, pushed to further the environmental cause and proved very effective with the EE statement, new centres and the EE committee set up on their watch.

Significant Support for Environmental Education

Environmental Education Curriculum Statement K-12 and FSC Policy

The *Environmental Education Curriculum Statement K-12* (1989a) was released in 1990 after a long period of gestation and birth. To assist in its implementation, a launch support package included an introduction kit, a reproducible explanatory pamphlet, a poster, and a video which broadcast on SBS in June 1990 (NSW Department of School Education 1990). The Statement declared that, "It is mandatory for schools to ensure that environmental education is incorporated in the whole school curriculum." (NSW Department of School Education 1989a, 10). EE/EfS was identified as a cross-curricular component of education.

> *Environmental education need not be seen as a totally new and separate subject but rather as an orientation or emphasis within the existing total curriculum. It is best approached as an across-curriculum initiative. By integrating environmental education within broad learning areas students can develop understandings, skills and attitudes which enable them to participate in the care and conservation of the environment.*
>
> (NSW Department of School Education 1989a, 5)

Significantly, and possibly ironically, the Statement calls for the consideration of investigating controversial issues within the guidelines of the 1983 "Controversial Issues in Schools memorandum." The Curriculum Statement was substantial with 90 pages introducing EE, curriculum implementation, program integration, a K-12 framework, assessment and evaluation, learning processes including problem solving and sensing the

environment, learning strands and resource support suggestions (NSW Department of School Education 1989a).

Other developments in 1989 included a FSC guide for teachers sponsored by Comalco (promoting recycling), and a FSC guide (not sponsored by Comalco) with an introduction by Minister Metherell. Importantly, a policy statement for field studies eventuated, produced with significant input from a report by a field studies working party titled *Working Party on Environmental Education Centres [Field Studies Centres]* (NSW Department of School Education 1989b, c, d).[79] The *EE Curriculum Statement* and FSC policy were two documents that centre staff had been working on for close to 10 years. The FSC policy working party report acknowledged and thanked the staff of EECs, and the regions, for the compilation of the material within the report. The 1989 FSC policy statement preamble recognised EE as a curriculum priority in addition to acknowledging its intrinsic cross-curricular nature. It recognised the diversity of centres and the central and regional initiatives that responded to local community needs in developing them. EE was defined as students acquiring appropriate knowledge, skills and attitudes to help them form their own judgements about socially and environmentally responsible lifestyles so they can participate in environmental decision-making.

> *Field Studies Centres are part of the Department's formal provision for environmental education throughout the state. They act as resource centres by offering learning experiences to visiting groups of students at all levels from Kindergarten to Year 12, in-service training for teachers and an advisory function for schools. They also provide opportunities for co-operation with community groups. It should be noted that the classroom, the school and the local environment will provide the primary setting for environmental—learning and for developing field study skills. Visits to Field Studies Centres should complement and augment the school's environmental education program across the curriculum.*
>
> (NSW Department of School Education 1989b)

The purpose of the FSC policy statement was to clarify the role of centres and to provide working guidelines. Staffing, duties of staff; conditions of employment; guidelines for selection, induction, and professional development of staff; and travel and safety guidelines

[79] NSW Department of Education. 1987. Report of the Working Party on Environmental Education Centres (Field Studies Centres). Working document. October 8, 2017.

were included. Options for a diverse range of funding sources were outlined including the option for not-for-profit charging of fees.

There was a new rush on centres. This was part of a suite of EE reform that the newly elected Liberal Greiner Government planned, heavily supported by Metherell. This included the "Greening of Schools Program" launched in June 1989 (NSW Department of School Education 1989a).

The *EE Curriculum Statement* influenced the future development of the centres and there was discussion about changing the name of the FSCs to environmental education centres (EECs). This robust statement acknowledged the National Conservation Strategy Australia (NCSA) listing of EE as a national priority area for improving capacity to manage the environment wisely (NSW Department of School Education 1989a, 2). It also reflected EE/EfS characteristics similar to those within the UNESCO documents, the Curriculum Development Committee (CDC) policy statement, and other states' policies (A. Gough 1997). The centres were heavily involved in the Statement launch and rollout into schools through in-servicing, presenting at staff meetings, and the delivery of centre teaching programs and special events—they lead implementation. The *EE Curriculum Statement* listed FSCs as an EE resource.

> *But one of my key roles was rolling it out in schools when I first started… There was a lot of momentum at the time. And that is probably one of the reasons why the* Environmental Education Curriculum Statement *got a look in and went forward. A lot of other things were happening and schools were picking up the baton already. So the hardest thing was going into schools that didn't have anything going, but I really can't remember going into any school that wasn't…. didn't have a positive leaning.*
>
> EB

A Rush of Centres

The number of established centres started to increase in the late 1980s early 1990s. The Riverina FSC was founded in collaboration with the Soil Conservation Service in Wagga Wagga, the first in this region. Cascade, Warrumbungles, Rumbalara, Botany Bay, Observatory Hill and Mt Kembla/Illawarra FSC were all set up in 1989-1990 with Terry Metherell as Education Minister pushing the EE agenda as he promised when in opposition.

Muogamarra Field Studies Centre Becomes Gibberagong Field Studies Centre

Some major changes took place at Muogamarra/Gibberagong in the second half of the 1980s. After much advocacy for another teacher, Steve Wright came on board in 1989. Wright was involved with a few of the EE support groups including the NSW Gould League Council and the Manly-Warringah Region branch of the AEE (NSW) where he held the position of publicity officer in the early 1980s (Association for Environmental Education 1983). He had been involved in a committee that was creating posters advertising the location of FSCs and their function. By the time Wright started at Muogamarra it had been moved to the old NSW NPWS training centre at Bobbin Head, Ku-ring-gai Chase National Park (NSW National Parks and Wildlife Service 2002). There was a teaching facility with a science laboratory, library and overnight accommodation for 30 students. It had been shifted in 1984 from Muogamarra Nature Reserve due to the perceived fire risk given that there was only one track in and out (Fox 2016; NSW National Parks and Wildlife Service 1998, 2002). An interim move was made to Kalkari in Ku-ring-gai Chase National Park and it was gazetted in 1985 as Kalkari FSC, a specific purpose school (NSW Department of Education 1985). Foott had requested a shopfront site in Hornsby at the time of the move, so they could have an environmental presence with the community as well as teachers and students.[80]

In 1987, there was a name change from Kalkari to Gibberagong meaning "plenty of rocks," the Aboriginal name for the local creek (NSW Department of Education 1987; Pocket Oz Travel and Information Guide Sydney 2015). Incidentally, on the back of producing an Aboriginal Teachers Resource Kit, Foott at Muogamarra/Gibberagong received a grant to employ an Aboriginal person for 12 months for program support. When the Aboriginal Education Unit was set up within the NSW Department of Education head office, Muogamarra was a site for in-servicing and the running of associated programs. There were Aboriginal student camps and Aboriginal Teachers Aides courses with up to 40

[80] Another EE/EfS dissemination strategy was having more staff within centres to travel to sites within or near schools to teach, as opposed to more centres. This was advocated by centre staff within the Department of Education from the very start.

participants—new in the mid 1980s. All these activities assisted in raising the profile of Aboriginal Education in NSW.

> *Owen Dennison and David Ella are two people who have had a significant input to the teaching programs particularly traditional cultural perspectives at some centres—particularly Gibberagong and Rumbalara EECs—and through them and the individuals there at the time perhaps had influence to some degree on other centres.*
>
> PA

There was something of a battle to induce the NSW Department of Education and NSW NPWS [Lands] to allow camping within the Park/Reserve. The Muogamarra field site was used for classes between April-September with sites in Ku-ring-gai Chase National Park used alternatively (Webb 1989).

Cascade Field Studies Centre

In 1976, the Cascade Public School was closed due to declining numbers but given it held important in-servicing environmental education workshops, a FSC was proposed for the site (Bridger 1997). Weekend camps were held and under the guidance of Geoff Tomlin, later a casual teacher at Cascade FSC, the Mobong, Showerbath, and Cascade walking tracks were developed. The centre was used by Dorrigo High School in the early 1980s and the old library from Dorrigo Public School was moved onto the Cascade site and became the dining hall. Cascade FSC's office was a state forest worker's hut moved to the site with the help of the Rotary Club. A few locals looked after the site until it became an annexe of Dorroughby FSC in 1987 with Geoff Bridger working at Cascade through the teacher-in-charge of Dorroughby FSC, Clements. In 1989, Bridger became the teacher-in-charge of Cascade FSC, a residential centre within a rich history of timber getting in NSW (Bridger 1997). One of the arguments for its development was for students to learn about these areas in an immersive way.

Warrumbungles Field Studies Centre

Jack Renshaw (Labor Premier from 1964-5) helped develop the Warrumbungles National Park, which was in his electorate. Incidentally, Strom taught Renshaw's child at Broken Bay so they had a connection (Fox 2016). Strom was on the Trust for the National Park and closely guided the Warrumbungles development.

Many interests came together to form the Warrumbungles FSC. It had been proposed by the head of Siding Spring Observatory, run by the Australian National University, in collaboration with the NSW Department of Education, working out of Tamworth, on the edge of the Warrumbungles. Don Goodsir was instrumental in the Warrumbungles FSC establishment. He was on the National Park Advisory Committee. Goodsir was a teacher, keen on the environment and active within the NSW Gould League Council.[81] Jane Judd, a science teacher who was working in a local Catholic school a few days a week, was offered two days a week to set up the centre in 1989. According to an interviewee, the extra staff member that was supposed to go to Thalgarrah through the Rod Cavalier staffing increases ended up at the Warrumbungles FSC. Initially there was no building and Judd attracted centre visitation while working out of the Coonabarabran cluster office. Staffing consisted of Judd and a part time clerical assistant. A portable building, an old library from one of the Tamworth schools, was delivered to the proposed FSC area in 1992, an old staff room arrived for an office a year or so later, a general assistant arrived about the same time, a sitting area was landscaped between the buildings, and a toilet arrived a year later. Schoolwork took place in bushland or at the Observatory given that students came in busloads and these numbers could not fit in the classroom. Visiting schoolteachers took responsibility for camping with students at the National Park facilities. Departmental policy changed continually while Judd continued to develop programs, with input from visiting schools. Initially the Observatory was a main focus, but visitation by the Warrumbungles FSC was phased out when centre visitation became a money-making venture for the Observatory.

[81] Tribe, D. n.d. Donald Henry Goodsir 1937-2010. Email November 21, 2017.

Riverina Field Studies Centre

The Soil Conservation Service built an education centre on their property at Wagga Wagga with funding from a Bicentenary grant in 1988.[82] This was at the time that the NSW Department of Education was looking for a place to operate a FSC. The Department thought it only right that the Riverina should have a centre given that all the other regions did—peer pressure at the regional director level. The driving force behind the move was a number of Soil Conservation Service scientists and soil conservationists. The Soil Conservation Service scientists were keen to pass on their knowledge of natural resource management but wanted professional educators to handle the students while they continued their work—teaching not being their forte. Operationally, the NSW Department of Education supplied the furniture while the Soil Conservation Service paid for the utilities. Both the Soil Conservation Service and the NSW Department of Education supplied an education officer, Garry Faulkner for Soil Conservation Services and Keith Collin for the NSW Department of Education.[83] Collin had worked at Jindabyne Sports and Recreation Camp, giving him the incentive to try for the Riverina position. He had to work out of the regional office for the first six months until staffing allocation approval by Education head office came through. There was a Departmental agreement to provide EE services for both public and private schools. Centre gazettal occurred on 2 May 1989, along with Warrumbungles and Cascade, signed off by Terry Metherell.[84]

There was a collaborative working environment for many years. The centre developed excellent working relationships with schools in the region through their clerical assistant who was well connected to other school administration staff, and through the Primary Principals' meetings. This was a connection other departments and organisations, including other EE centres/bodies, did not have. Tragically, Faulkner passed away and not long after the Soil Conservation Service amalgamated with other organisations—a series of organisational

[82] Collin, K. 2006. History of the Riverina Environmental Education Centre. Email July 10, 2017. Note that Bicentenary grants have been instrumental in progressing EE and the EECs.

[83] Collin, K. 2006. History of the Riverina Environmental Education Centre.

[84] Collin, K. 2006. History of the Riverina Environmental Education Centre.

name changes and downsizing occurred. The original Soil Conservation Service interest in education dissipated. Charles Sturt University and other organisations were and are important collaborators in numerous projects. Program examples include: Saltwatch; an Endangered Native Fish Breeding Program; Catchment EE Package K-6 CEEP Kit; the Murrumbidgee Water Quality Kit; and the Geographic Information Systems resource to name a few. A group of critical friends, the Riverina Environmental Education Centre Program Working Group, has replaced the original management group and spend time ensuring all centre programs are relevant and current ("History of the Riverina Environmental Education Centre." K. Colin 2006, emailed July 10, 2017).

Observatory Hill Field Studies Centre

The Gould League of NSW and the AEE (NSW) had planned an urban FSC for some time.[85] There was a perceived need for students to engage with urban issues—to understand the environment that most of the population is immersed in and its significant history. There had been an Urban Studies Centre Subcommittee within the abolished EE Advisory Committee.[86] The AEE (NSW) had made a deputation to the Minister for Education, Rodney Cavalier, and consequently the Minister had requested an appropriate building from the Premier, Bob Carr, with the proposition well supported. Some departments/organisations did not want government bureaucracies involved and others offered their support—though some offers seemed like self-interest veiled in insubstantial backing. Generously however, the Gould League of NSW offered a generous $20,000 for the proposal. The EE Advisory Committee had been disbanded due to the Government wanting fewer committees; however, so much work had already taken place in progressing the centre proposal that the NSW Department

[85] Urban Studies Centre Working Party Formerly Urban Studies Centre Subcommittee Environmental Education Advisory Committee. 1986. Report on an Urban Studies Centre for New South Wales. Sydney, NSW: Observatory Hill Field Studies Centre. Mail July 2017.

[86] Urban Studies Centre Working Party Formerly Urban Studies Centre Subcommittee Environmental Education Advisory Committee. 1986. Report on an Urban Studies Centre for New South Wales. Sydney, NSW: Observatory Hill Field Studies Centre.

of Environment and Planning invited members of the dispersed sub-committee to regroup as a working party. *A Report on an Urban Studies Centre for New South Wales* was finalised in June 1986.

Observatory Hill FSC is located in an old Fort Street Girls High School building that had been utilised as offices by the NSW Department of Education, next to Fort Street Public School. It is a prime historical location within The Rocks overlooking the Sydney Harbour Bridge (Dowd 1993). In addition to the centre's focused programs, they offer urban trails and resources for teachers who prefer independent work. Paulene Dowd was the first principal of the centre which started in 1990 and Glen Halliday started as a teaching assistant about the time of the rebadging to EEC (1999). Due to the nature of the centre, there are many partnerships with various departments in addition to partners in the various programs that the centre undertakes.

Rumbalara Field Studies Centre

Barry Cohen, a former Federal environment minister in the Whitlam era, supported the use of an established rainforest centre as Rumbalara FSC. There was also support from Chris Hartcher, the local Liberal state minister and then Minister for the Environment. Cohen had been heavily involved in the original rainforest information centre that was built with a Commonwealth Bicentenary grant when there was a drive to save Australia's remaining rainforest. When the original community group ran into difficulty with the centre as a commercial venture, the Gosford City Council approached the NSW Department of Education to take over the centre as a FSC. So, the NSW Department of Education took on a centre that was unable to handle the resourcing, both in financial and voluntary labour terms.

Strom and the AEE (NSW) were influential in the establishment and progress of Rumbalara FSC, which was designed as a one-day centre (Brown 1991a). The building was sited on the west-facing slope of the steep Rumbalara Mountain, close to Gosford for accessibility, rather than near the rainforest on the other side. In 1991, the centre was opened by Virginia

Chadwick, Minister for Education, Dufty became the principal, and Ross Wellington became the assisting teacher. Both Dufty and Wellington became involved with many of the local environmental committees and they included knowledgeable and experienced community members in resourcing their activities.

Rumbalara had many community links along with links with councils and the NSW NPWS, and had student and teacher representatives on its committee. There were over 50 teaching sites involved at Rumbalara, ranging from urban to coastal to agricultural. Amongst other activities, Rumbalara provided rainforest experiences where students became familiar with leeches—changing preconceived ideas about the unknown.

There was a positive and productive relationship between environmental educators at Rumbalara, Wellington and Dufty, and Maddock, the teacher educator, environmental educator and egret researcher/enthusiast from the University of Newcastle. In the 1990s, Maddock was undertaking an egret-tagging and recording program in the Hunter and Central coast called Project Egret and was encouraging others to record tagged egrets. Maddock was often side-tracked looking at egrets while on student excursions. On one fieldtrip to Terrigal Lagoon on the Central Coast, Wellington and Dufty mischievously made an egret out of cardboard and placed it in the reeds early in the day so that it would be in place on the other side of the lake when they visited the site with Maddock later. Intermittent rain and a southerly had embellished the look of the fake egret with its head drooping as if feeding. Maddock, who had poor eyesight anyway, was completely taken with the imposter and started taking notes on his sighting. Dufty and Wellington had trouble keeping their composure through the lesson, having to take a few minutes out for uncontrollable laughter. The pair confessed at the end of the day after the students had departed and Maddock was a very good sport about it, the three remaining friends. However, Maddock has his revenge not long after, calling them both scoundrels, publicly, at a conference.

Botany Bay Field Studies Centre

Don Goodsir, the Cluster Director for Miranda and responsible for EE in the Metropolitan East Region, was instrumental in establishing the Botany Bay FSC and Observatory Hill FSC in 1990.[87] The moment was right given the 1988 Bicentenary. Apparently, this was another instance of two teachers intended for one centre spread across two centres—meaning greater range but diminished impact. The principal of the Royal National Park FSC initiated some of the first programs and organised the opening ceremony in 1990 before John Atkins became the Principal in 1991.[88] For the first four years the centre worked out of the NSW NPWS offices in Botany Bay National Park. Metropolitan East Region Properties funds saw the refurbishment and thus relocation to the "old Kiosk" building. As with some of the other centres, there was no formal agreement negotiated for the building—a headache that Smith tried to unravel and settle while in a position to do so.

The core of centre programs revolved around the history of Botany Bay, the wetlands and the marine ecosystems while there was increasing provision for sustainability education programs, often in collaboratively with their Regional counterparts, Royal National Park and Observatory Hill.[89]

Mt Kembla/Illawarra Field Studies Centre

In the beginning, Mt Kembla FSC was an old closed Broken Hill Propriety (BHP) colliery on 260 hectares on Farmbrough Road, West Wollongong. The site included four heritage-listed houses, with gardens designed by Edna Walling, a well-known landscape gardener. Mt Kembla FSC was established by an enthusiastic consortium comprising amongst others NSW NPWS, NSW Department of Education, and the Department of Tourism, Sport and Recreation, who wanted to develop the site as the gateway to the Illawarra Escarpment.

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[87] D. Tribe. n.d. Donald Henry Goodsir 1937-2010.

[88] Atkins, J. 2006. Botany Bay Environmental Education Centre. Email June 28, 2017.

[89] Atkins, J. 2006. Botany Bay Environmental Education Centre.

Laurie Kelly, the local Labor Member for the Illawarra, had pushed for a commitment before Labor lost government in 1988 and a $25,000 grant was secured for the setup. Stuart DeLandre, who had an extensive history of teaching EE and a graduate diploma in EE in addition to further study in ecology and curriculum development, was seconded to set up the centre and refurbish it as a suitable educational centre. He was active within the AEE (NSW), had written for the Science Teachers' Association, and had been a part of a regional team contributing to the draft EE statement about the early 1980s. DeLandre become the Principal of the centre. There was great regional support from the regional director, Dr Terry Burke, and Allan Cobbin, the Director who had taken charge of EE within the South Coast Region. The appointment of a second teacher was a regional decision. The aim of the centre was to teach EE to students—not to be a consultant. A significant development at the centre instigated by Cobbin, was the securing of $3,000p.a. seeding grants for EE action projects within schools. These grants had a big impact in the area and continued until BHP was struggling in the early second decade of the millennium.

The Mt Kembla FSC became the Illawarra FSC when they were forced to relocate after the floods of 1998 caused major slippage and the site was declared unsafe. DeLandre and his assisting teacher worked from the boot of their car with Illawarra Senior Campus as a base—sense of place, which was a feature of the experience for many of the students as well as the staff, was lost. In 2003, with the NSW Department of Education and Training experiencing difficult times and the venture seeming too difficult, one of DeLandre's directors, Alan Thomas, secured a site at Killalea State Park, administered by the NSW NPWS. A demountable classroom was transported to the site to accommodate the centre. The site was in close proximity to many schools and could take advantage of two beaches, an estuarine environment, and rainforest ecosystems for EE purposes.

Significant State Educational Reform and Funding Opportunities

Overshadowing the exciting and progressive EE changes Education Minister Metherell had initiated in conjunction with Tim Moore, Minister for the Environment, were the changes within general governance, and education. They altered the opportunities in both explicit and

implicit ways. The 1980s saw a "back to basics" move with a management review in 1988 (Harris 2001) and a corporate planning process favoured with the release of the Scott Report in 1989 (Frew 1990). These were the greatest changes in education since the Wyndham Scheme, affecting the academic stronghold on curriculum and enabling the devolution of education to a regional and local level (Hughes and Brock 2008). The Education Reform Act 1990 (NSW), on the recommendations of the Scott (1989) and Carrick Reports (1989), in addition to the 1988 White Paper that introduced the NSW Board of Studies (BOS [1990-2013]) as the curriculum development authority, introduced elements of "competition, choice, diversity, efficiency, standards, accountability, performance indicators, deregulation and privatisation"—public managerialism (Hughes and Brock 2008, 142).

Innovative Capacity Building

In addition to the small school funding allocation there were sometimes extra Departmental or other department monies available to the FSCs, such as from the NSW Office of Environment and Heritage program. The extra NSW Education Department funding was very dependent on the advocacy skills and relative power of the person in charge of the centre. There may also have been money associated with professional development or Aboriginal education that could be justified as a centre expense within the Departmental budget.

Commonwealth Government funding also played a significant role in the establishment and development of the centres. Many of the FSC staff were skilled grant writers and grant recipients. Federal grant success allowed the centres to build their facilities and capabilities in various ways and it was during this time that they gained some potency within the NSW Department of Education. An example of this funding was a Commonwealth program from the Keating era that gave unemployed people experience in a chosen field. For FSCs, this funding provided much in the way of trail and signage construction and revegetation work, in addition to money for staff and, at times, vehicles. At Dorroughby, for instance, Clements' experience of losing a highly sought-after assistant teacher to Cascade FSC motivated him to fund additional staff. Through Federal and state grants, Clements was able to extend Dorroughby's potential. At one stage there were 14 people on a labour program, two and a half teachers, sometimes three, as well as extra hours for the school and general assistant.

Clements always had someone trained for the many occasions that he was called on to participate in in-services, principal days or new curriculum initiatives. Clements was accountable for four grants at one point.

> *So that's where I… well I didn't start it with that in mind initially but I was looking for a way in which I could find the funds to employ my own assistant teacher. And what happened is that as I went through the process of applying for these grants to establish rainforest, et cetera, et cetera, I figured that I could run them in a manner that required me to manage that undertaking. So therefore I could justify and it was accepted, that I could use funds to employ someone to replace me. So through the back door I ended up with… well I ended up with more than two teachers. But even today right, at Dorroughby Field Studies Centre they still only have one point something teachers allocated. So, it hasn't been solved. Because these things stick.*
>
> IC

The "round peg/square hole" syndrome the centres experienced extended to the Departmental understanding of their unique funding sources. Clements recalls an interview with a Departmental representative:

> *Without having any comprehension of what I was doing, what I was up to, the programs that were being run, he launched into this critique. Everything I showed him he criticised. And he pointed out that there were these formats that had been introduced that the principals had to fill out at the end of every day and compile at the end of every week and it was reporting all these different aspects that were in different fields and blahblahblah, he went on with this. And I tried to gently say, "Well look, I don't have a fixed client school-base, I don't have parents and citizens association, dadadadada." And this guy kept… You know, I tolerated it… he's the boss, you know, I had to listen to what he had to say, and I did try and argue my point of view a couple of times but I found it was pointless. And as he left he said, "Look, I'm going to be putting in a negative report." I said, "Oh, alright then. But who are you going to put in the negative report to?" He said, "Well, what do you mean?" I said, "Well the funding that I'm receiving from the Department of Education, that amounts to, apart from wages for my two auxilliaries, which I partly pay, is $25,000." "Oh." "And then I'm on this other budget here from a state organisation which is $60,000. And then I'm on this other budget from the Commonwealth and that's approaching half a million." … "So, which one?" I said, "If you criticise me and all these programs that we've set up with all this funding that we've got, well the system's going to miss out on all this money." Anyhow, he got the message and he got all red faced. He never backed down but he took off with his tail between his legs.*
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> IC

During the 1990s, Rumbalara had acquired a vehicle through Australian Government funding yet it was difficult to get permission to use it for school and site visits. Even though the vehicle was acquired by Rumbalara, the NSW Department of Education and Training were

the managers of it and at one stage wanted the vehicle returned. Dorroughby had the same issue with a vehicle acquired through Federal Government grants:

> *I ran these programs to have surpluses. And under one surplus I could justify, and it took me about three or four years to accumulate these side funds to buy a car… And I went ahead and I bought, through the government, a little Subaru Forester sort of thing.*
>
> IC

Apparently, the NSW Department of Education and Training had to refund Dorroughby $25,000 after it confiscated the vehicle. At an earlier stage, after a long wait, and a favourable supervisor, Dorroughby did acquire a Departmental car—yet it was not appropriate for the conditions.

> *And he tried everything he could and he got me a car in the end. They got me a Mitsubishi Colt… Can you imagine that out on this four-wheel-drive mud and slush? And it was shredded by the time I'd had it a couple of years. And then they took it back and they wouldn't give me another one. So that's why I had to turn around and buy one.*
>
> IC

Creative fund raising through various grants and sponsorships assisted centres to build capacity and when the Education Act 1990 (NSW) brought in reforms, the centres were viewed as cost recovery centres. The 1990 Education reform was to provide for centre global budgets, increasing accountability and administration requirements. It did, however, streamline the process of employing casuals.

> *I think initially all/most centres had one teacher. The first to have two teachers were the overnight centres. It became an issue with the day centres as many had the opportunity to book in more schools but didn't have enough teachers to support the visiting schools. It also coincided with the emphasis on numbers of students/schools using the centres. Administration and accountability requirements also increased the need for a second teacher. It was more difficult to hire a casual teacher before EECs had their own "global budget" (which gave them more autonomy). Prior to this a teacher-in-charge had to do a lot of paperwork via the regional office, which had control of all the funds, to get a casual teacher.*
>
> JA

Visitation Cost to Public Schools

Costs for students has always been a fraught issue. While being able to employ casuals increased capacity and provided a rich source of positive, divergent and diverse human

resource, it also brought equity issues to the fore. Many centre staff had philosophical issues with charging state schools money to visit a state facility.

> *And because we were a one-teacher centre we had to charge poor kids more than wealthy kids were being charged. You know, if they went to Gibberagong there were two teachers. So their day visit fee might have been $3 and ours was $6. It was that kind of thing because we only had one teacher so I had to hire extra teachers. So, who had to pay for that? The kids who were coming. And they were coming from the poorest part of Sydney.*
>
> TA

Many teachers-in-charge kept student fees at a minimum. There were battles with the NSW NPWS to stop park fees being imposed on students. For many years the only cost for students at some centres was a resource recovery fee so that centres could replenish their resources, for example, water testing material. Other than this, the centres were largely free for public students for the first 20-25 years.

> *Something I believe we agreed on is that it was public schools first and that the cost to public schools should be at least kept to a minimum although you know we needed to recover costs for the resources that we used… The material recovery cost was a point of contention for centre staff… we had different ways of doing this, different views of the world.*
>
> FA

Gibberagong charged approximately a dollar a head for many years as a resource recovery measure. Yet some centres had been practicing cost recovery and building a security nest egg for some time—Field of Mars being the lead example of this. Their capacity building has been advantageous in these times of economic rationalism.

Costs today remain an issue with factors being equity and consistency.

> *In New South Wales that is a big issue, that everyone charges all these different sort of rates and it becomes… In the metropolitan area it becomes a bit of an issue when a principal sees one particular EEC charging you know $18 and another one charges $5.*
>
> AB

Cost to students, and keeping the centres for public students, were strong values played out within the interview data. It says an enormous amount about the altruistic nature and collegiality of centre staff that they considered collectively sponsoring the staffing of each of the remaining one-teacher centres (seven) for a 0.2 teacher from a pooling of a portion of

their funding from their Resource Allocation Model. This funding would have enabled the employment of a temporary teacher and possible leveraging of another one or two days—enabling capacity building. Unfortunately, the NSW Department of Education and Training did not want to take on the burden of the other associated costs this venture would have entailed.

Generally centre staff had the view that public schools took booking priority with private schools allocated any remaining timeslots. According to one of the study interviewees, there was pressure to allow private schools to attend the centres at no cost when Chris Hartcher was Minister for the Environment (1992-5). This was a problem for many centre staff given that private schools were already being funded by the federal public purse. Gibberagong's EEC Council supported staff in standing up for a recovery cost fee and thus private schools paid the public school fee plus a cost for the casual teaching staff that were necessary for the visit. Foott was always battling to ensure public schools held their priority placing given there were so many private schools in the area such as Kings and Knox. They were always trying to visit given they had heard about the centre's success. From the interview data, many of the centres ensured that private schools paid for the experience while the cost for public schools was kept at a minimum.

> *I personally did not feel comfortable with taking private schools…. I didn't think it was proper to use the resources that were publicly paid for for a private purpose. I know that other centres resolved that issue for themselves. It was not something I ever agreed with. What I did agree with was the location, the venue, is a public place, both of them are public parks and I was willing to make available the information and the private schools could run exclusions themselves by negotiation that their 30 kids and my 60 kids were not in the same place at the same time… What I would do sometimes later on … I employed casual teachers to work… if it was mutually acceptable to the casual teacher on a day when they were not working for me, if the private school wanted to pay that person in their own right to run an excursion then that was their choice. So they would pay at least for the staff member. I mean I know other centres did it, particularly in the country where some of the overnight places like Wambangalang and so on, you haven't got as big a population of kids to draw from, you know, there were obviously days available so whatever arrangement you would come to. And that created an opportunity for the public school kids because it paid for certain things. Everybody had to make their own choice about that. As a day centre I didn't feel right about renting us out to private schools. Certainly not ever ahead of a public school.*
>
> KA

Reform, Contraction and the Impact on Environmental Education

The 1990 reforms had an intrinsic impact on the NSW education system. Greater powers were vested in the Education Minister. They selected Board of Studies members in addition to approving syllabi (Hughes and Brock 2008). The Education Act 1990 (NSW) heralded a change from a NSW education system with a "government for society" focus to public administration as per private managerialism (Riordan and Weller 2000). The neoliberal agenda was embraced by the NSW government. The Carrick Report (1989) encouraged school registration and implied criticism of cross-curricular priority practice, and it named among others, EE. The report stated that some schools were not integrating cross-curricular areas within KLAs (Key Learning Areas—terminology used to identify and group subjects in Australia) but rather teaching them as stand-alone subjects. Critics thought there was sectional interests susceptible to political bias within some of these cross-curricular areas (Riordan and Weller 2000). Furthermore, the role of inspectors was renounced and chief education officers became the main membership of a greatly reduced Institute of Senior Educational Administrators (MacPherson 2015). The new NSW Department of School Education held positions for deputy director general, assistant director-general, functional directors, and regional and cluster directors. The 1990 reform offered one third of the existing positions.

The downsizing within governance severely affected EE with many EE consultants at a regional and state level disappearing (Brown 1991a) but it occurred at a crucial time given the need for support in the roll out of the *EE Curriculum Statement*. It was left to the EEC/FSCs to support its implementation. Within this climate, the EE consultant position, with no immediate replacement when Young moved to the State Pollution Control Commission in 1990, was stranded (Australian Association for Environmental Education 1990b). There is mention of "Mary Clark" and "Hettie" being responsible for EE in the early 1990s but only once each within the interview data. Perhaps the ownership of the role was in name only, or tenuous at least—this was a politically difficult time with major changes and cutbacks. The teachers-in-charge ran their own show, reporting to their regions, while the coordinator position was vacant. Throughout the history of the coordination of the centres within the Curriculum Studies Area/Curriculum Directorate, there have been times where

there was nobody supporting the centres or EE, and other times where there were numerous consultants working on EE/EfS projects. For instance, Koettig spent a few months in 1986/1987 assisting Geoff Young in the Curriculum Directorate—progressing the *EE Curriculum Statement*. Later Dibley spent time working with Smith in putting together the policy package. Much of the money funding these positions seems to have come from the state and Federal environment departments.

The Education Act 1990 (NSW) changed centres' funding and administration and the consequences for the rollout of the *EE Curriculum Statement* were minimal rollout resources with no direct funds to assist with implementation.

> *But its implementation is always questionable because there's no direct funds allocated to it.*
>
> GA

Furthermore, it was found that the mandating of the *EE Curriculum Statement* was ineffective. It was easy for schools to tick curriculum boxes that were "about" the environment rather than being authentic EE, that is if held accountable at all—which they were not. Few study informants remembered the *EE Curriculum Statement* as mandatory, indicating that the result was not effective. With the hindsight of time and experience, accountability for practice is a crucial missing policy reform factor.

> *You've got to remember the 1987 document was actually a statement. It wasn't necessarily a policy so it didn't have that kind of level. It was actually in the early 2000s that there is actually an environmentally policy as there is for schools… as there is today. You've also got to remember that, you know, environmental education is a perspective; even though there are requirements I believe still in the new Australian National Curriculum to teach it if you like… it's a perspective and many schools kind of avoided environmental ed as a perspective over the years. And when there was a statement in the 1980s it wasn't in any way mandated on schools as far as I remember. The environmental ed policy in the 2000's certainly was mandated but, you know, a school could just tick off that they had done you know some curriculum based work.*
>
> FA

Awareness and Growth of Environmental Education

There was a general increase in community awareness about the environment about the time of the release of the *EE Curriculum Statement*. Furthermore, a direct response to its release was perceived as a growth in membership of the AEE (NSW) in 1990. The Manly Warringah AEE (NSW) branch was revitalised and the Illawarra chapter established under the guidance of DeLandre (Brown 1991a, b). There was advocacy to regain support for EE and to get the Board of Studies involved in the EE curriculum given their newly found control of the NSW curriculum. The Manly-Warringah AEE (NSW) branch, with Tribe, was particularly active, as attested to in NSW Government Hansard (Brown 1991a).

> *The Association feels that at present, in spite of a well-developed and released environmental education policy, implementation at a school level is faltering. This is partly due to the current uncertainty surrounding curriculum development and partly due to the rapid and comprehensive changes affecting the NSW education system. The scope and speed of the change has meant that in some educational regions, support for the implementation of the Environmental Education Curriculum Statement has not been forthcoming as we would have hoped.*
>
> (Brown 1991b, 7)

One positive move at a state government level was the establishment of the Environmental Trust Grants. Millions of dollars from trade waste revenue was set aside for environmental restoration and rehabilitation, research and education. The Minister for Education and Youth Affairs, along with a representative from the AEE (NSW) and other conservation organisations, were to be on the selection panel. Tribe became one of the representatives (Australian Association for Environmental Education 1990b; Brown 1991b; Young 1990). Over the years these grants have supported the growth of EE within the centres and the state generally.

There was growth of EE resources in the South Western Metropolitan Region in the early 1990s as well. Annexes were established at Wirrimbirra FSC to get around the limited resourcing of FSCs. The district inspector/inspector of schools, Richard Booth, a keen bushwalker, and Alan Laughlin, the regional director, were both keen supporters of EE. Given the demand for EE, Camden Park and Georges River were opened, each with a teacher under the auspices of the teacher-in-charge of Wirrimbirra. Camden Park Education Centre

was set up as an annex in 1991 and Georges River Education Centre was added in 1994. Wedderburn Resource Centre was also managed as an annex through Wirrimbirra.

> *I don't know where they got their money from. Now if you've got some discretionary money and you can top up environmental ed it's because then it was a priority.*
>
> TA

Camden Park Field Studies Centre

Camden Park FSC at the Elizabeth Macarthur Agricultural Institute, Menangle, was opened in 1991 in partnership with the Department of Agriculture, with a food and fibre, and natural systems focus (NSW Department of Education and Training 1998a). The 1600-hectare site between Camden and Menangle had been managed by the Department of Agriculture since the mid 1980s. Peter Nicoll was the teacher deployed to setup Camden Park Centre and he worked out of Wirrimbirra and a small office building at the Belgenny Farm site. The inaugural teaching year at Camden Park was difficult and lonely with a small classroom and office and only portable toilet facilities. Nicoll initiated booking and routine practices and pro-formas such as statements of duty, protocols for cooperative roles with Agricultural staff, and facility use agreements. Teaching programs were also developed in addition to a business model for centre cooperation into the future. Promised teaching resources and support from the Department of Agriculture were minimal and disappointing. Nicoll did not apply for the teacher-in-charge position and returned to school teaching after three terms. Brian Trench took on the role of teacher-in-charge at the end of 1991. The relationship between the Department of Agriculture and Education, imperfect initially given the differing agendas and disciplinary understandings and practices, has improved over the years with increases in physical, financial, and intellectual support.

Wedderburn Field Studies Centre

Wedderburn Outdoor Resource Centre was listed in *A Survey of Field Studies Centres in Australia* (Webb 1980)[90] as being established in 1979 as a Departmental Outdoor Resources Centre catering for day visits and staffed by a permanent part-time staff member. It focused on Year 3 and 4 curriculum topics. Programs and activities encompassed knowledge of, and awareness and concern for the environment, according to the classification criteria established for the survey. It was situated on the old Wedderburn Public School site with creek and dry forest habitat where the focus was koala conservation in a small area of bushland under threat from urban expansion to the south of Campbelltown (Webb 1980).

Unfortunately, there were site maintenance issues with the building being in a poor state. There was extensive termite damage to buildings. Furthermore, the numbers of school students visiting the centre were poor.

Georges River Field Studies Centre

About the time consultancy positions within the NSW Department of Education and Training were contracting, Sharyn Cullis was appointed teacher-in-charge of Georges River FSC. Cullis had returned to schools after being a social and Aboriginal education consultant in curriculum development within the Department. Initially a careers advisor, Cullis later became head teacher in social science at Moorebank High School where a pivotal event in bringing the Georges River FSC to fruition took place. Cullis started teaching about the Georges River because she had developed related resources and the students were displaying an extreme disconnect to the river—a dislike for the river environment. She was a secondary teacher with a strong connection to the Georges River having grown up on its banks—playing

[90] There was a date discrepancy with interview data and the Environmental Education Centre Policy Statement (1998) listing Wedderburn as being established in 1991. Perhaps this was the year the Centre started being managed through Wirrimbirra if it was not initially, or perhaps there were some changes that instigated a rebirth of the Centre.

extensively in and on it. Cullis had watched the developing human impact and became a strong advocate for protecting and rehabilitating the river.

Margaret Simpson, an ex-consultant and the principal of Sylvania Primary School, organised "A day in the Life of the Georges River" in which many schools, including Moorebank, participated—a program that connected students to their river for the day. It was a huge event and the Georges River FSC became a reality due to it, along with lobbying from community, the Oatley Flora and Fauna Conservation Society and the Georges River Catchment Management Committee, both of which Cullis was a member. At the time, Mark Latham and Craig Knowles were Liverpool Council Lord Mayor and Deputy Lord Mayor respectively, with Knowles also being the NSW member for Moorebank and later moving into the position of NSW Minister for Water and Minister for Urban Affairs A collaboration between the Council and the Department of School Education developed and Cullis was invited to set up the FSC given her involvement in lobbying for its establishment. At first the centre occupied a condemned building on the Milperra Moorebank floodplain that stank of possum urine. The building could not accommodate the students because, as with other centres, they came by the busload. The centre ran like a mobile centre teaching from various sites on the river. The Council eventually built a new facility next to the Chipping Norton Community Centre.

Georges River EEC's demographics were different from many of the other centres—it was urban with a high proportion of its student population from low socioeconomic backgrounds. The centre used many sites in their programs, having high quality bush land and many human impacts to consider. Many students had low expectations about environmental quality having grown up amid environmental degradation. Their lives lacked opportunities to experience the natural environment—they really appreciated what the FSC had to offer. It is all relative.

Wirrimbirra Field Studies Centre Becomes Wooglemai Field Studies Centre

As discussed earlier, the NSW Department of Education leased Wirrimbirra in the 1970s as a FSC. In the early to mid 1990s, due to the David Stead Foundation being under financial stress and there being conflict within the voluntary Foundation Board, the Department of

School Education was asked to increase their lease payments significantly. Rejecting this request, the Department settled on Wooglemai as an alternative site. Another explanation proffered in both the literature and the interview data, is that the railway line that transects Wirrimbirra proved too dangerous. There had been attempts to have an overhead bridge built but while there were great efforts to progress the bridge, it never eventuated (Webb 1998). Furthermore, the Wirrimbirra site was limited in the types of study sites it provided. It seems a range of issues—escalating costs, Occupational Health and Safety concerns becoming increasingly restrictive due to accountability functions exacerbating, and limited study opportunities—contributed to other site options being canvased. About this time, Steve Benoit was the teacher-in-charge with Nicoll the assisting teacher. In 1994, Wirrimbirra's Departmental FSC operations began to operate day trips to Wooglemai, at Oakdale which proved successful, and the relocation and name change to Wooglemai occurred in 1995.

The Wooglemai FSC site had reasonable facilities and lease arrangements and offered access to the adjacent Nattai National Park with its great walking trails. It was the best option at a crucial time. The NSW Department of School Education gave permission for the move from Bargo to Oakdale—from Wirrimbirra to Wooglemai. The name-change was gazetted as per Departmental policy in the Education Gazette, the Annual Report for 1997, with Wooglemai being declared while Wirrimbirra FSC was closed (NSW Department of School Education 1997). Wirrimbirra still operates as a sanctuary (David G. Stead Wildlife Memorial Research Foundation of Australia n.d.). Nicoll, who had taught at the centre since 1994, became the Principal of Wooglemai in 2005.

Red Hill Field Studies Centre

In 1993, 18 centres were open with Red Hill approaching establishment (NSW Department of School Education 1993). About this time, the importance was established of each of the centres contributing a unique ecosystem or situation, and developing inspiring programs to suit the location (space and place). Red Hill fitted the criteria, being at Gulgong, a historic gold mining town with a rich history and many heritage buildings. Once again, it was a strong push from sections of the local community that actively supported the establishment

of Red Hill FSC. The centre was named after the central school in which it was established. At one stage the site was going to be bulldozed and the local community worked hard with their local state parliamentary representative to save the site. A local teacher, David Warner, had researched historical, urban FSCs in England. The project was a collaboration between the NSW Department of Education and Training and Mudgee Shire Council. The Council converted one of the big rooms into a basic kitchen and one of the buildings into dormitories. The Department supplied an administration office. In 1994, the positions were advertised for a teacher-in-charge and an assisting teacher for an urban FSC focused on history. The positions were taken up by Sue Fuller and John Holscher respectively. They were allocated a budget and given the first term of 1995 to set up the empty spaces and develop the programs.

Initially, the centre was all about preserving the local history and bringing it alive for visiting students. Red Hill was renowned for role-playing historical situations with their visiting students, taking them back in time to be involved in old farming/living practices. It used the town environment to investigate history. One of the first resources developed was on how to use the environment to investigate history and to that end they paid teachers to attend an in-service to explore the matter. There was heavy involvement with Gulgong's 125 anniversary at the same time as the centre's establishment. The local community was greatly involved in the centre, feeling they had ownership. The FSC was there for the community and many in the community contributed their expertise to the programs. The FSC conferences introduced EE to the centre and programs diversified into areas such as "Learnscapes," permaculture and "Earth Education" in which Fuller became heavily involved.

Simultaneous State Educational Rationalisation with EE Support

In the NSW Department of School Education, 1993 saw another restructure further reduce the 150 cluster directors (formerly inspectors) to 88 directors of schools (MacPherson 2015). However, the *New Focus on Environmental Education Report* produced by the NSW Department of School Education NSW in 1993 outlined plans for Environmental Education. It specifically promotes the EE achievements of the Liberal Government that took power in 1989. Admittedly, the *EE Curriculum Statement* and the Greening of Schools Program, both

produced in 1989, were important steps in progressing EE. The document affirmed both the incorporation of EE into the schools' total curriculum, and the *EE Curriculum Statement's* aims of assisting students to make informed judgements about maintaining and improving the environment through the development of appropriate skills, understanding, attitudes and values. No doubt there was some excellent progress made in many schools but retrospectively, it would appear to be a call made too soon.

One of the key observations in the Report was that approximately 95,000 students visited the centres annually and that specialist teachers supported by regional offices provided unique first-hand study experiences in a range of environments. Importantly, the Report announced that an Environmental Education Unit was to be created within the Department of School Education's Specific Focus Programs Directorate with Tribe to be the Chief Education Officer.

"The Greening Schools Program," a beautification program, was broadened to include recycling programs, waste minimisation, energy conservation, seed propagation, and bush regeneration. Community groups and government agencies were providing funds for these activities which environmentalists had lobbied for resolutely. Programs such as "Streamwatch," "Frog Watch," "Salt Watch" and "SCRAP (School Communities Recycling All Paper)" were happening in many schools and eight schools were designated as Centres of Excellence in Environmental Education (NSW Department of School Education 1993). One of these was Manly Vale Primary School where 2017 saw the outdoor EE learning facilities unfortunately bulldozed to accommodate school expansion out rather than up.[91]

A Ministerial Advisory Council of Environmental Education, chaired by the Director-General of School Education, Dr Ken Boston, who had an academic career in EE, had been set up by the Education Minster, Chadwick (NSW Department of School Education 1993). It was to supply high-level policy advice to the Minister. Others on the Council included the Director-General of the NSW Environmental Protection Agency (EPA), the Managing Director of NSW TAFE Commission, and representatives from the Teacher Education

[91] David Tribe, personal telephone communication 2017; Facebook posts from disappointed citizens.

Council of NSW and government and non-government schools. The Council was also to have three Members of Parliament from all sides, including independents, available to offer advice. Community representatives with relevant experience were to be selected by the Minister in consultation with key environmental interest groups. Terms of reference included: state-wide strategic planning in liaison with all conservation/environmental groups; local education resource centres; public authorities and youth associations; co-ordination, monitoring and reporting on government initiative implementation; and the creation of EE priorities for government schools and colleges—including supporting resources and curriculum advice. The document discusses the intention of the recently formed Quality Assurance Directorate, under the commission of Minister Chadwick, carrying out a study on the status of environmental studies in schools and the extent of student and staff awareness of EE issues. The document also sets up liaison between the Council and the Ministerial Advisory Council on Teacher Education with the latter tasked with an inquiry into the pre-service and in-service requirements for EE (Godfrey 1994; NSW Department of School Education 1993).

The Environmental Education Unit

Tribe became the Acting and then Chief Education Officer (CEO) within the NSW Department of School Education, Curriculum Directorate's EE Unit in 1994. Tribe had been a strong advocate for an EE Act of Parliament, which had been passed by the Legislative Assembly but faltered in the Legislative Council (K. Smith 1993, 1994). The trade-off was implementation of some aspects of the Bill including the establishment of the Environmental Education Unit, a ministerial EE advisory council, a quality assurance review of EE within the NSW Department of School Education, and a review of EE teacher education requirements as outlined in the government's *A New Focus* report. Tribe's duties included informing policy and overseeing EE within schools and FSCs.

Discovering funding sources throughout this history has proven quite elusive. However, one instance of funding was when Tribe, as CEO, was offered $30,000 to spend on EE. This

funded the ropes course at Wambangalang ($15,000) and a camp for disadvantaged students administered by the teacher-in-charge of Wirrimbirra, Benoit.

While the EE Unit was up and running, it was by no means well resourced. The Nature Conservation Council NSW in 1994 resolved to advocate for its better resourcing. (Godfrey 1994). Additionally, they wanted community EECs within the newly-established NSW EPA (NSW Environmental Protection Agency 2018), EE officers in local councils, and better pre-service and in-service of EE within the teaching profession.[92]

The Industrial Relations Commission Hearing (1994)

Within the FSCs there were staff who found lingering animosity within the bureaucracy towards them and their centre. It lasted for many years, only dissipating when certain individuals within the system retired. Many in the NSW Department of Education bureaucracy could not understand the Department spending on schools which had no pupils and thought Sport and Recreation was a more fitting portfolio. This illustrates a lack of understanding of the work within education that these centres provide—the specialised EE/EfS support for teachers and students within schools as well as fieldwork.

There were long memories within the NSW Department of Education and Foott found the Department unsympathetic to the FSCs' cause when they found themselves before the Industrial Relations Commission in 1994. This came about after the Education Act 1990 (NSW) added further to the teacher-in-charge accountability in regard to writing annual reports (already happening in centres but protocols were tightened), financial management, raising money—basically making teachers-in-charge responsible for everything a principal was responsible for without the recognition or understanding of the centres having no permanent student population.

[92] Note that there was an election looming in March 1995.

In 1993, the Teachers Federation, with Foott as their representative, lobbied for the centre educators, taking the salary and status matter to the Industrial Relations Commission of NSW. The Department of School Education made a counter claim. With inspections of the centres and data gathered in 1993, the case was heard in March 1994 (Australasian Legal Information Institute 1994). At that stage, most of the 18 centres senior educators were employed on their substantive salary with the addition of a "teacher-in-charge" allowance. However, five were employed as primary principals [PP6] (or in payment only). Additionally, one was on a primary principalship with the addition of the "teacher-in-charge" allowance. The Federation wanted the teachers-in-charge to have principal status, to be achieved by altering the FSC status to that of "school." The Federation also sought an allowance for overnight stays for those residential centres. The addition of pupil free days was sought but it was conceded that this relief was already within the teacher-in-charge provision. The Commission concluded that, "We are of the view that the dedicated teachers who run 'Field Studies Centres' are providing an appropriate and important function in the education teaching service of New South Wales" ("Australasian Legal Information Institute" 1994, conclusion, para. 1). The Commission did not find equivalence to principals necessary and set the title as "Teacher-in-Charge." They set two global salaries, dependent on staffing which took into consideration allowances claims. The salary set for "teachers-in-charge" of centres with less than two fulltime teachers was equivalent to the PP5 (primary school with 1-25 students) level while those with more staff was set at an equivalent PP6 (primary school with 26-159 students). Relief was defined as a management issue (Australasian Legal Information Institute 1994). Therefore, FSC received the money but not the status.

The Commission outcome prompted Foott to crusade for principalship, which was achieved just before his retirement about 2010. In accomplishing this, Foott had the Primary Principals' Council, where he had been an observer for several years, onside. With their support, and that of Federation and other environmental educators, principal status was achieved. Foott felt that a significant factor in gaining recognition was that the old guard within the bureaucracy had departed the establishment and the corporate memory had changed. It should be noted that there are discrepancies within the data regarding the teacher-in-charge/principalship positions. It can be surmised that principalship was at the discretion

of division superiors. Principalship was granted with the change from FSC to EEC at the turn of the millennium for some teachers-in-charge. There was discussion about the loss of principal status for principals in the PP5 and PP6 school category (this was across the NSW Department of Education) but the outcome was unclear within the data. Only the term "principal" seems to be associated with EECs in the NSW Industrial Relations Commission (Industrial Gazette), Crown Employees (Teachers in Schools and Related Employees) Salaries and Conditions Award 2017 (Industrial Relations Commission of New South Wales 2017). Nevertheless, the fight for status does not seem settled and secure.

EE Programs and Professional Development

Earth Education

Refocusing on centre EE practice, there was inspirational EE professional development around the country in the early 1990s. "Earth Education" had been developed by Steve Van Matre in the US and workshops were conducted throughout Australia in 1991, having a significant impact on FSC/EECs. The educators at Muogamarra/Gibberagong, both Foott and Wright, took the opportunity to attend a five-day "Earth Education" course in Canberra. The workshop confirmed what they were doing but also opened their eyes to a better way to teach EE.

> *We both came back totally convinced that it was on the right track. Well, it reinforced what we were doing but it made us think that there was a better way to teach environmental education.*
>
> BF

An example of EE for, in and about the environment, Van Matre's "Earth Education" movement was developed in the 1970s in the US and some of their programs were workshopped and developed further in Australia and elsewhere around the world. Incensed by the inconsistent development of EE and seeing an essential need for a connection between people and the natural environment, Van Matre established the Institute of Earth Education in 1990 (Van Matre 1990) to provide alternative EE programs. Set up to "acclimatise" participants to the natural environment, these programs are a magical immersion into nature

with the fundamental concepts of energy, cycles, interrelations; and change revealed to students. Many EE researchers argue that one needs to experience connection with the natural environment in order to develop attitudes and favourable behaviours towards the environment (Tilbury, Coleman, and Garlick 2005).

Foott and Wright were inspired to develop a program similar to the "Earth Education" programs. They wrote *Spaceship Earth* in 1995 (Foott and Wright 1995), a teaching program for the primary school classroom which included a field trip in the natural world. *Spaceship Earth* included 32 classroom lessons and seven fieldwork activities—all experiential learning that complemented the science, mathematics and English KLAs. All the necessary resources for the program arrived at the school in a space capsule made out of a 100mm drainage pipe covered with a sticker of the earth and containing a mythical creature. The whole experience convinced Foott that science, geography and history should be replaced by EE in primary school and the lower years of secondary school.

Foott and Wright took their *Spaceship Earth* program to a centre conference with the aim of encouraging each centre to develop a program within one of the primary school years, this being the least discipline-disconnected schooling sector and thus the easiest target group. The idea was to share the programs across centres so that there was coverage across all year levels, for primary school at least. One was produced at Bournda and the Illawarra but only the *Spaceship Earth* was generic and thus applicable across the board. At one stage, *Spaceship Earth* sold 32 copies at a conference in QLD. Cam McKenzie was one of the QLD EE educators who embraced the program, taking *Spaceship Earth* to Bunyaville FSC/EEC.

"Earthkeepers" was another three-day imaginative, immersive program for Years 4 to 5. One school returned annually for this program. It was evaluated on two occasions, once by Bruce Johnson in 2007 and then by James Ladwig (Ladwig, Ross, and Ellis 2008) utilising the Quality Teaching Framework. It was these evaluations that convinced the school deputy of successful curriculum outcomes. This school stopped sending their students when the staff who initiated the program left but it is believed the relocated staff reengaged with it in their new school.

One very popular activity within the "Earthkeepers" program but utilised by many teachers in different variations, is the Magic Spot activity. This involves students picking a place to spend quiet time within the natural environment—a period that increases from 10 to 15 to 20 minutes over the three-day immersive experience. Often students are initially apprehensive but by the end of the three days it is a favourite activity.

> *"Everybody in the world should have a magic spot." And I thought, "I couldn't even get you into the bush three days ago"... And we were only 10 m off the oval*
>
> BF

A Snapshot of other EE Programs and Professional Development

Joseph Cornell revisited Australia in 1992 and conducted at least two workshops, one at Manly Vale Public School and one at Rumbalara FSC. There were at least 80 participants at these events (Brown 1992a). These workshops, described as "enjoyable" and "stimulating", influenced EE throughout NSW and Australia. In addition to specific project funds, there was significant funding of the professional development associated with the rollout of the key competencies, statements, and profiles for Australian schools via the National Professional Development Program. This benefited EE (Australain Association for Environmental Education 1994).

An example of the various state programs that were supporting EE is "Streamwatch", an action research water quality monitoring program that was launched by the Ministers for Environment and Education in 1990. The Water Board's Environment Management Unit managed the program.[93] In 1992 Bill Stapp was back in Australia. He presented in Sydney on action research in EE and water quality monitoring in streams on a global level. Many teachers involved in "Streamwatch" attended the workshop (Tribe 1992). Stapp had consulted with Carolyn Pettigrew at the Water Board in 1990 regarding the development of the "Streamwatch" program (Fensham 1990). Another example of collaborative EE

[93] Streamwatch is now managed by the Greater Sydney Landcare Network (In 2000 Streamwatch was renamed Waterwatch in areas outside Sydney Water's jurisdiction). The Australian Museum managed Steamwatch from 2012 to 2018 (Australian Museum 2019).

programs later in the decade was "Envirothon," a competition in which Year 11 students investigate an environmental issue and present ideas for management. It was conducted through the EE Unit, FSCs and the NSW NPWS (Tribe 1999a).

The NSW EPA had significant input in EE in the 1990s with 12 environmental educators. It had an EE Committee making great inroads with community EE (Godfrey 1994). Some of the initiatives included the "Who cares about the environment" report surveying people's thoughts on environmental topics in addition to an EE kit for secondary schools. They were also facilitating discussion about EE policy needs so that all environmental educators had the tools to plan, design, implement and evaluate their programs.

The early 1990s saw the FSCs, called EECs in some circles, continue to support EE within schools.

> *The work of NSW Department of School Education Field Studies Centres continues to be of an innovative and high standard and AEE members benefit greatly from their liaison with AEE. Innovative programs such as Earth Education, support for recycling programs and the production of practical resources for teachers are invaluable to teachers who continue to seek ways of developing or enhancing their EE programs.*
>
> (Brown 1992b, 10)

A document written by Allan Watterson and Barker titled *Schools Environmental Audit: A Guide to Best Practice Environmental Management* was published by the Keep Australia Beautiful Council in 1994. It was one of the signs of the start of wise resource use within schools.

> *The advantages of adopting environmentally sound Best Management Practices are two-fold: there will be significant savings in ongoing maintenance costs, and the school will have the opportunity to model easy-to-implement energy, water and waste minimisation strategies to the local community.*
>
> (Godfrey 1994, 14)

A Weakening of a Positive Environment for EE Growth

Relating to curriculum, at a national level, EE had been a discrete learning area for national collaborative curriculum activity. In 1991, it was combined with "Study of Society" and

"Aboriginal Studies" to become "Studies of Society and Environment" (A. Gough 1997, xvi). Further influencing the dissipation of EE's effect was the weakening of Federal Government power over the curriculum.

The Eltis Report, 1995, was in response to complaints from NSW teachers about the new syllabi developed to align the state syllabi with the developed national statements and profile maps. Teachers complained that the resulting syllabi had too many outcomes, leading to an overloaded curriculum (Hughes 2018). The Eltis Report found that the state KLAs defined in the Education Reform Act 1990 (NSW) had lost identity and integrity and as a result, NSW decoupled from the Federal agenda.

Education for Sustainability

While Education for Sustainable Development had surfaced in the 1980s, it was the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, with the development of *Agenda 21*, which progressed its agenda. International and thus national, state and local initiatives started shifting toward "sustainable development" and "education for sustainability" with the replacement of "environment" with "environment and development" (A. Gough 1997).[94] The technocentric world order was supported with EE given only a supporting role in its attainment. Another proliferation of "educating for sustainable development" is the response to Agenda 21 from the International Union for the Conservation of Nature (IUCN) Commission on Education and Communication 1993 (A. Gough 1997). The change rolled on with UNESCO hosting an inter-region workshop on re-orienting EE by incorporating the concept and message of sustainable development (Knapp quoted in A. Gough 1997, 34; UNESCO 1995). In 1997 at a 20th, anniversary celebration of the Tbilisi protocol, EE got scant mention and it was suggested that EE be referred to as education for environment and sustainability (Knapp 2000). Sustainability is also built on in the document *Caring for the Earth: A Strategy for Sustainable Living* produced by the IUCN,

[94] The Department of the Prime Minister and Cabinet had produced a report on Ecological Sustainable Development (1990), written in preparation for Rio and instrumental to formal EE/EfS. (Gough 1997).

1991—the replacement for the World Conservation Strategy. Education for sustainable development is referenced in "Learning for a Sustainable Environment" by Maclean and Fien, 1994, a joint Australian/UNESCO regional project (A. Gough 1997).

While there were still issues with the clarification and implementation of EE being "for" the environment rather than "about" and "in," "sustainability" changed the discourse. This is not the first time this had happened: there was contention when EE emerged in the late 1960s and early 1970s with some academics writing about the silencing of conservation education[95] (Brennan 1976).

> *However, when early conservation efforts failed, those of us interested in education for the preservation of planet earth and its unique systems took the easy way out. We created a new program called "environmental education," which would be more saleable to our "apathetic" public than "conservation" had been. We said that our new program would embrace all of the various conservation education efforts; but it didn't happen that way. Nature study, outdoor education, and conservation education were left out, and proposal writers soon learned that to mention them was an open invitation to failure in getting funding grants.*
>
> (Brennan 1976, 65)

Incidentally Lucas, who had developed the widely adopted and adapted "about," "in," and "for," framework for EE in 1972, had a year before *Agenda 21*, lamented its demise into sloganism.

> *I find it ironic that my original attempt to go beyond slogans, and which included as its raw material for examination many sloganeering uses of 'environmental' as a label on curricula, on consumer products and on political positions, has now itself given rise to slogans in lieu of thought. 'Education for the environment' has now become a slogan, and its unthinking users subject to justifiable criticism.*
>
> (Lucas 1991 quoted in Gough 1997, p. 49)

Nevertheless, sustainable development plants an equity stake for undeveloped, poorer countries' use of resources given the insatiable resource appetite of Western industrialisation and the limitations of resources. Yet, many people are too under-resourced and undereducated to effectively enact the rhetoric (A. Gough 1997). Additionally, the subject is

[95] One could contend that conservation, outdoor and nature study education did indeed continue under a different banner.

orienting towards a broader outlook that does not necessarily cover all of the nuances of environmental issues (Berryman and Sauvé 2013, 133).

> *Sustainability commences in the 1980s and is defined by imaginative attempts to dissolve the conflicts between environmental and economic values that energize the discourses of problem solving and limits. The concepts of growth and development are redefined in ways which render obsolete the simple projections of the limits discourse.*
>
> (Dryzek 2005, 16)

The idea arose of ecological modernisation with environmental protection seen as "essentially complementary" to economic growth (Dryzek 2005)—EE was subsumed within EfS or education for sustainable development (Berryman and Sauvé 2013). One of the struggles for EE/EfS legitimacy is that whilst sustainability was introduced to encompass poverty, population, health, food security, democracy, human rights and peace, there is also the struggle of the environment's place within this, particularly in Education for Sustainable Development (ESD). The omission of "environment" in both EfS and ESD "creates the space in which the terms can be (re) presented or appropriated by those not involved in official policy formation in ways that are more favourable in their own interests." (Stevenson 2013, 150). "The struggles over language and discourse illustrate how there is confusion and contestation within and across contexts of influence" (Stevenson 2013, 150). The conception and advancement of sustainable development are indicative of the struggle for EE against the dominant hegemony (Berryman and Sauvé 2013; Dryzek 2005).

The controversy about "sustainability" is complex and has been drawn out in the EE/EfS literature over the years. Within the centres there was a lot of controversy over the change of terminology with many arguing that "sustainability" and "development" are the antithesis of each other and that without the "environment" named within the terminology there was the potential for "environment" to lose its importance. While documents pertaining to education for sustainable development talked about EE being within, many in the environmental education camp conversely talked about "sustainability" being a subset of EE.

> *I don't have a problem with teaching sustainability but it isn't environmental education it is just a concept within it.*
>
> AA

However, the FSC/EECs, keen to fit with the paradigm that would sustain them, moved with the times. The Rio Summit was closely monitored with guidelines and findings incorporated within centre practices.

> *There were two fields of thought back in the mid 90s between those that were now wanting to move into sustainability education and those that wanted to stay environmental ed and really probably wanted to stay in field studies centres… you know, do more the outdoor ed. So, there were kind of three different schools of thought and, you know, there were some strong characters back in those days.*
>
> FA

Therefore, there were centres with a greater emphasis on sustainability, some with an EE focus, and yet others that found an outdoor education component beneficial.

Years later, with the development of the Earth Citizen and Sustainability Curriculum Framework, there were still issues with "sustainability."

> *I had a problem with that too because nobody could define sustainability for me. Arguing about, were we talking about economics sustainability or environmental sustainability. I always find these things have a very anthropocentric rather than an ecocentric view. So they lose me when they're not holistic and [are] people-centred.*
>
> AA

More Change and More Advocacy for Environmental Education

In 1995, the NSW State Government changed hands. After the election, the Ministerial Advisory Council of Environmental Education was disbanded (A. Gough 1997), once more throwing the EE movement into disarray and spurring action. By 1996, there were moves by the newly elected Labor Government to utilise the Trust monies to reorganise the State Forests and NSW NPWS. State politician lobbying saw the retention of environmental restoration and rehabilitation, greening of schools, and EE Environmental Trust grants (Tribe 1996a).

Concerned about the stagnation and in some cases retrograde developments within EE, a deputation of the AEE (NSW) presented to the Minster for Education in 1996 to discuss the

present state and future direction of EE. Deputations were common practice within the AEE (NSW) and of these (though not the one in question), the following was said,

> *Well one aspect of that was getting the relevant minister inspired enough to do something. And when you think of those earlier days, we used to work on the minister at the time by writing letters to them, by having a deputation to them… I remember well one deputation I was involved in, where we saw the minister at the time, and we started to talk about setting up an environmental education advisory board or something like that. And he told us that pigs might fly before he set up such a thing because he said, "What you're asking me for is money and I'm afraid we haven't got any."*
>
> KMcD

Apparently at this particular meeting in 1996, the long-awaited *Quality Assurance Review of EE in NSW Government Schools* was released, discussions for a ministerial council to advise the Ministers for Education and Environment on EE matters were underway; a survey into teacher in-service EE was being undertaken, and a submission for the provision of a Year 11 and 12 environmental studies syllabus was requested from the AEE [NSW] (Tribe 1996a).

After the election, regional education clusters within the Education Department's structure were abandoned (Hughes and Brock 2008). Forty-four small district office support services, with district superintendents (MacPherson 2015) were set up near schools while there was a central state-wide administration (Hughes and Brock 2008). A 1996 restructure saw the Quality Assurance Directorate removed and the Curriculum Directorate downsized while developing district-based consultation supported curriculum implementation (MacPherson 2015). Later, a 1998 restructure of the NSW Department of Education and Training, combined school education with TAFE with the loss of 600 jobs.

It took until 1996 for the Board of Studies to have a set of guidelines that required syllabus and related material to incorporate the ethos of EE (Tribe 1996a).

> *The Board of Studies now has a set of guidelines requiring syllabuses and other materials to incorporate aims, objectives, outcomes, content, teaching, learning and assessment strategies which are environmentally sensitive and appreciate the complexity and fragility of the Australian and global biophysical environment and which encourage* ***rational, informed and sensitive consideration of its use.***
>
> (Tribe 1996a, 5)

There has been instability within the chopping and changing of educational administration and process, seemingly more frequent since the 1990 educational reforms due to the politicisation of education. With power and responsibility shifted from the central office and regions, there was difficulty in coordinating EE programs across the state. This toing and froing of direction within Departmental policy has made the administration of schooling difficult and educational activity prescriptive (Hughes and Brock 2008).

> *So I always felt it was easier to apologise than to get permission so I sort of sailed ahead and did what I felt like doing… The Department of Education changed policies regularly but I was doing what the staff wanted, the schools wanted, that were visiting, and setting up programs that suited what they wanted when they were visiting.*
>
> MA

The continuing changes must have been difficult for those progressing EE and one can see why a quality of flexibility or malleability would be beneficial. Centre staff, along with others in the field, have developed pragmatism, perhaps even a tendency for chameleon-like characteristics—adapting and adopting to changing circumstances as seen fit for survival.

A new document—a green paper titled *A New Approach to Environmental Education in NSW*, was released in 1996 (NSW Environmental Protection Authority 1996). It proposed to amalgamate the Ministerial Advisory Council on Environmental Education and the EPA Environmental Education Committee into a NSW Council on Environmental Education in an effort to save money and avoid duplication. This new document introduced the term "sustainability." The consultation document that followed, *A New Approach to EE in NSW: Consultation and the Next Steps* (NSW Environmental Protection Authority 1998), called for clearer definitions of EE, ESD and the objectives of EE, and refreshingly identified challenges including:[96]

- a history of a lack of leadership from federal and state government,
- ESD as a foundation for EE, and
- the clash between EE programs and economic issues.

[96] Note this document emanated from the relatively new EPA.

A Change in Environmental Education Centre Management

Extreme downsizing within the Department in the 1990s saw 150 "cluster directors" become 88 "directors of schools" and then 40 "superintendents" of 40 districts (MacPherson 2015). Due to the severe restructure in 1996, Tribe retired and Syd Smith took on the role of CEO within the Department of School Education (Tribe 1996b). Tribe continued in his role as the AAEE state delegate for NSW among other pursuits. While Tribe and Smith both held the title of Chief Education Officer, Smith held significantly more power within the Department of School Education—another serendipitous event given that it meant a high ranking education official with an environmental bent needing to be looked after in the system. One of the last batch of inspectors appointed just prior to the Inspectorate being abolished in April 1990, Smith was the Cluster Director on the Central Coast from 1989-1993. When his contract finished in 1993, Smith was seconded by Boston to evaluate the educational resources of the Australian Broadcasting Commission before moving to the Quality Assurance Directorate in 1996. When this Directorate closed, Smith became CEO of the Environmental Education Unit (MacPherson 2015).

> *When I started we had Syd Smith who was the guru and the CEO of environment education and he was up there with all the other CEOs in the Department.*
>
> OA

Smith was given the responsibility of running the centres by Burke, the assistant director at the time. It was the first time this had been done at a central level. Smith was accountable for how the centres operated state-wide—beforehand officers oversaw management or curriculum but not both. Indeed, directors were happy for Smith to take on this role. Directors often knew nothing about EE—there was still a great ignorance within the NSW Department of Education and Training about the centres. It was not a priority, with centres left to manage on their own. Due to the *ad hoc* and serendipitous nature of the development of FSCs, and the severe rationalisation within the NSW Department of Education and governance generally, Smith went about formalising the informal—ensuring the centres and EE were secure.

One of the issues Smith attempted to rectify while in the EE Unit was the agreements with the NSW NPWS. Many of these agreements were peppercorn arrangements, handshake agreements, made at an earlier time when departments worked together in governance for the public good. These agreements, which benefited the community they served, do not translate into economic rationalism with departments trying to work with minimal funding and indeed generate money where possible. While an agreement was made, it does not seem likely that it has been upheld. The agreements seem to be made on a case-by-case basis taking up valuable EEC principal time and effort. Another issue had been NSW NPWS change management where without understanding previous agreements, new management has attempted to evict the FSC/EECs. Having two bosses was an issue for many EEC teachers-in-charge/principals working in national parks.

Taronga Park Zoo: Western Plains Zoo

In 1996 Taronga Park and Western Plain Zoos, who also manage a mobile zoo that visits sites that do not have access to zoo facilities, joined the FSC network. While the zoos' aims differ from those of the FSC in that they work with animal species on a global scale and have a much larger visitation catchment, their priority is focused on the zoo rather than the NSW Department of Education and Training objectives. Nevertheless, they have the same curriculum outcomes to meet. The NSW Department of Education had been requested to support the resourcing of staff for the Zoo centres though they also had Catholic/private schools support, being facilities for the whole population. From 1996, the Zoos joined the FSC network in a professional capacity. This coincided with the change from regions to clusters with Burke instigating the merger.

> *Terry Burke who said to me, "And we've got two other little appendages here that don't have a correct line of authority as well and they are the zoos. Taronga Zoo and Western Plains Zoo. I want you to include them with the environmental ed centres because they're doing a similar task. They're really promoting the teaching and learning of environmental ed." So when we ran the conferences after that the zoos came along as well and they shared their acumen and ideas with the environmental ed centres. So it enriched both groups.*
>
> SS

The Quality Assurance Review of EE in NSW Government Schools, undertaken by the Quality Assurance Unit within the NSW Department of School Education with Tribe's involvement, took a long time to be made public (K. Smith 1994). For some reason it was not released until 1996 under a new state Government.[97] One of the overall findings was that many within the NSW Department of School Education did not know what EE/EfS was. Additionally, a high proportion were not active in the field. Findings included:

- it was often only dedicated teachers who supported EE in schools,
- teachers within science, human society and its environment (HSIE) and technological and applied studies (TAS) were more likely to support EE than those in maths, and personal development, health and physical education (PDHPE),
- mandatory requirements were not clear to the teaching profession, and
- integration of EE was difficult for teachers and it was often seen as an add-on to the official curriculum (S. Smith 1999b).

Recommendations included:

1. the development of resources to support the cross-curricular nature of the *EE Curriculum Statement*,
2. the development of a statement of student EE learning outcomes,
3. EE professional development be available and accessible to school staff, and
4. flexibility within FSCs to ensure maximum capacity in supporting EE (Tribe 1996a, 5).

The Quality Assurance report gave Smith a starting point—a frame for developing EE/EfS further.

As discussed, the EE Unit was severely understaffed from time to time. Tribe was the only staff member in the Unit when it was first set up (K. Smith 1994). In 1997, there was only

[97] I could not find a copy of this document available. Richard Jones, a staunch environmentalist politician in the Legislative Assembly asked questions as to why the Review had not been released in 1994.

Smith within the EE Unit carrying out the work of overseeing the FSCs and EE in NSW (Tribe 1998). Furthermore, the EE networks within schools must have fallen into disarray from time to time with the changes in education governance, changes in regional jurisdictions, and teacher attrition and movement—change management was/is always an issue given that often it is one teacher carrying the EE load within a school. In 1997, the EE Unit was once more setting up an EE network of teachers in the 40 school districts within the state with the purpose of communicating sound EE practice (Tribe 1997).

Penrith Lakes Environmental Education Centre

Penrith Lakes Environmental Education Centre at Cranebrook joined the other 19 field studies centres (FSC) in 1997 (NSW Department of School Education 1997). It was officially opened the following year (NSW Department of Education and Training 1998a). Penrith Lakes was an old quarrying site. Reclamation resulted in the creation of seven connected artificial lakes (Penrith Lakes) specifically to be used for the Olympics rowing site. There was 2,000 hectares of recreational area (NSW Department of Education and Training 1998a).

Initially, the Social Science Teachers' Association had developed a resource about the Penrith Lakes Scheme. They saw great potential in the scheme's application to the geography curriculum. A steering committee explored the potential for a centre. The partnership included the NSW Department of Education and Training, the Catholic Education Office at Parramatta, the University of Western Sydney, the Western Sydney Institute of TAFE, the NSW Minerals Council and Penrith Lakes Development Corporation. The centre was to provide for all students, both private and public, primary, secondary and tertiary (NSW Department of Education and Training 1998a).[98] Politicians such as John Aqualina were also

[98] Contrary information says that a second teacher was provided with Catholic Education partnership funds but also from the sale of the geography resource, negating expense for visiting schools. Perhaps it was a mixture of both.

on the steering committee. Contributing to the push for the centre was interest in the Lakes area from the AEE (NSW).

The site had significant appeal to schools wanting to visit and the consortium wanted resources to deal with the educational side of their business, the restoration work and the Olympic site. Some thought the setup of the centre was to placate the local community who were unhappy with mining developments in the area. The centre was somewhat controversial, thought by some to be "window dressing" for the Olympics.

Eventually there was a commitment for funding by the Education Minister, Chadwick, but with the loss of the election in 1995, the commitment floundered. Funding, through John Aquilina, the new Labor Education Minister, took some time to eventuate. Steve Etheridge's position as principal of the centre and the change in the Education Department from regions to clusters happened about the same time. Instead of regions holding the funds, funds devolved to schools within clusters. For some time Etheridge's new position seemed precarious with no ownership within the education bureaucracy. Additionally, if there had not been someone so involved with the project, the threads of commitment may have been lost in the ensuing bureaucratic and political changes. The whole situation went some way in destabilising the commitment of the project consortium and they did not want to be called a field studies centre. Etheridge came up with the "environmental education centre" (EEC) nomenclature that satisfied all parties. It fit with the popularity of environmental matters at the time. Finally, funding came through and the centre was the first EEC established.

Etheridge, the first principal at Penrith Lakes, had been a geography/social science teacher actively involved with the Western Sydney Social Science Teachers' Association and later the social science/HISE consultant for the Western Sydney region. In this position, he had been on the steering committees for both Longneck Lagoon and Brewongle, and for the development of Penrith Lakes EEC.

Etheridge updated the Penrith Lakes Scheme geography curriculum resource once he was principal of the EEC. Schools bought the resource that proved popular. It contributed to the popularity of the centre for school visitation and adding to the funding to employ additional

staff. The centre went on to develop other resources, units of work connected to curriculum where the centre experience was just one part of a much larger study.

Program areas included studies of the Penrith Lakes scheme, heritage studies, the Olympic site, Aboriginal archaeology, geology, water quality, and rehabilitation of the environment, particularly mining restoration/sustainability (NSW Department of Education and Training 1998a). The Minerals Council funded some of these programs relating to the sustainable practices of their industry.

Rationalisation of the Metropolitan South Western Region FSCs

When the clusters and thus cluster directors changed once more, Metropolitan South Western Region with its four FSCs and additional staff, were seen in need of rationalisation. This was one of the first tasks for Smith as CEO of the EE Unit. Until then Metropolitan South Western Region had found the money to support the extra staff, but funds had become much tighter and dispersed.

Benoit, teacher-in-charge at Wooglemai, had the extra burden of managing and administering these annexes from Wirrimbirra with no extra resourcing and faced the difficulty of them being a considerable distance from Wooglemai. He was apparently keen for a solution to an untenable situation. The resolution chosen was to gazette two of the centres and close the other. Gazettal was significant: it gave the centre a school number which provided a certain amount of security—it is a difficult process to close a school. Significantly, gazettal came with an establishment grant which was approximately $20,000.[99]

Both Camden Park and Georges River EEC were opened as EECs in late 1999 (Tribe 1999b) and were gazetted within the NSW Department of Education and Training in January 2000

[99] Note that there was no evidence in the data that this happened for this rationalisation as the centres were already up and running and money was tight. Additionally, there is evidence of regions attempting to utilise this funding for expenses other than EECs, although not in this specific instance.

(NSW Department of Education and Training 2000).[100] Trench and Cullis were successful in reapplying for their positions and their title changed from teacher-in-charge to principal. Due to the nomenclature change in 1999, these centres became EECs rather than FSCs. Wedderburn's staff allocation supplemented centres in other regions rather than Georges River and Camden Park as expected.[101]

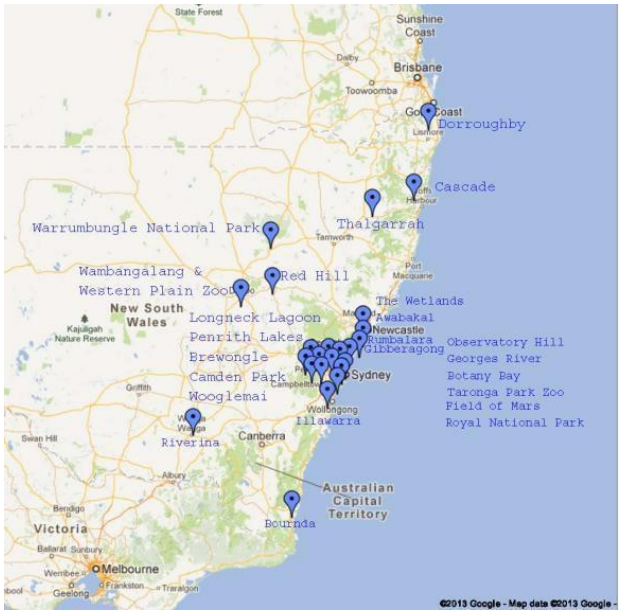

Figure 1: EECs in New South Wales, 2014[102]

Conclusion

This chapter described the enormous changes that took place in the late 1980s to late1990s, both the shift to education for sustainability/education for sustainable development, and the

[100] Curiously, Shortland Wetlands was also gazetted in August, 2000.

[101] Apparently.2 went to The Wetlands and Dorroughby while .1 was allocated to Thalgarrah but please note that information about staff allocation within the data set was relatively elusive.

[102] The case studies descriptively reveal the ecological diversity represented across the EEC system. Figure 1 gives an overview of the geographical distribution with most of the centres established around the major population centres.

shift to educational economic rationalism and privatisation. Chronicled is the struggle for EE's place within education and society, in general, in a downsizing economy with its ensuing social and political restraint—shifting from a welfare economy to economic rationalism. While the *EE Curriculum Statement* and *FSC policy* were achieved after a 10-year labour, its dissemination coincided with the severe rationalisation associated with the Education Reform Act 1990 (NSW), affecting the resourcing of effective implementation. Continual reform and downsizing repeatedly changed jurisdiction and management of the centres. Reform brought teachers-in-charge greater responsibility and freedom for managing the centres in a financial and accountability capacity.

A FSC renaissance, due to an enormous amount of politicking on the part of local community, the AEE (NSW), the Gould League of NSW and other EE advocates, including education ministers who supported the centres, saw great advancement within EE/EfS and FSCs. Greater teaching capacity was achieved for some of the centres yet some regions decided to utilise their second teacher to open another one-teacher FSC. Shortland Wetlands, the Field of Mars, Cascade, Warrumbungles, Riverina, Observatory Hill, Rumbalara, Botany Bay and Mt Kembla/Illawarra FSCs were established as was an Environmental Education Unit in lieu of an Environmental Education Act. Red Hill FSC and Penrith Lakes EEC were squeezed in before FSC establishment ceased. Another intensive rationalisation saw Camden Park and Georges River annexes, which had been set up to assist regional EE resourcing, become FSCs while the Wedderburn annexe was closed. This streamlining also saw a closer alignment of the Taronga and Western Plain Zoos. They joined the FSC learning community which became the Environmental and Zoo Education Centre Network (EZEC). The move of the FSC from Wirrimbirra to Wooglemai may also, partly, have been instigated by financial pressure.

On an international, national and state level there was a lot of EE resourcing with many planning documents and programs developed. There were also various Federal funding grants available to entrepreneurial teachers-in-charge/principals. In contrast to the 1970s and early 1980s, there was competition within the field which was becoming increasingly privatised. There was power play too between Commonwealth and state and territory governments over school curriculum and discipline contestation ensued.

This chapter concludes with Smith, an ex-inspector, being accountable for and managing the centres on a state-wide basis, a considerably more powerful position than had influenced FSCs since the 1970s. This chapter completes the descriptive reveal of the establishment of FSCs. The final chapters will analyse the dominant and persistent themes of practices, pedagogies, curriculum, and enabling and inhibiting factors, which populate this history.

CHAPTER 7: INSTITUTIONALISATION AND RATIONALISATION CONTINUED

With all field studies centres (FSCs)/environmental education centres (EECs) established and rationalised within their ever-changing respective jurisdictions, the following chapter will set out to detail significant events from the mid 1990s to the present day. The chapter begins with Environmental Education (EE)/Education for Sustainability (EfS) institutionalised within the system and chronicles the demise of the Association for Environmental Education (AEE [NSW]) and the Gould League NSW, and the updating of the EE policy with a greater focus on sustainability within schools.

As evident in the narrative thus far, environmental matters became increasingly formalised within departments and government positions over the latter half of the 1900s, and in this sense became more "institutionalised." This history will recount significant sustainability funding opportunities; the eventual dismantling of support and EE/EfS structures, including the EE Unit; the continuing rhetoric of EE/EfS; and the Australian Association for Environmental Education (AAEE) undertaking a considerable EE/EfS workload given government recalcitrance. Within the precarity of today, this story finishes with the centres, after years of adopting and adapting to insecurity and change, refining their collective skills as chameleons—able to fit with the times and shift EE/EfS in a positive direction as best they can without succumbing to the continuing neoliberal agenda of our times.

Diversification of EE/EfS and the Demise of Founding Advocacy Groups

As indicated, other departments such as the various environmental departments, both state and Federal, had become dominant participants in what had become the holistic state-wide endeavour of EE/EfS, with the overarching umbrella of Federal support. Within NSW in the 1990s there were many other participants within the EE field. By the late 1990s, there were several national programs running that had been advocated for by a variety of environmentalists. Programs such as "Waterwatch", "Saltwatch", "Airwatch", the globe

project "Communicating Over the Catchment" and Landcare Australia were all projects supported by NSW schools (NSW Legislative Assembly 1998).

So, much of what the AEE (NSW) and the FSCs had set out to achieve was accomplished.

> *What it used to carry out single-handedly is now being carried out by a growing number of various environmental education organisations throughout the state.*
>
> (Tribe 1999b, 13)

FSC educators were not the only environmental educators in education departments: there were environmental educators within other departments in addition to private EE consultants.

> *The things that were actually driving it have now moved away. So, that's also why I think it's a more difficult gig…So, I would say the…thinking about it… the pinnacle of what we were trying to do came about in about, you know, the mid 1990s… all those battles that started back in the early 70s had been pretty much won. I'm talking about not just in the EECs but also in the environment movement. And there were numerous people in it and there were industries… People could go and earn a living in private enterprise… So, there was tons of work… you know… it was a burgeoning industry. So, it became something else. And I think the environmental ed centres started to lose there because other people were doing it. The world had kind of moved on and they started to pretty much dismantle a lot of the things that we fought for in environmental ed centres and within schools.*
>
> FA

This quote suggests that once institutionalised, and once the popularity or political power of the environmental/sustainability movement waned, there was the progressive dismantling of achievements within the new economic structure.

The End of the Gould League of NSW and the Association for EE (NSW)

In 1998, the Gould League of NSW was looking for members for its Council, seeking rejuvenation—support from students, teachers and schools (Tribe 1999a)—but without success, and soon they succumbed to the downturn in community interest.

> *So the emphasis in environmental education began to wane quite a bit and there was less and less money to the Gould League which became less and less effective and that's where nobody turned up to support it – we were getting a bit old…. We joined in with the Gould League Victoria. They went into liquidation. There is a Gould League body of Australia—someone took them over again but I don't quite know what that's all about.*
>
> DT

The downturn also affected the AEE (NSW) and the AAEE. Within the AEE (NSW) in 1998, motions passed unanimously at the AEE (NSW) conference were to:

- press the Government for EE to be accounted for in school annual management plans,
- have the NSW Department of Education and Training monitor the implementation of the mandatory requirements of the *EE Curriculum Statement* via the annual school report, and
- to increase the staffing levels of the one-person EE Unit (Tribe 1998).

The last initiative of the AEE (NSW) was a pamphlet outlining how to make environmental policy and plan submissions titled "Public Participation in the Decision-Making Process" (Tribe 1999a). At the end of 1999, the AEE (NSW) announced that it would be folding. The AEE (NSW) intentions, as outlined at their conference in 1998, did not come to fruition. At that stage, there were only three branches remaining—Central Coast, Hunter and Western Sydney (Tribe 1999b; Norman 1999)—and these received an even distribution of the remaining monies.

Reflection

It is worth reflecting on what worked within the AEE (NSW), the changing times, and how affecting, or trying to affect, change within EE has changed over time. The issues are immensely complex. Time and place assist in conceptualising what the variables might be:

- Was this the start of organisational disempowerment, and if so has institutionalisation played a part?
- Was it about the initial characters involved? This then poses a question about the socialisation of each of us within our own time and place, and the various institutionalisations possibly affecting us and blinded us to what else could be.

These ideas are profound when one considers the disconnect from the environment that the exponential and consumeristic growth of the late twentieth and early twenty-first centuries have generated.

This narrative reflects the historical connection of EE/EfS to political cycles and ideologies both in Australia and elsewhere. It exposes the interconnectedness and inseparability of educational change and political, economic and social change, in NSW, nationally and globally, with EE/EfS intimately connected—all a part of the web that is woven into the composition of our existence. No entities are isolated—there are always contending and converging discourses. EfS/EE is implicitly and explicitly influenced by other policies and thus a brief focus on the complex processes and politics of educational, and specifically EE, policy formation will highlight the value of adopting the theoretical concept of "assemblage" (Rizvi & Lingard 2011). The "assemblage" concept evokes a systems thinking approach to consider complex configurations of policy inputs and their implications. This study has sought a descriptive exposure of some of the competing discourses and the setting in which they were enacted. Yet, within this history the narrative is written within a neoliberal time and thus may be shaped by an albeit unconscious, frame. One of the advantages of a history spanning nearly fifty years is the chance to reveal the unconfined space of "what was"—yet this too may be blinded by an assemblage subjugated by the dominant economic imperative. Stevenson (2006) discusses the abstraction of ESD within policy discourse as "unpractised ESD" by the discussants with symptoms being:

1. discourse reification tendencies,
2. a lack of focus on issues of pedagogy and politics in enacting local setting ESD, and
3. a great divide between policy sloganisim and implementation.

(Stables and Scott 2002 cited in Stevenson 2006, 287)

To be cognisant of the effect the assemblage has on our psyche, we need to re-conceptualise reflexively. And thus make visible the balance of contrary forces for EECs. Stevenson goes on to say that the process of learning to live within ecological limits without human suffering, includes uncovering the power relationships and ideologies that underlie sustainable development discourse—negotiating and enacting change is tricky not just because change is hard but because it may also disturb vested interests (Stevenson 2006). With FSC/EEC educators working within an often-intransigent bureaucracy nestled within our neoliberal paradigm, they are compelled to comply with the rules and regulations about controversial

issues and as some of the study narrative illustrates, this can be politically and personally fraught. Hence the chameleonic tendencies developed and nurtured by centre staff over the years. Conversely, FSC/EEC educators are grounded in their local place-based situation—the best space to reconceptualise and stay connected. They have the skills and the means to connect and teach students and teachers to do the same. In moving forward, Stevenson's advice for educator practitioners is to stay/be involved in constructing the discourse, to have input in its historical, pedagogical and political positioning, and to be involved in the research process as part of the transformation. In addition, "learning forward" is advised in order to stay nimble in our unpredictable future. Interview data indicates that many EEC educators have these characteristics or, in relation to the research, are acquiring these traits.

For now, within the narrative, we have the closure of two organisations in NSW—The Gould League of NSW and the AEE (NSW). They were instrumental in growing EE within the NSW education system and generally, within NSW, and they contributed to national and global change with a bottom-up approach.

The last project of the AEE (NSW) was a biography of Strom's life by his friend and long-time colleague, Fox. Strom died in 1997. The AEE (NSW) became a Chapter within the AAEE. There was a definite downturn in interest within the EE associations toward the end of the millennium with the ACT association having folded prior to the AEE (NSW). The AAEE was also going through a renewal process (Norman 1999).

In the early new millennium, with the original AEE (NSW) changed significantly, according to one informant, it became increasingly important for EECs to solidify their network.

> *So, when I first started there was a regular AEE meeting every year or every other year so you were always going to something and meeting your peers but all these other people as well. But, when that sort of started to die down it really became more important for the EECs to build a communication network on their own.*
>
> EB

While the AAEE was an obvious support, there was a need for a local, state-wide focus relating to the various, specific rules of NSW governance. The centres had lost a significant support base—the AEE (NSW) and the Gould League of NSW. By 1998 there were more than 45 teachers and 21 clerical staff within Departmental FSC/EECs.

Environmental Education Within the Department

The Environmental Education Curriculum Statement Revisited

In light of the changes happening on a global, national, and state level, particularly Agenda 21 originating from the Rio de Janeiro Conference in 1992, and the curriculum and structural changes of the 1990 Reform Act (NSW), the EE Unit started to revisit the *EE Curriculum Statement* (NSW Legislative Assembly 1998; S. Smith 1998, 1999b; Tribe 1995). Issues had become much more complex than at the beginning of EE.

> *And what has happened since then is it's become more social, it's become more global, it's become more … talking about urban areas, talking about climate change, talking about big issues, talking about poverty, talking about equality. All those things have slipped in now to become part of the sustainable agenda whereas then it was much more simple…. But it's become more embracing, more complex now, and much more integrated.*
>
> XB

The findings and recommendations of the Quality Assurance Review (circa 1996) gave plenty of scope as to where the policy needed change. In addition, it had been observed that approaching EE within the school curriculum in a holistic way was difficult due to schooling's formalised subject structure (S. Smith 1999b). This was unfortunate given the systems thinking nature of EE/EfS and is indicative of the institutionalisation of the traditional disciplines and schooling structure.

> *Unfortunately, the curriculum is so… put into silos that you don't see the cross-references*
>
> XB

Smith believed that while centrally developed curriculum intended to influence what was taught, it is the teachers who are the important factor in how and if the curriculum is enacted in the classroom (S. Smith 1998, 1999a,b). Learning from the first attempt, the policy was to provide clear guidelines for the minimum responsibilities of schools and how learning outcomes could be achieved in the KLAs. Addressing the reluctance of some teachers to attend to EE, Smith held workshops. At the 1999 AAEE International Conference, Smith delved into the problems curriculum writers need to address to ensure curriculum intent is transformed into practice.

Official EEC Policy Statement and Name Change

The EEC policy statement became available in 1998, outlining the role of EECs. The document covered staffing, administration and funding of the centres, in addition to the duties of centre teachers and issues of safety management. Importantly, it provided the locations and contact details of the centres (NSW Department of Education and Training 1998b). It was essentially a tailored schools version of the statement produced in 1989—it outlined what centres had to offer. The mid to late1990s saw changes in credentialing of people working with school children and changes in insurance—there was much greater accountability. "And so doing things informally, unofficially became extremely difficult," (KA)—there was a lot more paperwork, for example, about excursions. FSC/EEC staff produced templates to streamline the process to make it as palatable as possible for teachers and schools in a climate where teacher/school workload was already high.

> *The Environmental Education Centres Policy. And so that essentially set out… that was almost like a service level agreement. If schools were going to go to an environmental education centre they were guaranteed of getting the sort of service that those policies and those documents described. And so it was the Department's way of saying, "These EECs, field studies centres as they were called then, are staffed by Department of Education teachers. They will provide curriculum-based learning experiences. You can be guaranteed a certain quality of educational program if you bring your kids here." So that was a way of ensuring that there was a consistent approach to what the field studies centres did.*
>
> VB

It was 1999 before the title of the centres was officially changed from "Field Studies" to "Environmental Education" to reflect the wider role of EE within schools and the centres' role within it according to the Environmental Education Policy 2001 (Tribe 1999b; Walker and Sharp n.d.). The implications of the name change provoked a great amount of discussion amongst centre staff. The early centres were very fieldwork driven within their environmental imperative and were worried that the name change might impact people undertaking fieldwork. The hands-on outdoor experience was paramount for the survival of the centres with field work connected to the curriculum their lifeline.

EE/EfS on a Global and National Scale

On a broader scale, Australia was taking part in international EE initiatives at the turn of the new millennium. Generally, Australia has a penchant for importing ideas, at times without discretion, from countries deemed antecedents of our colonialism (Fischetti 2014). While this habit has brought some valuable contributions to EE in the form of divergent research and pedagogical perspectives—"Earth Education" and immersion methodologies, for instance—it can also be to the detriment of embracing endemic ideas or possibly beneficial ideas that may originate from a broader worldview (Woolmington 1972). Australia has developed unique, place-based initiatives. For example, the Fauna Protection Act 1948 (NSW) was unique legislation—a forerunner of conservation legislation. As this and the subsequent chapter are uncovering, Australia, the EE Committee within the Curriculum Development Centre (CDC), and many EE/EfS academics and practitioners held a significant place in furthering the international agenda for environmental/ecological sustainability education. In the late 1990s, the NSW Department of Education and Training took some responsibility for representing Australia in the Organisation for Economic Cooperation and Development (OECD) EE projects with Smith a representative (NSW Department of Education and Training 1999). Projects included four Environment and School Initiative projects: Eco Schools, School Indicators for EE, Research projects in EE, and Teacher training (Tribe 1998).

National Environmental Education Council and Network

On a country-wide level, the National Action Plan discussion paper was produced in 1999. *Today Shapes Tomorrow: Environmental Education for a Sustainable Future* provided an understanding of what interested Australian citizens thought was necessary to build EE into the future. The paper had noted that whole implementation of EE to that point had not been systemic, and holistic approaches were rare (Environmental Education Unit, Environment Australia 1999). Within the discussion paper, the environment was seen as a political rather than an educational priority with little input from education or industry. Furthermore, the EE/EfS and the EE/EfS research built over previous decades was essentially ignored, as were

the coordinating efforts of a previous EE committee within an Australian Environmental Council in the 1980s (A. Gough 1999, 2011).

The result, *Environmental Education for a Sustainable Future: National Action Plan* (Environmental Education Unit, Environment Australia 2000) recommended the establishment of a national EE council and network to transform environmental awareness into informed action. In implementing a national framework the plan recommended:

1. raising the profile of EE. This included an independent Australian EE Foundation in an Australian university—what was to become the Australian Research Institute for Environment and Sustainability [ARIES] (established in 2003 to undertake applied EE research—independent since 2009 [n.d., A. Gough 2011]),
2. improving the coordination of EE activities,
3. improving EE resource materials,
4. more professional development opportunities for teachers in the formal education sector,
5. more integration of EE principles in all formal education settings. This focus references *The Adelaide Declaration on National Goals for Schooling in the Twenty-first Century* (1999) which calls for all students to "have an understanding of, and concern for, stewardship of the natural environment, and the knowledge and skills to contribute to ecologically sustainable development" (Ministerial Council on Education Employment Training and Youth Affairs [MCEETYA] 1999, goal 1.7),
6. increased resourcing for community organisations in their pursuit of EE, and lastly, and
7. longer term priorities.

The plan gave very little for schools to work with and little connection to anything to do with nature (A. Gough and Cutter MacKenzie cited in Karena 2010).

The AAEE was well represented in the National EE Council, established in 2000, and the National Environmental Education Network, established in 2001. Smith was one of the

Network representatives (Australian Association for Environmental Education 2002; A. Gough 2011). The National EE Network scrutinised where each state and territory was in relation to EE policy, programs, teacher professional learning—and progress, structure and implementation of their sustainable school programs.

> *The Australian Government released the National Action Plan for Environmental Education in 2000 and this was credited with the development of the Australian Sustainable Schools Initiative (AuSSI). The Australian Government initially funded the program in each state and territory. This along with the release of the NSW Environmental Education Policy for Schools and the release of similar policies in other states and territories saw an increase in support for sustainability education across Australia.*
>
> JA

Within education at a state level, there was a move back to the primacy of literacy and numeracy in the early 2000s (Hughes 2018). Mandatory outcomes were culled further with the favouring of literacy and numeracy. This occurred after a revisit of the *Eltis Review* (Eltis and Crump 2003 cited in Hughes 2018).

EE/EfS Developments Within NSW

The NSW EE Council

In November 1999, under an amended Protection of the Environment Administration Act 1991 (NSW), Labor's holistic version of an EE body took effect when the EE Council of NSW convened for the first time (Tribe 1999b).[103] As with the Federal body, the environment portfolio was moving the agenda (also noted by A. Gough cited in Karena 2010). Membership of the Council was wide reaching within the state entities. Representing education and EECs was Smith, head of the EE Unit within the NSW Department of Education and Training Curriculum Directorate. Additionally, Young, ex-head EE consultant within the Department, was manager of the Community Education Unit within the NSW Environmental Protection Authority (EPA).

[103] The last body had been disbanded after the election in 1995.

One of the first objectives was to set up a holistic three-year EE plan. The process of developing the plan was comprehensive, collaborative and inclusive. In 2001, a discussion paper and working paper were developed (NSW Council on Environmental Education 2001a, b). The first NSW EE three-year plan was released in 2002, *Learning for Sustainability: NSW Environmental Education Plan 2002-2005*. This comprehensive plan counted on collaboration between government state agencies, non-Government organisations, industry and the community to continue and further EE/EfS (NSW Council on Environmental Education 2002). The plan outlined strategies, actions, responsibilities and performance indicators. Specifically, for the NSW Department of Education and Training, it called for promoting ecologically sustainable ways of decision-making and living. This included the continued implementation of the "Our Environment – It's a living Thing campaign," programs such as "Living Waters, Living Communities," (29) and curriculum and school management initiatives about specified resources which had been developed to support specific stages and KLAs (36). Examples include "Stormwater—Everyone's Responsibility Every Day," "Journey with a Purpose," and components of the "Sustainable Schools Program" including School Environmental Management Plans and an accreditation program. The Department also had responsibility in developing understandings of global environmental issues and social equity issues in addition to understanding of the connection between the environment, the social, the personal and the political. Through the *EE Policy for Schools*, the three-year plan called for continuing the syllabi and, in cooperation with the established Environmental Education Coordination Network (a network of lead government agencies implementing and developing major EE programs and reporting to the Council), to implement a coordinated approach to developing and utilising resources. Lastly, the Plan called on the Department to work with NSW NPWS to develop consistent protocols to facilitate joint program development for EECs in national parks.

A category of "Environmental Education providers" did not include EECs. This list included: pre-schools, schools, tertiary/vocational education, industry training, government agencies, community-based adult education providers, unions, environmental interest groups, and other community organisations (NSW Council on Environmental Education 2002, 52). EECs

were listed, however, to take action in calls for the expansion of experiential learning in "recreational, ecotourism and community information activities" (37).

Environmental Education Policy for Schools

The NSW Environmental Education Policy and associated documentation was rolled out from 2001 (NSW Department of Education and Training 2001a).[104] This important revised EE document was released along with resources to assist with its implementation—a substantial 165-page document titled *Implementing the Environmental Education Policy in Your School* (NSW Department of Education and Training 2001b). A sign of the changing times was the cost of additional copies made available for sale through the NSW Department of Education and Training. There is a presumption that previous resources were complimentary. Evidence such as the past generosity of the government printing service supports this supposition. The policy focused on curriculum, management of resources and management of school grounds (electricity, water, waste and biodiversity). Many resources supported it. There were documents for each KLA introducing the policy, outlining the objectives, and identifying where and how strategies for each specific KLA could be applied. There were also support documents for the management of resources such as *Energy Management in NSW Schools* (DET 2001). The FSC/EECs once more had significant input into the policy and were integral in its rollout and associated teacher professional development.

> *Well… there was a strong relationship [between the FSC/EEC staff and the central office of the DET] because first of all they were in-puts in helping us write the policy and also they were a major player in implementing the policy. And it was a two-way thing they were really the foot soldiers if you like in getting things off the ground and teaching teachers how to do things. It wasn't just teaching kids.*
>
> XB

The policy, implementation plan and resources supported the integration of EE/EfS into the KLAs as well as through major holistic curriculum activities. The policy and plan involved

[104] While within the data there is evidence of the EE Policy being unstable, it now appears that the EE Policy retains its importance. An updated version (2017) with the same 2001 references to EECs is still available from the NSW Department of Education's policy library (NSW Department of Education 2017). An observation over the course of this study is that access to documentation within the Department can be variable at different times.

extensive professional development for teachers, school staff and communities. Workshops outlined the policy and demonstrated how to incorporate resource management within learning and generally how to incorporate holistic learning within a school (personal experience).

The EECs and zoos were supporting, and supported within, the documentation. They played and play an important role in supporting teachers and principals to meet policy requirements. They were listed in the section on learning opportunities outside school, and the document Foreword acknowledged their role.

> *In 1999, field studies centres were renamed environmental education centres (EECs) to reflect the broader role that environmental education is now playing in schools. Zoo education centres and environmental education centres in NSW are effective in demonstrating ecologically sustainable development to students. This is vital to the development of environmentally aware and responsible citizens who will advocate for the environment in the future.*
>
> (NSW Department of Education and Training 2001a)

With the rollout of the *EE policy* including a substantial sustainability component, EEC educators had become more actively involved in delivering EfS in their local schools.

> *They went into the school and said, "Okay, well this is what you can do here. Have you thought about doing that?" and so on. So, it was a practical exercise—rather than just saying, "Here's a policy. Go for it."—And in the early days in curriculum that's what they did, you know.*
>
> XB

There was recognition of EEC staff as leaders in their field.[105] Their advice and services were sought when the NSW Department of Education and Training and the Australian Government were implementing environmental education/sustainability education initiatives. EECs supported global/national environmental movements that were reflected in their programs. EEC personnel working within schools on EfS was a significant shift. There was diversification.

[105] This had happened on numerous occasions before but seemed broader and more wide-ranging with the extensive policy rollout, the increase in the number of centres, and the greater exposure within school grounds—student and teacher place-based education.

> *But with the environmental education policy for schools it gave us that imperative to start to provide something to support schools as they try to develop environmental management plans and try to integrate environmental education with their other curriculum areas…. The best way for people to learn these things—well I actually think engaging kids in doing… and that was part of the environmental education policy that kids were actually acting in some way for sustainability for the environment…. But we rode the coattails of the environmental education policy and, you know, that was very strong in the early part of this century.*
>
> QA

Initially, EEC personnel were worried that the EE component was to be lost within the new sustainability focus on schools, but this has not occurred.

> *And I think there was probably a little core of people that… were getting a bit edgy that, "Hang on. Yes, this is all important but let's not forget the main game."*
>
> EB

Rather, the EECs have become more important in providing all aspects of EE/EfS to schools.

> *When the Environment Education Policy came out there was a lot of discussion with the EECs prior to that coming out in the sense that some perceived that it excluded the EECs from part of the delivery or support of the Environmentally Education Policy to schools and teachers. Over time it's been shown that that isn't the case and in fact the EECs provide for schools possibly the most important professional learning base and services and environmental education programs to schools. So whilst the EE Policy 2001 focused [on] work that was going on within the school, the EECs have maintained a critical role in supporting schools and teachers in implementing that policy.*
>
> VB

The NSW Department of Education and Training, through its regional operations, was supportive of EE/EfS in a holistic context.

> *We had a period there through the late 90s and the early 21st century when in each of the regions, one of the school education directors had an environmental education responsibility as part of their portfolio. So, they would have meetings and they would… well often it wouldn't be them but they'd put together a team of teachers and us, who would be producing something for the region, you know, and there would be regional events and regional efforts to try and do something around the area… the education for sustainability concepts. So, that was the high-water mark.*
>
> QA

In addition to the national and state councils and networks, Smith and his contemporaries had formed a NSW Department of Education and Training Environmental Management Committee at a Head Office level. It was designed to coordinate operations across directorates. People who managed infrastructure, school sites, maintenance, buildings and equipment, asset management and accounts, in addition to people from the Curriculum Directorate and the Officer for Environment Management, all were involved. All were crucial in sustainability initiatives—systems thinking was an essential element.[106]

Educating for Sustainability Initiatives

Dovetailing with the *NSW EE policy* implementation was the Australian Sustainable Schools Initiative (AuSSI) and Sustainable Schools NSW (SS NSW), evidence of what is achievable when the necessary support structures are in place.

[106] Apparently, this inspirational structure of a committee was later to be seen by the Director of Curriculum as being overreach, going beyond the role of educators, and getting involved in the actual physical and financial management of the Department of Education and Training.

> *There was a network of professionals across different government departments. Department of Environment, Sydney Water, Land and Water, whatever, and they formed a fantastic team who met regularly… So the Sustainable Schools Program came out of a team of people such as that… Geoff Young was at the Department of Environment, Syd was at DET, they developed the idea for the Sustainable Schools Pilot Program. They wrote the submission, got the funding, got national funding for it. Those people were part of the National Environmental Ed Network—NEEN. So we had the state government level network, and then they fed into a national network with similar people from all over the country.*
>
> XC

AuSSI began in 2003 as a pilot in NSW and Victoria funded by the Australian Government. The initiative was a holistic learning program revolving around the implementation of efficiency strategies in relation to the management of school resources including water, electricity, waste materials and biodiversity. Measureable environmental, economic, social and curriculum outcomes were intrinsic to the program as was the involvement of the whole school community (ARTD Consultants 2010; Funnell and Larri 2005). Launched nationally in 2004, this integrated approach was a partnership between the Australian Government, State and Territory governments, and the Catholic and Independent Schools sectors (ARTD Consultants 2010). In 2005, the Federal Government had committed $2 million over four years to the AuSSI program with over 600 schools involved (Campbell and Nelson 2005).[107]

The SS NSW Program was developed in 2002 (NSW Department of Environment & Heritage 2014) and the NSW pilot program was implemented in 2003. It involved 200 primary and secondary schools supported by 20 casual teachers (NSW Department of Education and Training 2003). It was a joint venture between the NSW Departments of Environment and Conservation, and Education and Training and the Commonwealth Department of the Environment and Heritage. Developed to lead to more environmentally sustainable behaviour among students, teachers and community while enhancing the school environment and reducing resource use, the program involved developing School Environmental Management Plans through student-led auditing of resources.

[107] Note, this reference is text from a letter to the school community signed by Campbell and Nelson, Federal Minsters for the Environment and Heritage, and Education, Science and Technology, respectively. It was released with Educating for a Sustainable Future: A National Environmental Education Statement for Australian Schools in 2005.

Sustainable Schools Support Teams, generally supported by EECs, were at the centre of the program support structure. Over 1,500 schools (2000 people) from both the public and private sector have been involved in some way. They had either registered on the SS NSW website, participated in professional development, or developed a School Environmental Management Plan (Australian Education for Sustainability Alliance 2014, 52).

Another example of EE/EfS programs and professional development offered throughout the 1990s and 2000s was the "Learnscapes" initiative where learning programs are planned around the school landscapes and designed to maximise student interaction and learning within the environment—meeting syllabi and EE outcomes (Skamp and Bergmann 2001). Professional development courses had been set up by Smith, Chief Education Officer in the EE Unit in 1997 (Tribe 1997). Helen Tyas Tungaal, the teacher who developed "Learnscapes," with a team of environmental educators in NSW (Tyas Tungaal 1999), also produced a "Hands On Learnscapes" package in 1996. "Hands On Learnscapes" Incorporated was formed and when successful in acquiring Environmental Trust Grants set up the School Learnscapes Trust. The Trust provided consultancy services for pilot projects funded by the NSW Department of Education and Training. Other schools could access consultancy on a fee-for-service basis (Tyas Tungaal 1999). There was a long relationship between "Learnscapes" and the NSW Department of Education and Training with "Learnscapes" being included in Departmental documentation such as the *EE policy* and implementation document, and the Sustainable Schools NSW program.

While the NSW Department of Education and Training was initially happy to support such an innovative EE initiative, later on it had to dissociate from "Learnscapes" as it could not be seen to be supporting a private company. In 2005, the NSW Department of Education and Training produced a document titled *Landscape Management in NSW Schools* (2005) which relates to management strategies to reduce the cost of landscape maintenance and to improve school grounds. Nevertheless, it is linked to the *EE policy* and contains case studies of landscaping linked to learning.

> *So that was another really big thing. And there was a lot of funding went out and we went out to some schools on the Central Coast and try to help them implement this Learnscapes which is basically developing your grounds for sustainability education, but getting the kids to really think holistically… like the whole school community not just the kids, the school community… all the teachers. So that was a big thing and I remember spending a lot of time doing that and working with three schools on the Central Coast to implement those.*
>
> PB

"Learnscapes" was a significant program in the life of EE/EfS within NSW and some of the FSC/EECs. It is also indicative of the shift from a welfare state to private managerialism, where people supplying resources and services are reliant on charging a fee for services within an environment of diminished public funds.[108]

Change of Management within the NSW EE Unit: Decrease in Authority

Smith, Chief Education Officer, retired in 2004 and Kevin Butler became the Environmental Education Manager. It was a significantly less authoritative position than that of CEO. His job description was to provide strategic advice and leadership, and to manage operational support for schools and regions in developing, implementing and evaluating projects in the support and implementation of EE within schools. In addition to the downgrading of the position, contract positions replaced ongoing positions.

> *I think when Syd Smith retired, that was a significant event. And the reason why was he was what was called a… oh, he had a very senior role…He was originally a cluster director and then he got given… it was even more senior than a principal education officer. So he was exceptionally senior and as a consequence of that he was able to do things and get money for centres. He had a lot of influence so when he retired they didn't replace that position. It was replaced with, from my understanding, with Kevin's position. But Kevin wasn't as senior as what Syd Smith was and that would've been… goodness, around 2001 [sic 2004]…. The thing about Syd Smith's position is that it was a full-time position. So after that they became contract positions. So that meant that then Kevin's position went and then it was left to the other two education officer roles which were Vicki and Mark and that became just one position and then eventually that came no positions.*
>
> VC

[108] Is this due to lack of funds or waning of popularity or favour with funding bodies?

> *And it was very clear that a number of feathers had been ruffled by the wonderful Syd Smith.*
>
> XC

When Butler took over the management of the EE Unit there was a lot of money in projects but none to spare for the centres. However, Butler did take Syd's place in representing the NSW Department of Education and Training on the state and national level networks.

Within schools, unfortunately, the *EE Policy for Schools* lost its incentive and was no longer a strong document as there was a pullback in terms of Departmental and school commitment. School Environmental Management Plans were generally included in the school management plans of schools that were successful in implementing EfS, yet this was rare (Ladwig, Mockler, and Ross 2010). There was a broad range of schools completing School Environmental Management Plans–some successfully integrating whole school or cross-curricular EfS, some just ticking the boxes, and many not completing this work at all. In hindsight, as with the *EE Curriculum Statement*, there was disappointment at the eventual loss of effectiveness of the *EE Policy*. The lack of accountability for the implementation of the policy was seen as the issue.

> *And so that I felt, a couple of years after it was implemented, I kind of looked at it and thought well there is no reporting function and nobody is actually identified as having responsibility for checking that this is being done. If anything I think that that is one of the downfalls of that policy. And that's a critical point, it's just in hindsight that would be one of the things that should have been addressed.*
>
> VB

The UNESCO Decade of Education for Sustainable Development (2005-2014)

A National Environmental Education Statement for Australian Schools

It was the 2005 statement, *Educating for a Sustainable Future*: *A National Environmental Education Statement for Australian Schools* that gave a focus to ecological sustainability in schools (Australian Government Department of Environment and Heritage 2005). Developed in collaboration with all sectors, it added support for developing a systematic approach. Significantly, it was the first national document promoting a national approach to EE to be endorsed by the Ministerial Council on Education, Employment, Training and Youth Affairs

(Campbell and Nelson 2005).[109] In addition to referencing "ecological sustainability," this statement references "environmental education for sustainability"—putting the environment back into sustainability. The contribution of EE is acknowledged within this document as are the components of critical, holistic, creative thinking, action, and the interconnectedness of the ecological, social, political and economic systems. Written by Annette Gough and Brian Sharpley, this document gives a framework for EE for sustainability from K-12 to be utilised in conjunction with existing state and territory documentation. This systemic intent connects the UNESCO Decade of Education for Sustainable Development [2005-2014] (UNESCO 2005) to those on the ground working on the process.[110] A whole-school approach, including resource management and the AuSSI, is elaborated upon. Experiential, inquiry-based learning, values clarification and analysis pedagogies are among the important strategies outlined (Australian Government Department of Environment and Heritage 2005). For NSW, Smith was on the Statement Project Steering Committee.

> *And then at the Federal level we had the… they put out a brilliant booklet that I just loved to bits…. That was the "Educating for Sustainable Future Learning" and that was put out by NEEN, the National Environmental Education Network. That was good.*
>
> RA

[109] It should be noted that the Commonwealth Department of Education was apprehensive about being involved "They would not come to NEEC. They would not be part of that. They would be pulled kicking and screaming." It was the partnership of Peter Woods and Greg Manning in these Federal departments that got the Statement established. "But again, led by the Environment Department."

[110] Caring for our future: The Australian Government Strategy for the United Nations Decade of Education for Sustainable Development, 2005–2014 was released in 2007. There was also the Business Roundtable for Sustainable Development and the Australian Research Institute in Education for Sustainability (ARIES). ARIES have produced significant sustainability documentation such as A National Review of Environmental Education and its Contribution to Sustainability in Australia (Tilbury, Coleman, and Garlick 2005), Whole School Approaches to Sustainability: A Review of Models for Professional Development in Pre-service Teacher Education (Ferreira, Ryan, and Tilbury 2006), Mainstreaming Sustainability into Pre-service Teacher Education in Australia (Ferreira et al. 2009), and Mainstreaming Education for Sustainability in Pre-service Teacher Education in Australia: Enablers and Constraints (Steele 2010).

The 2007 Strategy for the UN Decade of Education of Sustainable Development outlined the National Environmental Education Statement for Australian Schools, the Australian Sustainable Schools Initiative, and the National Goals for Schooling and National Statements of Learning as drivers for Ecological Sustainable Development in formal schooling (Australian Government: Department of the Environment and Heritage 2007).

Moves Toward a National Curriculum and Federal Funding Support

After the Federal election in 2007, the Federal and state governments were majority Labor and there was a concerted push for a national alignment within education (Mockler 2018). In 2008, the Australian Curriculum Assessment and Reporting Authority (ACARA), an independent statutory authority, was established through an Act of Parliament after agreement between the Federal, state and territory Governments (Hughes 2018).

For EfS, the national overarching education statement evolved even further in 2008 with the *Melbourne Declaration for Educational Goals for Young People*,[111] calling for active and informed citizens who "work for the common good, in particular sustaining and improving natural and social environments" (Ministerial Council on Education Employment Training and Youth Affairs 2008, 9). It directed environmental sustainability to be integrated across the curriculum—"a focus on environmental sustainability will be integrated across the curriculum and all students will have the opportunity to access Indigenous content where relevant" (Ministerial Council on Education Employment Training and Youth Affairs 2008, 14).[112]

At the same time that support within the NSW Department of Education and Training was waning, support for environmental education professional learning and environmental science-related innovations in schools was significant. Grants were available through both the Australian Government Quality Teaching Program, and the Australian School Innovation in Science Technology and Mathematics Project (Campbell and Nelson 2005). The funding

[111] Note the Melbourne Declaration for Education Goals for Young People was succeeded by the Alice Springs (Mparntwe) Education Declaration in December 2019. Like the Melbourne Declaration, the Mparntwe Declaration calls for "Active and informed members of the community who… have empathy for the circumstances of others and work for the common good, in particular sustaining and improving natural and social environments." The words "members of the community" replace "citizen" and "empathy for the circumstances of others" has been relocated to this space—a sign of changing terminology and perceived societal needs, perhaps.

[112] The "access Indigenous content where relevant" wording in this quote is included as within the Australian Curriculum Aboriginal content is a cross-curricular priority alongside EfS and there are strong synergistic links between these subjects.

for the former was not specific to EE/EfS but was available to it. It stopped in 2012 (Australian Education for Sustainability Alliance 2014). Additionally, STEM—Science, Technology, Engineering and Mathematics, seems to have become an educational priority (C. Smith and Watson 2019). In 2007 the Federal Government gave EECs $50,000 to support SS NSW AuSSI activities, specifically to support the SS NSW website. In 2008 professional development supporting 440 teachers was funded by the NSW Department of Climate Change. In 2009 similar funds sustained the training of 280 teachers. This support structure, and these programs and funding, kept EECs busy given they were generally the nexus on which these programs were built.

> *And also, at the time, as well, it lined up with other things that were happening in other sectors of state government. So we had a couple of… I think we had two successive three-year plans. Strategic state government plans for sustainability education… So schools were one player, and that for businesses, industry and government sectors—there were benchmarks being set. But, not only was it a plan, there was money being put to it. So this policy came out of a time when there was significant momentum for sustainability education, there were strategic plans across all government, at all levels of government, for implementation across society. And money to back it up.*
>
> RA

With significant funding from other sources, the EE Unit was in a position to employ staff to assist with various projects. Butler employed Caddey as the Senior Education Officer/Coordinator in charge of Sustainable Schools in 2005. Caddey became the acting EE coordinator, and then took on the sustainability policy advisor role (2005-2014). Caddey provided policy and implementation resources, support and advice. He played a fundamental role in coordinating EEC conferences and communication. Along with the many principals who were very active, politically astute and excellent pedagogues, there was work on enhancing the centres' role and function within the NSW education system. The EEC conference, held earlier in the year with guest speakers and the principals' conference or meeting where strategic planning was central, were important forums for EE/EfS and centre development. The Commonwealth Government funded these for many years through the EE Unit.

EECs: Consolidating Support Networks and Continual Enhancement of Services

Within the centres, the Primary Principals' Association State Council was tapped into as a way for the Environmental and Zoo Education Centre (EZEC) Network to promote themselves.

> *You've still got to promote that good work because if it goes unnoticed by those that make big decisions it is all for nothing.*
>
> SA

Apparently, principals like Foott and Miller had kept the centres in the forefront for many years but things were waning in the mid to late 2000s. Foott had applied for observer status within the Association—it had supported him in his quest for principal status. Foott was apparently a hard act to follow.

> *A real character, super intelligent and never took a backward step.*
>
> SA

In addition to EE/EfS promotion, the State Council enabled EEC consideration in Council policies. It was/is a good platform to keep cognisant of educational issues in NSW. A platform to keep informed about issues that are making it more difficult for principals to consider EE.

The mission to look at improving the effectiveness of the EECs to deliver high-quality learning programs aligned to the *EE Policy* for the students and teachers that visited the centres continued. Additionally, high quality professional development for teachers needing support in the implementation of the *EE Policy* in their schools and classroom programs was scrutinised. There was an exploration of ways to support pre-service teaching with resulting relationships formed with Macquarie, New England and Sydney Universities. With in-service teaching, the Melbourne Declaration, and with the Australian Curriculum on the horizon, there was an opportunity to embed the service and the programs that the EE centres provided to teachers individually and to schools more broadly.

The Earth Citizen and Curriculum Framework

The next iteration of the NSW learning for sustainability plan, *The NSW Environmental Education Plan Learning for Sustainability 2007–2010*, created an action that gave rise to the development of a conceptual framework—*Earth Citizenship: A Conceptual Framework for Learning for Sustainability* (NSW Department of Education and Training 2009). Simultaneously, NSW managed one of the projects that emerged from the National Education for Sustainability Network looking at where the different states and territories were in terms of EE policy, programs, teacher professional learning, and where they were in terms of the progress, structure and implementation of their sustainable school programs. NSW reviewed EE approaches and frameworks nationally and globally (Skamp 2009). This led to the NSW Department of Education and Training developing a draft Earth Citizen document. At that point in time, NSW was the only jurisdiction to have an EE policy that specifically mentioned sustainability in the broad sense. Other jurisdictions talked about EE as an integrated part of their learning but often just related to science and geography.

> *So New South Wales and to a certain extent Victoria… led the way with their Sustainable Schools programs as a way of introducing sustainability to teachers.*
>
> VB

Butler, with a background in curriculum development, saw a place for developing a curriculum framework to support EE/EfS in what had been a piecemeal, silo curriculum arrangement that made integration across the syllabi difficult. The Board of Studies was ostensibly developing an integrated holistic approach to EE/EfS, but in fact were not actively producing anything substantial as required by the Department of Environment *Learning for Sustainability* plan (Environmental Education Unit Environment Australia 2000; NSW Council on Environmental Education 2002). A few people had attempted to set EE/EfS curriculum standards, Kim Walker and Helen Sharp (n.d.), for instance. Yet nothing had gained traction or been set as a foundation by the mid to late 2000s although the national statement (2005) provided guidance. Furthermore, development of a framework was supported by the national and state plans, the Adelaide Declaration, and later the Melbourne Declaration and the Sustainability Statement—all backed by the overarching Decade for

Education for Sustainable Development. For EECs, the development of an EE/EfS curriculum is important given they are constrained by the syllabus in some respects.

> *While it's really, really valuable to have that discipline base, you've got to have opportunities for students to integrate across, otherwise they never join the dots… now if we wanted to truly support environmental ed centres to perform the function they should be performing, we would have to reform the bigger picture in which they exist.*
>
> XC

While it was the Board of Studies responsibility to develop curriculum and the Curriculum Directorate's position to implement it, the EE Unit went about developing a framework by leveraging the involvement of one of the architects of the Quality Teaching Framework, Associate Professor James Ladwig. The Quality Teaching Framework, incorporated into Departmental practice, was very favourable at the time. The Directorate supported and contributed to the funding of the Earth Citizen project. While this document never saw publication and remained a draft in October 2009, it was an instrumental document. Other funders included the NSW Environmental Trust, the NSW Department of Environment, Climate Change and Water, and the Australian Government Department of Environment, Water, Heritage and the Arts. The document placed the necessary components of being a citizen for the earth and learning for sustainability within four encompassing circles: wellbeing, citizenship, practice and knowledge. Wellbeing nested within being a change agent, biosphere custodian and global citizen. This then nested within systems seeking and testing, world viewing and valuing, and futures thinking and designing. This in turn nested within ecological systems and processes, and social systems and technologies (NSW Department of Education and Training 2009). An essential aspect of the framework was the "repertoires of practice" necessary within the "systems seeking" and "world and futures thinking" in order for them to be adopted and adapted and become a reality in people's lives.

The development of this document was a broad collaboration with a host of academic advisors, including Ladwig, Associate Professor Nicole Mockler, and curriculum consultants. Once more, the EEC/Zoo personnel played a significant role in development. They were involved in workshopping the framework—devoting a whole conference to working on the concept. Butler wrote the document with other Project team members from the NSW Department of Education and Training's EE Unit.

With a diversity of views about EE/EfS within the centres, the development of the Earth Citizen document was seen from different perspectives within the interview data. In addition to the problems of defining sustainability, some found the development overly anthropocentric. However, for some it really fitted into its time and space and was seen as the way to shift or move EE/EfS into the future.

> *They were talking about a very anthropocentric view, sustainability, not an ecocentric view. The view on sustainability really wasn't what I'd call sustainability. It was just about sustaining people on the planet, not all living things.*
>
> AA

> *But the thing that I still use now, that I'm trying to keep alive, is that curriculum document that talks to Earth Citizens and talks to understanding exactly what we need to have as far as our students' journeys are concerned from K-12. And that was a real privilege to be involved in that thinking… And I still use that now most weeks… to inspire and to encourage and to show how we package up learning journey from kindergarten kids and how it is different, right up to our Year 12 cohorts and we're doing stuff with universities now as well and that fits in…. I guess the perspective I hold onto from that significant event is just to understand what "future thinking" means, what "systems thinking," means and "world viewers," means… from a perspective of custodians of conservation.*
>
> VA

The Earth Citizen document was important because even though it did not make it to a final version, it was a significant input into the national framework published the following year.

> *This eventually developed into a project to write the Sustainability Curriculum Framework for the Australian Government. So in the lead up to the publication of that framework there was extensive consultation within the National Environmental Education Network; a review of the NSW policy, the policy settings in various states and territories… and the situation that was happening with pre and in-service teaching.*
>
> VB

The Australian Government Department of Environment, Water, Heritage and the Arts published *The Sustainability Curriculum Framework: A guide for Curriculum Developers and Policy Makers* in 2010. Its frame is similar to that of the Earth Citizen document. Certainly, Butler, Ladwig and Mockler developed the *Earth Citizen* and the *Sustainability Curriculum Framework*, together with an unpublished assessment document, to address sustainability pedagogy, curriculum and assessment needs (J.G. Ladwig, pers. comm., July 26, 2019). The published curriculum framework is depicted by an image of the world globe

wrapped in a flowing cloth of sustainability action process, trailing off into a two-pronged tail, similar to a Siamese fighting fish tail. It captures the essence of the framework. The centrality of the globe expresses the significance of the action process. One section of the tail contains the ecological and human knowledge systems while the other comprises the systems thinking, world viewing and future and design thinking with the all-important "repertoires of practice." Incidentally, Skamp stated in his detailed critical review of international best practice and research evidence regarding the implementation of EE/EfS within primary and secondary education (2009) which nourished the Earth Citizen document:

> *Learning outside the classroom is an imperative in an EfS curriculum framework. It also reinforces the role of EE Centres provided their focus moves with the changing emphases in EfS, for example, to ecological foot printing and links with communities in addressing local environmental issues. Curriculum developers must ensure learning outside the classroom is integral to a curriculum framework.*
>
> (Skamp 2009, 61)

The Curriculum Framework (Commonwealth Department of the Environment, Water, Heritage & Arts 2010) was timely for the development of the Australian Curriculum. It outlines sustainability outcomes for students at the end of Year 2, 6 and 10 within the three organisers: sustainability action process, knowledge of ecological and human systems, repertoires of practice with systems thinking, and world and futures thinking. The Sustainability Curriculum priority organising ideas within the Australian Curriculum are based upon the Sustainability Curriculum Framework organisers, and these organising ideas filter through the content descriptions and elaborations of the Australian Curriculum into the NSW syllabuses' outcomes and content.

> *So the Sustainability Curriculum Framework in the lead up to the development of the Australian Curriculum with sustainability as cross-curriculum area… We have actually reset I suppose some of the language of teachers and I suppose set a higher level of expectation of what students should be learning about and thinking about in relation to sustainability at those milestones, early primary, end of primary and end of secondary.*
>
> VB

The Australian Curriculum

Unfortunately, and disappointingly, the desired holistic national curriculum was not to be. There is little evidence of consideration of the Framework in the development of the Australian Curriculum (A. Gough 2011) with the stronghold of the major curriculum disciplines maintained. Even though sustainability was to be one of the three cross-curricular priorities, the development of the science, mathematics, English and history curriculum before thought went into the concept of a holistic curriculum, disadvantaged EE/EfS from the genesis.

> *The structure that existed when the Board of Studies was formed in the early 90s or the late 80s, that structure has won. It's kept its influence because the syllabus committees were formed around the subject disciplines. The CEOs, the heads of teams in the Board of Studies were heads of teams of disciplines. It was all set up so there could be no other outcome. Like there was not a team of curriculum hand grenade throwers that had influence in the meetings. So the idea of having a multidisciplinary approach was made impossible by the institutional setup of the Board of Studies and by the institutional set up of the national body, made even worse by the fact that Gillard took four subjects alone and had them written up, which prevented a holistic or integrated approach. So the outcome is what you'd expect. You can't develop curriculum that way if you want something… So when they talk about skills for the 21st century, we developed documents based on skills of the 19th century.*
>
> XC

The rationale for the Australian Curriculum for Science K-10 shifted from a focus on contemporary science, including climate change, adaptation, biodiversity and ecological sustainability, to a focus on a scientific literacy that does not include these elements (A. Gough 2011). Environmental science was not listed within the science understanding strand in the *EE Curriculum Statement* while the traditional science subjects were—even though Earth and Environmental Science was and is a Year 11 and 12 Australian Curriculum course. There were also questionable associations foreseen as being difficult for the necessary cross-curricular connection in the "Science Understanding" and "Science as Human Endeavour" components of the traditional sciences. There was little connection within the mathematics curriculum, and minimal reference in history to how humans use the environment—and no broadening to human impact and shaping on the environment and vice versa (A. Gough 2011). Furthermore, it is argued that without the content descriptors, elaborators, and assessment standards of the established learning areas, it is difficult for sustainability to be a

priority (Hill and Dyment 2016). Indeed, the content and skills within the sustainability cross-curricular priority were viewed as implicit and lacking (Prescott 2016).

> *So what we find is because of the holistic nature of the biosphere almost any environmental education topic or project is going to be radical, it's going to annoy vested interests massively, and it's going to be seen as a wound in the side of some developer, some industrialist, or whatever, okay. And that is the nature of it. So it's inherently problematic for education and yet it has to be done. So it means that until this way of thinking somehow becomes some part of the hegemony it's going to be fighting to get a foot in the door. And yet kids do understand it. So it's inherently political and it is going to annoy the shit out of vested interests. It is part of the problematic of the whole thing. We know there are people who play the game for the environment very, very well, they're diplomats, they're marketers, they're optimists. They can take people along with them. There's a whole bunch of skills there that we want everyone to develop so they don't feel that every issue has to be dealt with by marching with a placard down the street, you know… If you can't see it, you can't counter it. You've got to be aware that it's happening.*
>
> XC

An observation of the effectiveness of the Australian Curriculum's cross-curricular priority of "sustainability" is reminiscent of the effectiveness of the *EE Curriculum Statement* and Policy. While sustainability is now, often implicitly, within the curriculum there is still no accountability of outcomes.

> *Now we've got accountabilities for teachers to implement the Australian curriculum and yet I think I'm seeing the same pattern emerge where the sustainability cross-curriculum priority, because it isn't a feature of every learning area and there would be some teachers who are not doing it well and so now there are some schools who aren't implementing the Environment Education Policy or the sustainability cross-curriculum priority.*
>
> VB

A Broadening of the National Approach

In 2009 a new National Action Plan had been developed in conjunction with the non-statutory National Council on Education for Sustainability [ex-National EE Council] (Commonwealth Department of the Environment Water Heritage and the Arts 2009). This plan was much broader in focus with the following strategies: demonstrating Australian Government leadership, reorienting education systems to sustainability, fostering sustainability in business and industry, and harnessing community spirit to act. Sustainability within

university courses and through a whole of university approach had a strong focus within this document, which was another Australian support for the "Decade of Education for Sustainable Development" (ESD)—at the half way point. Once more, educating for ecological sustainability or EfS are not touched on. The environment takes its place with "social," "political," and "economic" imperatives though one will be glad to know that biodiversity and ecological integrity is conserved with appropriate valuing, appreciating and restoring within this documentation.

There were significant developments in early childhood education with the production of the National Quality Framework for Early Childhood Education, *Belonging, Being and Becoming: The Early Years Learning Framework for Australia* in 2009 (Council of Australian Governments & the Department of Education, Employment & Workplace Relations 2009 cited in A. Gough 2011). The learning framework included communicated connecting and contributing to the world in addition to being socially responsible and respectful of the environment. Implementation has foundational significance for EE/EfS.

Waxing and Waning of EE/EfS Favour

On a state level, the NSW EE Council was disbanded about the time that Frank Sartor (2009) became Minister for the Department of Environment, Climate Change and Water. Apparently it was not a high priority. The Government had no clear EE/EfS agenda.

> *From a New South Wales perspective, about 10 years ago a Labor Environment Minister in Frank Sartor, really did a disservice to the environment. He didn't reinstate or establish or re-establish the NSW Council on Environmental Education and so a whole policy area that had high level, whole of NSW government commitment, fell away completely and so the shift in that priority from the government position had a knock-on effect essentially. It is difficult to even try to estimate what impact that really had but I believe it has been far-reaching.*
>
> VB

Within the centres, at times teaching certain topics has seemed politically fraught only to become *de rigueur* soon after… or vice versa. One time when EEC personnel had to keep their heads low was at a change in governance when climate change was definitely taken off

the agenda and funding and favour fell away almost overnight. The following quote exemplifies the experience of an EEC during the change over from the Howard to Rudd era.

> *Well, I mean, that was my thing that I was most proud of as an environmental education centre person. I ran three years running some climate change debates in our state parliament here and I managed to get groups from the great majority of high schools in this region. So, in the end we got about 60 odd schools in there and I equipped them to have debates around the whole issue of climate change and all the different elements of that. And they were government and opposition and they argued for and against. We did the whole political thing because I've got a strong bent in that way. I could see that the way things happen is by political means. I was skating on thin ice when I first ran this. But again, ups and downs. When I started I think bloody Abbott was in and he was a climate change denier… no, not Abbott… John Howard was in, and he was still almost denying climate change and the region was very afraid of me going into state parliament and running a debate on it. I think they thought it would be in the news and negative for them. Within a year or two, Rudd was in and we were going to… you know… Garnaut was producing his report and we were going to have a great and wonderful climate change policy. And we were just students doing the right thing.*
>
> QA

At one stage there was significant Federal money supporting programs such as "Climate Clever" and the "School Climate Change Initiative."[113] They supported action, student-led participatory inquiry-based learning similar to the sustainable schools programs (NSW DET 2010). For some EECs, the apex was 2010 when the "Year of Sustainability" was celebrated in NSW schools. There was a principals' conference with a sustainability theme for the North Sydney Region, the tail end of the climate change project funding, and significant activity within schools. Yet, for a few, some of the funded project work was viewed as unrealistic and ultimately disappointing:

[113] Climate Clever is another program piloted in around 2010. It now has an online program that it sells to schools for $8 per student (Climate Clever n.d.). There were and are a plethora of EfS programs in schools. For instance, CarbonKids is a CSIRO initiative in partnership with the pharmaceutical company, Bayer, closely linked to AuSSI (Australian Education for Sustainability Alliance 2014). Developments associated with the School Climate Change Initiative appear to have either faded into obscurity, are unavailable online, or have been rebadged.

,

> *The reality was that the schools found it very, very difficult to find the time to do that. And if they didn't have support and very, very strong support from not only the school administration, the principal etc. they had to have very strong support from the school community…. You know we got involved in some projects that there seemed to be all this support for and promises of funding and things, we'd go out to schools and then six month later there'd be a change of minister or sometimes a change of government and the thing would fall over. We've had a number of cases where things like climate change were on the agenda and there was a push for it. You know it was put into syllabuses and now it's been taken out again. You know it's very difficult to keep a focus going and especially… it's very frustrating sometimes that you put your heart and soul into something and then you get the rug pulled from under you. That Climate Change Learning Community was particularly, you know, one that was fairly galling.*
>
> WA

The EE/EfS funding contracted in the early stages of the last decade (2010s). Additionally, with a change in government, "climate change" became a topic to be wary of teaching for fear of repercussions. Centres shifted back to their safe space—teaching fieldwork within the curriculum.

> *There was a lot of fieldwork and supporting schools with sustainability but usually they were kind of the one-off activities from our end. You know, Green Days, things like that that we were supporting. And then we started running professional learning on sustainability aspects. And there was a lot of money for it. There was a lot of push for it. And it almost fell away overnight when there was changes in government I felt… And then after that, it just… It wasn't good to have climate change in your name. There was just a change in…you know climate change became a bit of a word that you had to be careful using…. It was and that was after a change in government. There is absolutely no doubt about it. And it became… sustainability became you know… It was a very tricky time and…, at centres we often had conversations about ensuring that we were still relevant in a way… I don't think it was a conscious move but a lot of centres… we kind of almost went back to fieldwork in a way, I felt. And supporting syllabus… there's been a trend for the centres to support curriculum and I think that was about making sure that we remained relevant.*
>
> VC

There were also vagaries and waxing and waning with what was allowed within regions or clusters due to the change in various inspectors or supervisors, though the timing of the following example was possibly a little earlier.

> *… in the DET we had one particular person who was an inspector. And they did not give us permission for students to stay in the building, like an accommodation centre, and so all we just did was wait 12 months-two years and she eventually moved on so we then went ahead and got the kids staying in the building, and didn't even ask permission that time.*
>
> AB

To illustrate the waxing and waning of favour of EE/EfS within NSW bureacracies: the definitions of EE and EfS in the glossary of the NSW Department of Environment and Climate Change's guide to using research in sustainability programs (NSW Department of Environment and Climate Change 2009) were quite progressive.

> ***Education for Sustainability*** *Also known as EfS and sometimes referred to as "learning for sustainability", it involves people working together to: envision a sustainable future; critically think and reflect about the power, politics, structures and information flows in society that influence change; think systemically and broadly about issues; and work in cross-sectoral partnerships to achieve change.*
>
> ***Environmental Education*** *Any process or activity that assists the development of awareness, knowledge, attitudes and skills leading to environmentally responsible practices and behaviour and more sustainable societies.*
>
> (NSW Department of Environment and Climate Change 2009, 2)

Juxtapose this with the NSW Office of Environment and Heritage and the NSW Environment Protection Authority *Sustainability Strategy 2015–20—Sustainability Leadership: Let's Take Action Together* document, which does not mention education (NSW Office of Environment and Heritage and Environment Protection Authority 2015). It is interesting to note the absence of reports from NSW Office of Environment and Heritage website and the NSW Department of Education from time to time. For instance, in the course of this study, at one stage it was very difficult to locate information about the EECs and the NSW policy. Now they are easily accessible.

EECs and Technology

In contrast to these changes, each centre has found its own equilibrium when it comes to the use of technology. While experiencing the environment is paramount—the "in" the environment being important, EECs utilise technology in many diverse and innovative ways. Generally, technology is put to good use in managing, communicating and networking. Used for promotion, booking and coordination, it also effectively supports the teaching programs providing the facilities for pre and post visit work and resources. Technological support has changed significantly over the years. One of the earlier teachers-in-charge remembers:

> *In the 70s we used to sit out and do, you know, little fact sheets using a Gestetner and a typewriter and then mail those out to the schools that were coming, or just ring them.*
>
> FA

Many centre staff, although acknowledging the possibilities of technology enhancing the outdoor experience if used smartly, are wary of technology compromising the experience of connecting to the environment, outdoors. However, there are some great uses of technology in centres. For example, at Gibberagong they were intending to put cameras on a native beehive with a counter and sensors for temperature, rain and humidity. In the past they would have been reliant on a few snapshots of data. This was an opportunity to take the centre to schools—another way of reaching a larger audience with engaging learning. Another idea was the use of remote sensors in different habitats for real time long-term experiments, adding greatly to the learning experience. The equipment needed weatherproofing and to be cost effective before it could be used extensively by centres, but this no doubt will happen or has happened. Wise technology use can increase the audience and enhance student engagement and learning. The Field of Mars EEC was cited consistently within the data as leading the way in utilising technology to great advantage.

Evidence of EEC Effectiveness and Support within EfS Program Evaluations

Refocusing on the EfS funded programs of the 2000s, some were evaluated throughout the decade. A review of the NSW Sustainable Schools Program (Funnell and Larri 2005) indicated that the EECs played an integral role in the program.

> *Environmental Education Centres were a source of support to SSSTs [sustainable schools support teams] during the pilot of the SSP and given appropriate roles and professional development may well become an ongoing source of support to schools in relation to the types of activities that have been undertaken thus far by SSSTs.*
>
> (Funnell and Larri 2005, 30)

Most of the Sustainable Schools Support Teams were based in EECs. Similarly, the School Climate Change Initiative (2007-2009) was based on learning communities where the EEC input was integral to the success of the individual initiatives (Ladwig, Mockler, and Ross

2010). Of interest is the reluctance of the NSW Department of Education to utilise these evaluations to their full potential. Neither the NSW Sustainable School Initiative Evaluation nor the full evaluation for the School Climate Change Initiative has been made public by the NSW Department of Education. Sustainable Schools NSW (SS NSW) received funding from the NSW Office of Environment and Heritage until 2017. The AAEE NSW Chapter started managing SS NSW when the program lost its funding (Australian Association for Environmental Education 2019).[114]

An evaluation of the Australian Sustainable Schools Initiative (AuSSI) published in 2010 found that overall there had been substantial progress made toward the achievement of AuSSI goals. One of the findings was that resources, such as EECs, provided a focus and resource for EfS professional development and school activities. One third of schools had registered with the program (3000). Even though recommendations included the continuation of the program, by 2011 AuSSI had ended and the National Government was failing to provide adequate support (SBS News 2017). In reading through the AuSSi program documentation, it is clear that funding bodies expected the program to be self-sustaining after a certain time and resource allocation.

Rationalisation and Precarity in EE

With contracting government support, the EE Unit kept diminishing, even when there was a supportive Director General like Michael Coutts-Trotter (2007-11). As an anomaly, outside the power structures of the institutionalised siloed curriculum, the EE Unit was an easy target for funding cuts.

> *And on education when there was any kind of review of the operations of Curriculum Directorate and accountability of Curriculum Directorate, and funding for Curriculum Directorate, then strictures were put on the Environmental Ed Unit.*
>
> XC

[114] The program had received a small amount of funding to caretake the program but it is not known if this is continuing.

Much of Butler's time was spent writing ministerials—briefings and letters. Letters of complaint to the Minister relating to EE/EfS support would land on Butler's or Caddey's desk for response. Butler retired in 2010 and Caddey took on the caretaking role of centres, yet again, in a less senior role.

With the position in the EE Unit looking precarious, Caddey moved to the NSW Office of Environment and Heritage in 2014 where he supported EE within education where possible. The NSW Department of Education and Communities did not fill Caddey's position. For EECs it was the start of a few rudderless years in the wilderness.

> *It was in a vacuum for a period of time and it was quite difficult to find anyone in the Department who was technically managing the policy area. Administratively they're managed by each of the directors of that local area, but no one has a policy leadership position at a Director level for the EECs and that's one of their main issues. So there is no director level person that can advocate on their behalf for these sorts of issues.*
>
> VB

Centres had quite a bit of experience dealing with being within a bureaucracy amid considerable flux.

> *And we've had to be very strategic in terms of promoting ourselves at times when we felt under threat. But a lot of other times you feel [the need] to keep your head down because, you know, you can run things at your own pace, what you considered to be the important things without having to worry usually about these other things. Now that also depends upon who your SED is, your school education director… The strategic direction and the systemic support has changed so often. You know, it is very hard to plan on where you're going when you don't know whether that unit is going to be there next year, whether they'll be funding for it… in terms of any staffing and support for EECs where do you go for it, who do you apply to? If a centre has a really good program at the moment and a really good case for say grabbing a second or third teacher how do they do that? And what happens is that really… as I used to say at the time, "I'm sorry guys but you just have to bury your own dead."*
>
> WA

Centres kept their heads down given the political climate—shifting back to fieldwork, their safe space.

> *To me policies change, some go in and out of favour over time and then the syllabus and all the rest changes as well. For us what we've tried to do regardless of whatever system is in place, and whatever curriculum's in place, and all the rest, is to find our niche and how we can actually interpret whatever policy and whatever syllabus exists to make it work in an outdoor setting. And I think in some cases… at the end is our core business. If we look at the syllabus and go, "No, there's nothing in there for us," there's a lot of danger there in terms of keeping us relevant and connected. I think part of the reason that we exist is because all the EECs have basically been able to maintain a really strong connection to syllabus. Because at the end we are teachers. All the environmental ed centres are actually classed as schools. And our job is to deliver a curriculum. We're just delivering it in the best possible classroom that exists.*
>
> KB

It was not just the EE Unit within the Department that was contracting. Environmental officers within many organisations have disappeared or diminished in number over the years. The once strong Museum EE group seems to be non-existent.[115]

> *If we look at where the Department of Education previously had teachers in cultural institutions including the Art Gallery, the museum, all of those positions have disappeared over time and now those establishments are expected to provide their own education staff. Really the only relationship that exists with key government organisation are the Zoos—the Zoo Education Centres are really the only locations where that arrangement still exists.*
>
> VB

Communities of Practice: EECs Aligning with Departmental Priorities

With declining systemic support and the developing Australian Curriculum feeding a cross-curricular priority into new NSW syllabi, focused learning communities or communities of practice were perceived as a way forward for EECs. In a proactive move DeLandre, principal of the Illawarra EEC, secured National Partnership funding of $50,000 in about 2012 to start a leadership program and support a learning community. It was a move to establish a more cohesive and active community of practice across the Environmental and Zoo Education Centres (EZEC) Network. Michele McFarlane at Red Hill EEC secured another $20,000 in 2015 to continue the work. DeLandre led the way in developing portfolio groups for the

[115] These people may have been rescued within AAEE.

EZEC Network to improve performance in certain areas—aligned with the NSW Department of Education and Communities priorities. Certainly, the communities of practice are one of these.

> *We've never worked as cooperatively as we do now.*
>
> VC

EZECs have often been in the vanguard of new initiatives be they pedagogies, policies, or Departmental strategic directions. They have often assisted with the rollout of policy and practice or testing of new equipment such as smartboards, Apple computers and connected classrooms. They undertake the same lessons, so often they can hone lessons faster than teachers in schools who may teach them once or at best a few times every year or two. The centres are models of best practice when it comes to not only EE/EfS but active pedagogies that embrace many of the elements proven over the years to enhance learning (NSW Department of Education and Training Professional Learning and Leadership Development Directorate 2008).

UNESCO: The End of the Decade of ESD/ Start of Sustainable Development Goals

Following on from the "Decade of Education of Sustainable Development," the 70th session of the UN General Assembly adopted the *Sustainable Development Goals* to be achieved over the following 15 years [2015-2030] (UNESCO 2019). They ambitiously include no poverty; zero hunger; good health and wellbeing; quality education; gender equity; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequities; sustainable cities and communities; responsible consumption and production; climate action; life below water; life on land; peace, justice and strong institutions; and partnerships for the goals. Certainly, EE and even educating for an ecological sustainability seem to have been lost within an anthropocentric priority within the economic paradigm.

It is noted that EE appears to be buried further and further under the rubble of the industrial neoliberal state of play (The Political Compass 2019; UNESCO 2019). Take Global

Education: while the Global Perspectives framework connects with EE via the *Educating for a Sustainable Future: A National Environmental Education Statement* for Australian Schools (Australian Government Department of Environment and Heritage 2005), the framework itself had "sustainable futures" as one of its five learning emphases (Australian Government: AusAID 2011). The ecocentric connection seems a little lost and not so significant in the framing. This fading of EE/EfS within global interests was acknowledged by A. Gough (A. Gough 2011), as was the inaccessibility of some of the important EE/EfS documents on departmental websites from time to time. The anthropocentric dominance continues.

> *Despite what appears to be the ever increasing diversity of WIIFM (What's in it for me?) supporters that includes some members of the more radical recreational groups of four-wheel drivers, motorcycle riders, prospectors, hunters and fishermen, they often seem to be using very similar words. We regularly hear: "We have a right to do as we please in our parks and we need to unlock these areas for all to use." It seems both state and federal governments agree with some of this rhetoric as we are witnessing the lowering of the protection standards across our park systems to accommodate some of their demands.*
>
> (Lawrence 2014)

Who Cares About the Environment?

A measure of the people of NSW's environmental understanding, care for and behaviour toward their environment can be gleaned from the EPAs *Who Cares About the Environment?* triennial reports. The first report in 1994 produced a benchmark survey of the environmental knowledge, skills, attitudes and behaviours of the citizens of NSW (NSW Environmental Protection Agency 1994). Findings were that people believed that a healthy environment and a prosperous economy were compatible, and the environment was an important issue. Unemployment was people's biggest concern but ten years later, the environment was nominated as the biggest concern. By 2003 it was reported that the people of NSW had a more sophisticated environmental knowledge—identifying and discussing specific environmental issues in more detail. Fewer people were unsure or did not know about environmental issues (Department of Environment and Conservation [NSW] 2003).

In 2012 people continued to value their environment, making the most of outdoor spaces. They were less concerned about their environment but had "varied concerns about complex

global environmental problems, influenced by the confusing nature of debate over these issues" (NSW Government: Office of Environment and Heritage 2012, 2). Almost half thought there was not enough emphasis on natural habitat protection in relation to other land use needs and that mining and development environmental regulation was too lax.

The 2015 Report is the last publication to date as the 2018 edition has been postponed to streamline the project with the new NSW Office of Environment and Heritage corporate strategy (NSW Government: Office of Environment and Heritage 2019). Environmental issues disturbingly ranked sixth as a priority in 2015 and eighth as a projection for ten years' time—transport, health, education, social issues and unemployment outranked them in 2015, and they were additionally outranked in the 10-year projection by planning and development, and the cost of living (NSW Government: Office of Environment and Heritage 2015). The 2015 ranking had not lowered but the projection had. A large proportion of people were concerned about environmental problems (73%) with over half of these being concerned for future generations. It is interesting that the *Who Cares About the Environment Report*, and the NSW Office of Environment and Heritage at least, talk of adapting to environmental issues such as climate change, climate chaos, greenhouse effect but do not propose more robust measures to mitigate the effects.

EE/EfS: Recent Initiatives

While the AEE (NSW), the Gould League of NSW and the AAEE fought and fight for EE, the EE cause was not really embraced by the mainstream environmental movement who were probably stretched fighting battles over pollution, bad land clearing and mining practices and so on. Additionally, EE/EfS did not want to be seen as politicised environmentalism, or the protest aspect of environmentalism had already been tarnished in a system with an inherent science base. Rightly or wrongly, some of the environmentalism was not seen as "reasonable or logical". Yet the "environmental" association could have been a double-edged sword throughout centre development with the bureaucrats and politicians wary of perceived political bias within the system. One relatively recent foray into EE politics is the Australian Education for Sustainability Alliance (AESA). It was established in 2012 with group

members being the AAEE, the Australian Conservation Foundation, Australasian Campuses Towards Sustainability, the Australian Education Union, Australian Council of State School Organisations, the Australian Youth Climate Coalition, Catholic Earthcare Australia, the Environment Institute Australia and New Zealand, the Independent Education Union, the National Tertiary Education Union, and, the National Union of Students. The Australian Education for Sustainability Alliance have moved the agenda forward with research benchmarking where sustainability is at within the Australian education system and providing resource support for teachers. Many of these politically active environmental and union groups see sustainability education as essential, and an alliance as a way forward to provide a powerful, safe, capacity building environment in times of austerity and a backlash against sustainability given the impact of public managerialism. With the change in Federal Government in 2013 to a decidedly, unapologetic climate change denying, pro-coal, leadership, AESA was a particularly insightful strategy.

In 2012 the Australian Conservation Foundation was contracted by the Australian Government Department of Education and Training on behalf of the AESA to "identify, verify, recommend and facilitate ways to improve the integration of EfS as a cross-curriculum priority across all subject areas under the Australian Curriculum" (Australian Education for Sustainability Alliance 2014, 9). The final report, *Education for Sustainability and the Australian Curriculum Project* found that while 92 percent of teachers thought that sustainability was important and should be integrated into the curriculum, over half (54%) of these were not teaching it to a standard that meets ACARA guidelines. The findings of the project included that EfS in active schools had been built on programs such as "Waterwatch" and experiences such as those of EECs and camps, and that the 25 environmental and zoo education centres provided professional learning in the form of workshops and EE/EfS learning resources (Australian Education for Sustainability Alliance 2014, 32 & 52). Additionally:

> *There is also the implication that outdoor experiences, whether in the school grounds or at an environmental education centre (EEC), need to be seen as "part of school learning"*
>
> (Skamp 2009, 73)

The NSW Chapter of the AAEE has taken up the challenge of supporting the Sustainably Schools NSW Program and the NSW Regional Sustainability Education Networks (Australian Association of Environmental Education 2019). In advancing communities of practice, AEE NSW has developed a framework with significant input from international best practice and extensive stakeholder consultation. *Make the Change: A Framework for Education and Engagement for Sustainability 2014-2021* provides a "unified, coordinated and collaborative" approach to sustainability education in NSW (Australain Association for Environmental Education 2015, 4). The project was in partnership with the NSW Office of Environment and Heritage (which no longer exists).

Australian Curriculum: Further Compromise

Nationally, the release of the *Donnelly and Wiltshire Review of the Australian Curriculum* took place in 2014 with significant consequences for the cross-curricular priorities (Hill and Dyment 2016)—specifically for this study, the sustainability priority, although the Aboriginal priority is also of significance given its close connection to sustainability. Following the review there was an ACARA proposal to reduce the amount of curriculum content—adding depth and reducing breadth. Additionally, and importantly for EE/EfS, the cross-curricular priorities and general capabilities were to be simplified (Mockler 2018). Added to this, the NSW Board of Studies Teaching Education Standards argued that the cross-curriculum perspectives and most of the general capabilities compromise subject discipline integrity: they do not approve of them as mandatory curriculum content and outcomes (Hughes 2018).

Notably, for EE/EfS, Donnelly and Wiltshire recommended a shift away from inquiry learning, significantly beneficial in EE/EfS, back to explicit instruction (Stevenson, Ferreira, and Emery 2016). Donnelly and Wiltshire have made the curricular transition difficult for teachers given the constant change in cross-curricular priorities. In addition to implementing this new curriculum and dealing with the conflicting directives and power play between state and federal governance, there were severe cutbacks to the resourcing of the Australian Curriculum transition. (Patty 2017).

NSW and Victoria were reluctant to change their curricula in line with the Australian Curriculum as they thought their curricula were already robust (Hughes 2018). By 2013, NSW was the only jurisdiction not in the process of implementing the Australian Curriculum. Board of Studies Teaching and Educational Standards NSW chose an "adopt and adapt" model whereby they adopted the new National Curriculum but adapted their existing curriculum with the National Curriculum if similar curricula already existed. These new syllabi have been rolled out from 2014-2018.

In 2018, the Berejiklian State Government announced a review of the curriculum which was hailed as heralding the biggest overhaul since 1989 (Hughes 2018). Findings are yet to be released but an interim report suggests the curriculum is too crowded and "lock-step" in nature, with the senior years overly focused on exam preparation. A "back to basics" approach was supported by the Premier (NSW Government: Education Standards Authority 2018; Raper 2019).

Chameleons: EECs Keeping Ahead of the Game

The importance of field work emanating from the EECs is clear, given it is stated as a major connection within the NSW Department of Education's salary and conditions documentation. Thus, the significance of EE/EfS being embedded within and across the curriculum. EECs are also recognised as the providers of support for the implementation of EE in schools.

> *"Environmental Education Centre" means a teaching and learning facility operated by the Department which students attend to participate in educational programs relevant to all primary and secondary key learning areas and/or to receive specific instruction in field work, and which provides support to schools in implementing environmental education.*
>
> (Industrial Relations Commission of New South Wales 2017)

The EEC community has a niche. With the downsizing of curriculum areas within Educational regions, the centres provide the only personnel able to offer support, advice and resources to schools in EE/EfS—and also offer professional development in other areas such as effective pedagogies that connect students to the real world.

> *We're left to our own devices in a way and even to represent environment/sustainability within the Department of Education. They look to us now. ... Then they got rid of positions of curriculum areas in regions… As I said, the whole aim was to put funding back in schools but it just left a massive gap in curriculum. And we find that now…. I mean, that's meant that environmental ed centres have picked up a lot of that, I must admit. We've got coordinated approaches to HSIE and the new geography syllabus. It would be the same with science.*
>
> VC

Additionally, some of the changes in curriculum have been advantageous with the new NSW geography syllabus fitting well with the outcomes of EE/EfS.

> *In terms of political policy, I get pretty disappointed with some of the politics that go on. But you need to look at things like… geography now, for me geography nearly is the embodiment of the environmental education policy because it has everything that good environmental education should have about developing future focused learners with kids that are willing to take action. And that's… I think that's part of the change that's happened. Now we finally have a syllabus that is being written for us, it feels… like it's not perfect, but it's there and it's far stronger being written in syllabus then it is in a separate policy, which people would never enforce religiously at all.*
>
> KB

There is a general shift back to families wanting their children to experience nature, and this has fed a resurgence in EEC visits.

> *There's been a real trend back to Scouts at the moment. And so getting kids outdoors, getting kids experiencing walking on uneven surfaces. So there's a lot of developmental skills I think as well that we provide. Connecting kids with the environment. Providing those opportunities to connect. I think all those things are really, really important… that we do.*
>
> VC

One of the decisions agreed on in 2016 was for the centres to contribute to a fund to pay for one of them to be their EZEC representative. To this end, David Smith from Gibberagong EEC has been recruited one day per week to work on EZEC representation at all levels. The NSW Department of Education, seeing the value, has contributed some funding to assist in this practice. One of the initiatives is to form strategic partnerships to drive state-wide student action programs—aligning with academic partners for action research to develop much needed evidence of practice. With all the new technologies, the time is right to start developing smart ways of assessing student learning rather than "numbers through the gate" and evaluative feedback of experience (which has served its purpose). Robust data on

learning outcomes are now possible using various digital tools—programs that enable the assessment of digital work, for example.

One of the premises of this study is that the FSC/EEC indeed developed and conducted EE as opposed to outdoor education, conservation education, and nature study. Critical was the inclusion of the distinctive EE qualities "concerned with values, attitudes and social action in resolving environmental problems" (Greenall 1987, 12). This, however, would be disregarding the complexity of the situation. There would have been a mixture of all of these types of education across time and place, given the circumstances. I contend that most of the FSC/EECs do primarily set out to change people's attitudes and behaviours, to motivate action for the environment, but due to occasional and sometimes frequent necessity, they have been subject to incorporation within the existing hegemony of the epistemological paradigm of traditional education for survival. Over time, our FSC/EEC educators have become the ultimate change agents, able to disguise and survive in changing, prevailing circumstances.

The understanding of what enables people to take action about environmental/sustainability problems has become more sophisticated over the years due to research developments. It is thought that people change their behaviour when:

1. the environmental problems are understood,
2. the complicated interaction of social and political causes of environmental problems are understood, and
3. the future is uncertain and thus learning needs to be fluid and open-ended, involving "reflective social learning".

(Scott and S. Gough, 2003; Scott and Vale 2008 cited in NSW Department of Education and Training 2009, 27)

One of the old guard sums up EECs succinctly and knowingly:

> *I think EECs are at the centre of traditional education systems' attempt at environmental education. They're the place where students actually do environmental education and where teachers can be in-serviced on what sustainability means. You've got to have somewhere outside the classroom where fieldwork in environmental education can take place. As things change EECs can change to accommodate and include new environmental concepts. In saying that we've tried to infuse environmental education into other curriculum areas with varying success but certainly not with the rigor that well, the early teachers and myself in the centres wanted. Not to the point of bias but just to be even handed because the powers to be, the modern paradigm, is leaning so far to the right anybody that speaks anything near the middle is a left-wing radical now. It's very difficult to push an environmental bent within education without being seen as some sort of radical, that you're not, you're actually teaching very conservative views of the planet. You say, "Let's stop and think about what we're doing." You're not actually saying, "Get out there and chop everything down, dig it up and sell it for what you want" but that's what everybody's doing. So if you go against it you're some sort of radical and a Luddite and holding back the future.*
>
> AA

Curriculum that will serve our young into a global, sustainable future needs to support the facilitation of learning for active citizenship at a local, state/national and global level (Bezzina, Starratt and Burford 2009). In addition to the moral, value-laden aspect of this endeavour, system-wide change, amongst other things, will need "a clear and consistently espoused moral purpose which forms the link between systems thinking and sustainability" (Fullan and Baber cited in Bezzina, Starratt, and Burford 2009, 551). While the original national curriculum, and thus the NSW state curriculum, was informed by the Curriculum Framework, it has become something of a political issue, susceptible to the whim of changing governments whose ideologies leave teachers unsure and jaded. This does not assist in moving the agenda forward. NSW's EEC chameleons, able to fit in with prevailing circumstances without being sacrificed thus far, provide support to teachers in navigating a curriculum, subject area and teaching methodologies that classroom teachers themselves are ill-equipped to provide.

Conclusion

Evident in this chronology of function and change within the EECs is the power of the inertia that extreme conservatism has brought to the education system in NSW, indeed, to all of our bureaucracies. It is evident that EE seems to be a small player in a very large power play.

Indeed, it is seemingly insignificant. This insignificance was to its advantage in the early days where an *ad hoc* and opportunistic spread of FSCs was possible. There were advantages in the freedoms afforded (Renshaw and Tooth 2018). Throughout this history, public managerialism, neoliberal or neoconservative governance, has gripped the global world and is squeezing tight. The tentacles of neoliberalism have enveloped the centres, as they have the education system in general, and made terrain difficult to navigate. The centres, however, are still finding ways of progressing in positive and innovative ways that can assist in advancing and leading EE, EfS and education generally. In times where politics seems to be put before the student, the centres have placed EE/EfS and earth citizenry, and thus the wellbeing of all students, first and foremost.

CHAPTER 8: ROUND PEG/SQUARE HOLE

Until now this narrative has chronicled the establishment and development of the field studies centres/environmental education centres (FSC/EEC) within the NSW Department of Education, nested within developments on an international, national and state level. Within these chapters is a chronological description of some of the contributions of these centres within their communities, within curriculum and pedagogy, and more broadly within formal schooling. Furthermore, there is a glimpse of the political happenings within and about these centres and Environmental Education/ Education for Sustainability (EE/EfS), the enactment of change, and the inhibiting and enabling factors for EE/EfS and these centres within and outside the bureaucratic structure of the NSW Department of Education.

Centre teachers-in-charge/principals and staff were some of the foot soldiers of the change at a local level. There was significant support and contribution from local communities, EE associations and at times personnel, bureaucrats and politicians within or associated with the NSW Department of Education. Support from other state and national departments was significant for EE/EfS and the centres, particularly when the NSW Department of Education generally needed to be compelled to support the centres—apparently there was generally a fair degree of coercion. Yet, in the end, even in times of economic efficiency and departmental competition, the NSW Department of Education supports the work the centres are doing, in the face of the withdrawal of prior support from other departments. The Federal Department of Education ceased supporting EE/EfS decades ago, and while most support came from the national Environment Department, that has also ceased, as has support from the state Environment Department. Juxtaposed with the local/ground level support is the top-down effect of the international UNESCO/IUCN movement which has been substantial.

While there were many other foot soldiers over the years assisting in the shift to an EE/EfS agenda, at times the FSC/EECs have been some of the only environmental educators supporting the move given the initial slow change in development followed by repeated waxing and waning of support within a dominant economic paradigm. There is an argument that EE/EfS within the centres is technocratic, and to some extent, and by necessity at times, there is truth to this claim. However, there is evidence of action,

innovation and the development of earth citizenry—connected, enquiry-based, problem solving, experiential EE/EfS pedagogies—being developed and disseminated by these centres.

EE/EfS has advanced around the world in many varied and diverse forms. This is the history of the development of centres and EE/EfS within a large and complex bureaucracy, the NSW Department of Education, over a period of significant economic change. It illustrates the importance of place, community, political involvement and time in the development of an individually unique range of resources contributing to a healthy, diverse, collaborative and resilient whole. Within this narrative are glimpses of how EECs contributed to evolving EE/EfS within their communities and within curriculum and pedagogy. The enduring themes and tensions narrated throughout this history shed light on some broader contributions to curriculum and pedagogy in formal schooling, as well as how the centres and individuals within these centres managed to maintain their existence within a bureaucratic structure. This final chapter teases out some of the major themes of this study.

Pedagogy and Curriculum

Centres have made an ongoing contribution to our understanding of curriculum and pedagogy. Scattered throughout the interview data are anecdotes of the effect of EE on students—improvements in both their disposition to and engagement in the learning, an element in improving curriculum learning outcomes (NSW Department of Education and Training Professional Learning and Leadership Development Directorate 2008). Furthermore, there are indications of the long-term effect of centre learning experience on students.

For example:

> *He was up at National Parks and came down and said to me he was doing a PhD into the broad-headed snake, a rare and endangered snake found in the sandstone country… and I said, "I can't tell you anything about the broad-headed snake" and he said, "No, I'm not here to ask you about that." He said, "I'm here to tell you that you're the reason I'm doing it."*
>
> AA

These stories within the context of their historical time, place and space do not, on their own, give the generalisability and reliability necessary to satisfy methodological research rigour. Indeed, one of the issues prominent in the data is the difficulty in providing evidence when there is such a complexity of causes and effects that are difficult to substantiate.

> *But in the longer term it's very hard to tell whether this actually bought about a new world of environmentally literate people because that is really what we were aiming to do, and these days it would be more those that carry out sustainable practices throughout their life. Did this actually happen? I'm not really sure…. So, I suppose from a cost benefit analysis, if I was going to take that hard economic line I would, you know, question the value; but deep in all our minds, our psyches, we all think this has been worthwhile.*
>
> FA

However, together these accumulated stories form a formidable body of evidence of the positive effect student-centred, hands on, well taught EE within an engaging environment can have on positive student outcomes, and the elements that contribute to this.

Over the history of the FSCs/EECs, teacher and student pre and post-evaluations have been conducted on a regular basis with very positive outcomes. They show that learning had occurred and that the experience was positive. Parents have also been surveyed—garnering positive feedback. In the past, teachers-in-charge have been requested to develop performance indicators for accountability purposes. This has been a difficult ask. A thorough analysis of knowledge retained has been close to impossible given pre and post testing constraints. Post testing would require:

- teachers with specific aims to be measured—not necessarily the case with primary school,
- the time to go to schools and conduct the test which would have meant taking on fewer students in the face of numbers being an important benchmark for the Department and the great need for many students to have the experience with relatively few centres per student population,
- teacher cooperation, yet they usually moved on from the fieldwork quickly; gaining teacher cooperation for assessment was difficult, and
- distinguishing what was learnt from the centre experience from what was learnt elsewhere. Too many variables.

While the centres have been proactive and successful in developing accountability, the time taken is considerable, and this contributes to the strain that is placed on teachers within the system. Hopefully automation of assessment technology will help ease the burden of data collection, collation and analysis. As discussed in the previous chapter, centres are now proactively studying ways and means of utilising new technologies in advancing research into student outcomes from their interaction with EECs.

One emergent theme within the data was the positive effect of learning in a hands-on experiential way for students who otherwise are stereotyped as ineffective learners and/or disruptive to the learning experience. The extracts cited below illustrate this phenomenon: the positive effect of learning with animals, for example, has been observed consistently:

> *And certainly, animals do that for all types of learners and all backgrounds. I'm very blessed and lucky to have live animals as a learning resource and we have kids meet them up close. Kids can feel them, smell them—multisensory learning—that's incredible…. And one of the best roles we play is we often rebadge naughty kids in a way which is positive…. So, there's a correlation between… naughty kids and animals – there's a sweet spot there, and even naughty kids, and I know this from doing work with Juvenile Justice and doing work with DOCS, naughtier kids and reptiles, there is a direct link between those two factors which come into play. And it's a lovely opportunity for those kids, in front of their teachers, to be seen as leaders and experts in a way that really does rebadge them… I think we play lots of roles, and lots of outcomes, some of them are the hard curriculum ones, but I think there's something around values and around civics—that we really do switch kids' lights on. And we talk about that nature switch, that we can get kids in a different environment to show their unique skills and their unique knowledge in a way that can often surprise themselves and surprise their teachers and surprise their peers as well.*
>
> VA

Furthermore, the positive effect of centre learning experiences for students with learning difficulties such as attention deficit hyperactivity disorder (ADHD) was frequently observed:

> *Because teachers will say it to you. The kid that's got ADHD, the kid that can't sit still, the kid that's naughty all the time at school, is often the kid that's just shining and having the best day ever when they're on an excursion with you.*
>
> TA

Moreover, the postive learning experiences for students with physical and emotional disabilities were substantial:

> *I don't know what it is but kids that had behavioural difficulties, concentration difficulties, attention difficulties, often responded, very surprisingly to their classroom teachers not to us, in the outside environment. And the other thing, I once had a group of kids, well not once, I had a school that visited me often at Longneck who were from a special school… often for those kids it was the first time they had walked on ground which was not an even pavement or a carpeted corridor. And the excitement, and the joy, the wow experience of those things were very, very… they've stuck with me, obviously. Bad kids turn good in bush.*
>
> KA

The Lucas Framework

The EE framework developed by Lucas (1972), "in", "about" and "for" the environment, had a strong influence in EECs, as it did in EE more broadly. The "in" the environment was covered well at FSC and in many instances this element would have been unique to FSCs. There were many instances of students who had never encountered the natural environment before who were introduced to, and in many cases lost a fear of, the unknown—misconceptions were shattered.

> *We took students into rainforest environments, and of course many of them were paranoid about leeches. So we had to kind of overcome that even though maybe a few of them were leeched in time but to say that they weren't going to hurt you, you might be a little bit itchy for a day or two… We had students at Wambangalang that used to come from Newtown Public in Sydney. These students were from a broad range of culturally and linguistically diverse communities, as we call them these days, that had had no experience other than city life or life overseas. And to take them into the vastness of our rural areas, and for them to experience being in the environment, in a different environment, was quite an amazing experience for them. So the experiential side is a critical education function.*
>
> ND

Furthermore, students who had little experience in the important art of socialising experienced extended periods of living, working and playing with others when attending residential FSCs.

> *So these were School of the Air students that were being taught remotely so when they came to Wambangalang I remember one of the first things they had to do is to learn how to form a line. They'd never formed a line before and also to learn to live with other students in a dorm style accommodation.*
>
> ND

The "about" element of Lucas' framework was the component that was easiest for "formal education" to incorporate into their practice, but also a necessity, and one of the hooks for getting education authorities on board with FSCs. Learning about the environment was already embedded within the science and geography curriculum. The changes made

through the Wyndham Report for compulsory schooling which required education to be made accessible to all rather than a few, made learning in FSCs with experienced, skilled pedagogues, in environments that encouraged enquiry, enticing—it tapped into curiosity.

> *So for example, the science curriculum and the geography curriculum in secondary school, always have a requirement for fieldwork, particularly in… year 11 and 12. But even in junior secondary and also of course in primary school there's always been some part of a teaching unit which suggests some form of learning about the environment. So primary schools have had rainforest units, units about people and places, a whole range of different units that could be taught in environmental education centres… If we ran down the marketing line of environment ed many schools could opt out. But if we said we're here to do a particular HSIE activity or a particular English activity or environmental math or something like that… science and technology… that is where we had a lot more traction, that's where we built the numbers.*
>
> FA

The centres tailored their curricula to the visiting teachers' requests as it was critical that learning was linked to the syllabi. Educators with strong environmental bents staffed centres; they were aware that they had to impact many diverse student and teacher sociological lens and have empathy with and understanding of the worldviews and backgrounds of their clientele.

> *You know we also had the view that we had strong, if you like, environmental philosophies and ideals whereas we have to understand that our "customers" (those students and teachers that came) didn't have those same ideals, so we had to kind of claw-back, you know. The reality that… these people, particularly going back now 40 years ago, didn't have the environmental knowledge and the skill set to be able to understand. So just to basically give them some experiences, a bit of knowledge behind that, even just a good time somewhere else, you know, was really, really important.*
>
> FA

Learning was often about fieldwork data collection. For high schools the fieldwork associated with the curriculum justified the trip. With the cross-curricular nature of primary school, it was relatively easy to broaden out into the environment with the inclusion of values and ethics in the History, Society and its Environment (HSIE) key learning area (KLA). There was, and is, great success across most KLAs—across the whole K-12 spectrum. For example, Syd Smith called Foott into the office when he was the coordinator of the Higher School Certificate (HSC) Geography Program to ask him questions about what he was doing to get such good results in the HSC geography fieldwork. Foott was teaching with a program he had developed which studied a river from its source to delta—"Peats Bight Creek: A Study of a River's Ecosystem" (Foott

1983). This kind of recognition assisted in raising the profile of the work centres were doing to support the HSC.

Education "for" the environment has always been the most difficult element to enact within formal education given its value laden, affective character which often goes against the dominant hegemony—generally unconsciously so. Advocating "for" the environment requires students to critique established practices in order to understand the studied phenomenon. The expected result is citizens who understand and want change and are empowered to assist in making the change (Apple 2000).

Initially, however, teaching the concepts of how the natural environment works can support education "for" the environment and some centres embraced teaching the underlying concepts relating to it where they could.

> *I think there are just those basic concepts of solar energy, relationships, recycling, diversity, adaptation, change, etc. to understand and certainly with lots of interaction with the natural world.*
>
> AA

Centres spent a lot of time mapping their activities to all the curricula in order to attract visitation from schools. The role of the teaching staff at the centres was seen to be conducting fieldwork but centre educators broadened this to include EE and to support classrooms. EE eventually became the dominant factor with fieldwork still playing a crucial role, for student education and the survival of the centres.

Strom's memoirs in 1987 state that he found that the methodology used in the conventional teaching of history and geography destroys any relevance subjects have to student's lives, yet history and geography spell out real life situations and are fundamental to EE programs (Strom 1987). Harris thought along the same lines and had been advocating for change. In an edition of *New Horizons* in 1943, in relation to the 1941 Social Studies curriculum, Harris had asked, "Are we really teaching history when we tell them pleasant little stories about noble men and leave them to figure out why such noble creatures have left the world in such a mess?" She talks of exploitation and colonialism and goes on to say,

> *It seems fairly clear that with such an unreal attitude the details of the social studies will hardly be such as will give the child that clear picture of his environment, past and present, essential to his development as a good citizen.*
>
> (Harris quoted in Webb 1998, 72)

Strom stressed environmental encounters and the welfare of the environment (Strom 1987) as did Harris (Webb 1998). These encounters and enactments, that connection, took and takes place at EECs.

> *The most important thing is to get children out into nature so they touch the earth, so they fall in love with the planet they live on and they're not scared of everything that wriggles and moves. Certainly be wary and respectful of it but don't be frightened of it… just get them out there touching the dirt and smelling the leaves, out doing fieldwork.*
>
> AA

Learning was never didactic. It was experiential. Teaching across the large age range from K-12 required a good understanding of educational psychology in order to ensure age appropriateness. Centres challenged students, there were high expectations but conversely audiences for riskier activities such as a difficult walk, would be carefully targeted.

Round Peg in a Square Hole/Comradery and Larrikinism

With centres and their personnel experiencing the "round peg/square hole"[116] syndrome, comradery and a healthy dose of Australian larrikinism assisted in keeping centre personnel sane and connected. Strong bonds were formed between centre educators. These bonds are still formed to this day but back when there were only six or seven educators, in an environment devoid of EE/EfS, comradeship and professional bonds were very solid and strong—values and personality alignments were more "in sync". In saying that, there were differences in environmental ethos. One has to remember these educators started in the 1970s where "hippydom" was rife – whilst this may have been an easy fit for centres close to some urban areas, or areas with a penchant for alternative lifestyles, this image could place a teacher-in-charge as even more of an "outsider" (EE equals hippy) in some communities. Some teachers-in-charge at rural centres embraced

[116] A round peg evokes a circle—the cycles of life. The eternal significance of the cycle seems appropriate for a group that has demonstrated such ecological commitment.

their alternativeness and were gradually accepted within their given community due to their commitment, good work, and steady familiarity with the locals. Others decided on an approach that fitted more their personality and environmental ethos and, being more conservative, blended into the rural surrounds and culture. They made gradual changes once they had the respect of the locals.

> *Where we taught which is out in Western New South Wales you wouldn't last long in society if you took that more deep ecological line.*
>
> FA

Throughout the history of EECs, at times there have been significant differences in personality, worldviews, capacity, strengths, political stances and so on, yet generally foremost was the desire to push the envelope of EE, through excellent education, into the mainstream for the preservation of the environment. There is evidence of an altruistic focus on shifting society toward an ecocentric/sustainable paradigm where we are conscious and act knowingly, accordingly and respectfully of humans' place in the web of life and living as lightly on the earth as possible. Illustrative of their altruistic nature is their commitment to keep EE/EfS on the agenda and to maximise its teaching. An example of Environmental and Zoo Education Centre (EZEC) Network altruism is their attempt to pay for a .2 casual for the one principal centres in order to increase capacity.

One difference in the early days of the centres was the ethic of testing one's mettle in the natural environment which had developed early in Australia's history and reached a crescendo with the bushwalking movement. It was very evident in early FSC history but now has fully dissipated. At times throughout the data, informants implied or explicitly stated that they found testing of one's mettle and the raw, original environmental ethic was absent from some of the newer breed of educators.

One story told from various viewpoints was the story of one of the conferences held at Bournda FSC. Before we begin, one needs to know that practical jokes were part of the earlier educators' comradeship. On evening arrival at the Bournda FSC, centre educators were given directions to their dining destination, only to find Miller cooking up a storm of baked beans in a billy over an open fire. By this stage centre staff were accustomed to the finer things in life and while some were very happy with the sustenance and ambiance of the evening, some were a touch peeved. Another event over the course of the conference was a strenuous walk which really tested the crew's grit. While most found

the route arduous, some, including Miller, the hosting teacher-in-charge, had made their way through a short cut and had been kicking back, enjoying the delights of the bush, waiting for the others to emerge from their experience—which most seemed to have found torturous. Tit for tat occurred a few years later when Clements up at Dorroughby paid back with a beautifully executed prank, already referred to (p. 158).

> *The inner sanctum appeared to hold what you might call "deep green" perspectives and frowned somewhat on any weakening of that attitude. They also gave "outsiders" in the FSC/EEC network a feeling that you needed to be a tough "bushie" and be able to really rough it to have much to offer and gain acceptance.*
>
> PA

One of the philosophical differences between staff was their view of the environment—some placing more value on the urban environment's importance/value than others. At one stage a video was produced for sensory awareness with the music for the natural environment scenes being Vivaldi's "Four Seasons" while a heavy jazz number called "The City" was used for the urban environment scenes. There were objections to the heaviness of the urban music by one of the teachers-in-charge who advocated for the importance of the urban environment. The point was made that the music was the composer's interpretation and that the natural environment music was clearly better. The two teachers-in-charge were ideological, philosophical sparring partners—in a larrikin sense.

Enduring Tensions and Themes

EEC's principals, teachers and administration staff work in unique, isolated environments, separated from the school mainstream, working to their own brief, yet connected by the departmental policies governing education. They share a connection and they also share professional development, projects and the collaborative circumstances that their distinctive organisational structure brings. Not to be underestimated is the effect of all those teachers educated by people such as Strom, Harris and Webb, teachers dispersed across the state and within the Department. The importance of being connected to the environment, and understanding the environment and sustainability in order to be empowered to work towards it, or teach it, is an important element within this narrative.

EE/EfS involves educators in a wide variety of organisations and interest groups: other NSW Department of Education personnel; other government departmental environmental/sustainability- focused staff (when they exist); the state and federal environment departments in particular; non- profit environmental organisations, the Australian Association for Environmental Education (AAEE) in particular; Council education officers; special interest groups (e.g. plant or bird enthusiasts); and advocacy groups. All of these make up the eclectic group that constitute the movement that supports the environment and thus EE/EfS. EECs personnel have a specialised position within this broader environmental/sustainability group. They have knowledge and skills within the education discipline, and EE/EfS and are part of the education system—difficult terrain for anyone not within this specific bureaucratic structure.

Teacher education training is one of the biggest impediments to the uptake of environmental and sustainability practices. How do training teachers get the confidence to utilise their environment, natural or otherwise, as a teaching backdrop for fieldwork and experiential learning, connecting their students to their environment, if they are not taught? There were publicity campaigns through the Federation and Departmental publications, yet it was still primarily word-of-mouth and return visits that provided centre visitation. It came down to individual teacher priorities. More centre in-servicing may be the answer to making teachers confident teaching in their environment.

In the early days, it was common practice for centres to take on teacher practicum students. As discussed previously in this history, Maddock, an academic within the School of Education at the University of Newcastle and a well-known environmental educator, utilised the Awabakal and Shortland centres. Maddock had a love of egrets and was one of the main driving forces in having the Shortland Wetlands established. One of his academic papers was on utilising wetlands in teacher education (Maddock 1986). Centres could only accommodate a small number of practicum students, so Maddock utilised Rumbalara in addition to Awabakal and Shortland for regular student visits and practicums.

> *So, strong educational outcomes but also strong linkages with those teaching and those wanting to teach into the future.*

ND

Wambangalang took teacher students for practicum from Mitchell College of Advanced Education, now Charles Sturt University. Educators were paid a small stipend to be the teachers in charge of managing these students. There were strong links between Longneck Lagoon EEC and the University of Western Sydney with Dufty lecturing in Environmental Fieldwork. Many students gained fieldwork experience through their teacher practicum at Longneck Lagoon. Stuart DeLandre at the Illawarra FSC /EEC had strong ties with the University of Wollongong. He wrote and taught two courses as electives for fourth year Bachelor of Education candidates for six or seven years. Illawarra FSC/EEC also hosted preservice teachers in the 1990s and early 2000s.

It became progressively harder and therefore rarer to have university students, and in particular teaching students, visit centres and gain experience. There was a distinct lack of teacher educators educating in the field. Teachers generally will not take students out of the classroom to explore and investigate the natural environment unless they have experienced it within their own teacher education and have learnt its value. Note that there are teachers, principals and schools throughout NSW who are teaching EE/EfS efficiently and effectively—most admirably. But many schools are not.

Centre educators have at times resorted to going to the schools of education within the universities to take the field studies experience to the students. At one stage Gibberagong was visiting the University of Technology Sydney at Lindfield because internal policies stopped pre-service teaching students from visiting. Plants were taken along so that students could use their senses of sight, smell, touch and taste to experience them.

Centre teachers were actively providing professional development in how to teach EE to visiting teachers as they were teaching their students—role modelling.

> *We didn't see ourselves as being the be-all and end-all; we saw ourselves as being conduits for a broader movement of environmental education teachers.*
>
> FA

They encouraged teachers to become involved, guided them through the process, and supported them in learning so that they gained the confidence to teach environmental education.

> *I was hoping teachers would go back and use their playground for learning experiences.*
>
> AA

There were many professional learning courses developed and run by centres. It was a big thing in the 1980s and1990s and was supported by funding. This raised the profile of the centres for those who could attend, yet attendance was small in comparison with the size of the NSW school system. The "teach the teacher" practice was a professional development method at the time. This has been proven to be ineffective as the teachers who experience the professional development do not have the skills, resources nor environment to pass on the learning. Without other teachers experiencing it for themselves, the schools were often left with one "converted" teacher supporting the cause.

Centres used a degree of political leverage to advance EE/EfS and many FSC/EEC principals were involved in organisations working for the purposes of environmental efficiency. You gain an idea of the political interconnectedness through reading this history—from EE advocates connecting to politicians, or bureaucrats, to not-so-serendipitous occurrences at election time through strong political advocacy. It is diverse and multidimensional—networked in a multitude of ways. It may be an assumption, but it seems that there were once closer connections to the machinations of power. The intransigence of bureaucracy seems greater or has economic rationalism made things much tighter and less equitable? This idea needs further unpacking.[117] Illustrated throughout this narrative is the influence of strong community action, as is the effect of the many global initiatives on instigating pressure for governments to change policy—both a top-down and bottom up approach. The manifold challenges in progressing EE/EfS are also evident within the influence of environmental advocacy groups. Examples are provided throughout this study, but some examples not previously mentioned are the Environmental and Zoo Education Centre (EZEC) Network contending for involvement in the curriculum in the NSW State Government's

[117] The inequity in cost per student EEC visit in the age of economic rationalism is another subject that needs unpacking and has been given little space in this study.

Consultation on Defining Mandatory Outcomes in the K-12 Curriculum (2004) report, and the AAEE seeking input into the national curriculum.

The growth of EE/EfS has been hampered often by bureaucracy and politicking. This political power play of bureaucracy is evident in EE/EfS policy formation, with contestation from an international, to national, to state, to EEC level (N. Gough 1987, A. Gough 1997, 1999, 2013a,b; Stevenson 2013) and between education and environment cohorts. One significant factor is the power play between the stronghold of traditional curriculum disciplines within education with EE/EfS decidedly dismissed or encompassed in ineffective ways, ensuring it does not disturb the entrenched. It could be surmised that these factors may have been involved in the Federal Department of Education lack of interest in supporting EE/EfS from the 1980s, with the Environment portfolios, both national and state, the main supports in development.

There is the intransigence of the education system in effecting change. The broader social changes of the mid twentieth century did little to change the fundamental nature of schools and teaching within those schools (Hargreaves 2003). Rhetoric outstripped reality. Teacher-centred learning remained firmly in favour, using the age old techniques of "question and answer" in classrooms made up of children categorised by age and assessed by the same old standard methods. There has been a historical expectation that education can provide social redemption (Popkewitz 1986). Yet educational professionals and bureaucrats seemingly look inward to the custom and certainty of their expertise and routine rather than focusing on being at the service of students, families and communities, as they ought to be (Hargreaves 2003). What is needed are ideas for solutions to practical, technical and social problems such as water pollution and cropland erosion. We need ingenuity (Homer-Dixon quoted in Hargreaves 2003, 21). Indeed, Greenall's 1981 Australian Association for Research in Education paper introduction was apt in quoting Machiavelli, (1513).

> *"There is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things"*
>
> (Greenall 1981a, 48)

Part of the political is the waxing and waning of political favour which is disconcerting given the pressing need for a permanent change in behaviour and attitude toward the environment and sustainability. Many of the teachers-in-charge/principals have

experienced and understand this variability and are very adept at managing the situations they are dealt. One principal pointed out wisely that change and evolution are inevitable, part of the process, part of the ebb and flow.

> *And since the centres are still there, are still operating, and environmental education is going through different incarnations because the audience is changing, the children have a different starting point, the parents of those children have a different starting point of belief and knowledge and so on. I think fluctuation is a normal healthy part of society, ebbing, flowing, changing, adapting, reinventing.*
>
> KA

Yet much of the change that is experienced by the centres is change due to political qualms and lobby group power—the proclivities of those in power. One trend noticed by long-term centre educators was the Department's routine of reinventing the educational wheel approximately every five years, usually at the whim of some politician, or an academic having influenced a politician. Then there was the effect of pressure groups adding extra to the curricula. There was the teaching of subject areas at the expense of important others, and teachers taking the easy way out by teaching the less difficult areas rather than the sciences—which they possibly did not totally understand.

> *And politics comes into education all the time. In environmental education politics is even more important. You've got to keep it on the political agenda… Well, as we know, we've got more or less environment education and fieldwork within the curriculum depending on who was pushing the politicians more.*
>
> AA

Some EEC educators were a little more sceptical about the changing times, not holding their breath waiting for the pendulum to swing back the other way. At times EE/EfD is in vogue and at other times it is seen as a dangerous area to teach so field studies are reverted to as a means to keep EE/EfS alive, rendering EE/EfS links within the curriculum and the cross-curriculum priorities essential, as is the policy. Accountability would be an excellent next step. Additionally, the stand-alone subjects such as the senior Earth and Environmental Science subject are necessary as prototypes for the field, given the lack of understanding within a large majority of the teaching fraternity.

Yet another example of the "swings and roundabouts" the centres and all teachers deal with is the change in curriculum. The last iteration of the geography curriculum, for example, was disconnected from fieldwork but in doing so lost popularity with the students. The current geography curriculum includes hands-on work and is close to an EE

syllabus, which EEC principals find expansive enough. This was a pivotal change for the EECs in 2017.

Action Orientation

Consistent with the action-oriented curriculum and pedagogy is an overall action orientation to FSC/EEC work. Not unlike Strom, the old guard of EEC principals, and some of the not so old guard, had a defining trait in "action"—"doing." It is integral to how they shifted the agenda for EE/EfS and their centres. It is integral to their teaching. They get things done, as the following quote portrays.

> *I think I probably sought forgiveness rather [than] sought permission in the early years because I wasn't too au fait about how the Department worked.*
>
> HA

Given that the NSW Department of Education, as with most bureaucracies, moves slowly and is often wary of authority and change, those who move for change can be perceived as dangerous.

> *I thought about the probability of movers-and-shakers in the environment movement in general ever "getting anywhere", "in positions of power", within the Department of Education & Training, as being rather minimal, as such people are often regarded as "slightly dangerous" within bureaucracies because they might want to change things too much!*
>
> (McDonald, email December 12, 2017)

The FSCs/EECs' action orientation ethos has had a significant impact in assisting the shift toward a more ecologically sustainable society. In the scheme of things, EECs have impacted on a global scale in an indirect, implicit way. For instance, the early teachers-in-charge/principals were the instigators of the first *EE Curriculum Statement* and they had input into the *EE Policy*. They were heavily involved in the dissemination and implementation of both of these documents. They also input into the Earth Citizen document and thus the National Curriculum Sustainability Framework.

The teachers-in-charge/principals were sought after to contribute to inquiries and advise on matters such as forestry and reserves, and to assist with specialised documentation such as the rainforest material instigated by the Wran Government. EEC educators have

also been instrumental in curriculum change. For example, Foott was involved in the committee that developed the Stage 6 Earth and Environmental Science syllabus (2002) for NSW.[118] A search of centre teachers-in-charge/principals in Trove, the Australian online library database, highlights the many resources produced by centre staff, only a few of which have been outlined in this study. For example, in 1990, Koettig and colleagues produced a resource titled *Greening your School* which was launched simultaneously with the greening school policy (Koettig et al. 1990). The centres/zoos are very important in keeping EE/EfS on the formal education agenda and thus have the potential to impact on a large scale.

Centres have overall always been enormously popular venues. One principal estimated their centre had taught one hundred thousand students over a 13-year period. Add to this several thousand teachers and other committee and associated people, and then multiply that by many years and twenty-three centres and two zoos and there is a multiplier effect not to be denied. Zoos teach up to approximately 150,000 school students annually[119] and one interviewee estimated 10,000 students visited each EEC annually, with some exceeding this number by several thousand. Parents were often involved in the learning and teachers-in-charge/principals often gave talks at community events in addition to educating politicians—in fact, anyone in their path.

> *And a lot of my activism has come from really living out the education "for" the environment. You know, I think of dealing with politicians. Educating them as much as lobbying them. That's happened in my philosophy.*
>
> HA

Centre staff were/are always under the spotlight. Their lessons are open to observation and team teaching—something which is encouraged as best practice professional development within teaching. They teach lessons repeatedly and thus have greater opportunity to hone their craft. They have, by necessity, an excellent holistic understanding of the whole curriculum and teach within and across it. Many are across a multitude of sites and some educators have stressed the importance of a background in

[118] Note that it is suspected that these examples are the tip of the iceberg.

[119] While the zoos get a shorter time with students they have been working on greater relationships with their students through, for example, their Zoomobile and Project Insitu, a longer-term program based on penguins.

environmental science/management as well as a strong commitment and motivation to teach EE/EfS.

Many of the principals were consistently determined about having a positive memorable impact on their students every day—particularly when there was only a window of four hours to have an influence on long term outcomes.[120] An affective experience was often seen as essential.

> *I wanted an emotional outcome because I thought if they had that then the learning would follow so my outcome for the students was first enjoyment, then the learning…. "I don't care how you're feeling or how I'm feeling; this is the only day the students get in the bush so make sure they enjoy themselves."*
>
> AA

The relationships between FSC/EEC teachers and their students, the valuing and understanding of the starting point of the visiting students, was seen as essential.

> *You've got those kids for a small window of time. They've got to be the most important people in your mind. So that's where that relationship with teachers, the communication beforehand to find out about them, the needs of the kids, the teachers' needs, special backgrounds of the kids that we might need to know to ensure we deliver…. And then in that first 10-15 minutes of intro just working out where the kids have come from in terms of their prior learning, language that they might have that you can optimise or whether this is just a launchpad for the unit of work. And then that relationship with the kids. Get to know their names, talk to them by name. Slow things down. Make it a quality experience for the kids. It works, Annie…. It's just simple things like talking to the children by name, being calm, getting them in that moment, and putting yourself second. Just enjoying the kids being excited.*
>
> RA

The positive experience was seen as what would be remembered by students in years to come, an experience that may just turn them towards an environmental ethos.

> *The main thing I want to see any kid walk away with at the end of any day is… having the most positive experience they can possibly have out in nature, or based on any program. Because those really positive feelings at the end… you know in six months' time that's what they're going to remember. And that's really where you begin to have that influence on how kids value being outdoors, or how kids value being out in nature and exploring and investigating and enquiring about what's going on around them.*
>
> KB

[120] Often, evaluative pre and post data has been rigorously obtained over the years. There are generally consistent results yet long-term outcomes have proved elusive to measure to this point.

More recently, there has been an observed resurgence in centre visits. While centres have overall always had huge visitation,[121] many are now pushing capacity. The disconnect from nature has parents keen on their children having experiences in nature. One observation within the data was that teachers and students no longer build endurance on long walks. They opt for a few kilometres and thus miss an opportunity to build resilience, and the sense of accomplishment that comes from achieving something perceived as difficult. One principal noted that six-kilometre walks are now one or two kilometre walks. Field trips are shorter and shorter. Gentle slopes are preferred to rigorous hills. Technology is given as one of the reasons for the decline. Some of the younger teachers had never been out in the bush. Camping has given way to holidays in resorts in many middle class families, the class from which many teachers are drawn—there is less basic camping experience. There were students who had never seen a wood fire or used a tea towel, who grew to love the experience in a few days. Comments shifted from "You shouldn't make people do this" to, "I think everyone should have an experience like this. No one should be allowed to go through life without having this experience" (AA).

There is a huge complexity of issues at play. Yet this is part of the disconnect from nature that needs to be addressed.

> *You wonder if the people in high-rise will have enough contact with the natural world to actually care about the natural environment. That's the problem.*
>
> AA

With the huge growth in population since Webb's analysis in 1989, it can be extrapolated, and it is evident in the data, that the number of centres has not grown in line with the growth of the population, and thus there is even more pressure on the centres.[122] The Blue Mountains was mentioned by some interviewees as an ideal location for a new centre given its ecosystems and proximity to the largest population in NSW.

One solution already mentioned by a few principals is more staffing to enable greater capacity for some of the centres but some centres would already be running at capacity

[121] It is unfair to compare some of the regional centres who offer quality experiences without being immediately accessible to the majority of the population.

[122] One ex-principal estimated the figure at less than five percent of the population per year visiting EECs given the 35 EEC staff.

given finite sites and the need to ensure these sites are sustainable and not ravaged by overuse.

It was envisaged that significant education for concern and connection to the environment (Curriculum Development Centre [CDC] 1978c, 17), and sustainability within the environment (including economic and social and political), would take some time but slowly there has been a dissemination throughout NSW, Australia and globally. For NSW, we have evidence of the change in the state of the environment reports, as outlined in the previous chapter. Yet arguably the major inhibitors to EE/EfS are the anthropocentric nature of our society, aided and abetted by our consumeristic culture and political intransigence rather than systemic change.

Some of the factors that distinguish EE from other forms of education, which at times have been muddled by hegemonic interests diffusing and making evasive the terminology (for example, "sustainability" and the "greenhouse effect/climate chaos/climate change"), are now generally incorporated into education. For example, "critical and creative thinking" is a general capability in the Australian Curriculum, and is, along with student-centred, action, enquiry learning, part of the education discourse. However, these attributes are difficult to teach within the paradox of schooling where the nature and use of conflict are associated with negativity and citizens (students) with being recipients rather than creators, of "values and institutions" (Apple 1990, 86). This tacit, hidden curriculum is geared for preparing students for a market economy (Kanpol, 1999). It is fair, reasonable, and necessary to discuss what have been perceived as controversial issues.

> *And the way we used to get around that in developing policy was to talk not about involvement in political actions. We'd use the word participation. We hardly ever used the word advocacy, or fighting for the environment. Participation was the thing that we were aiming for… of some sort, at the appropriate age level.*
>
> HA

That is how many of the centre staff operate when able to do so—that is EE/EfS—action research through studying natural and human knowledge systems with world, future and systems thinking in repertoires of practice. Noted throughout this history has been the difficulty of encompassing EE within the curriculum over the last 40 years. Besides a space and support to do this, the centre staff and the supports that were gained through the Department have contributed to revealing EE/EfS to many teachers and others. They

have provided those support structures that are necessary to encompass something new—for teachers and students to look at knowledge as problematic, to take risks in being involved in change—such an issue for some, understandably, given that we are still enmeshed in the capitalist paradigm.

A theme within the interview data is concern not to be tarred with the activist brush, to be on the side of the technocrat—the scientific right, not an emotive activist. The adage of "not rocking the boat" still rings true.

Centre staff have always had an enormous freedom to innovate, while literacy, maths, and to some extent science are valued well above other subject areas. This is explicit, as evidenced through the curriculum and the structure of schooling, and implicitly, through the hidden curriculum (Welch 2018b, 175). In the last few decades, this subject matter favouritism, exacerbated by high stakes testing and the competitive nature of our times, has ensured that EE/EfS has not taken its rightful place of importance within the schooling system which would have ensured evaluation, and thus power as a subject. Without it, however, EE/EfS has enjoyed a freedom to develop without the intrusive gaze of the hegemonic power structures capable of dismantling and disempowering subjects not within its value structure—the intrinsic values have remained untouchable, and less vulnerable to corruption. In this environment, there is a thirst for innovative pedagogy.

However, that freedom comes with risks. An understanding of the theoretical as well as lived experience of EE are seen as a huge advantage. In addition, an altruistic motivation to shift the agenda in favour of the environment and sustainability is seen as essential. The spotlight was and is on centre educators.

In extrapolating about the form of EE, Strom (1987) noted that one needed the moral courage and perseverance to apply knowledge and see it through to the end. He understood that knowing is not enough and that often one's own vested interests will win out over the good of the environment for the whole. Strom, with all his experience, was convinced that attention and perspectives focused on the local environment was the way through. He lamented that the environment and thus our future was in the hands of bureaucracy! Strom believed it is a teacher's responsibility to be aware of these forces and how they work, and to reveal the consequences of these forces in a meaningful way.

In pleading for change, Strom concludes that our government cultivates a "syndrome" to pacify the "greenies:"

> *Give them wildernesses and all is well, whilst within the urban communities are the people who will never experience the wilderness only the clutter, confusion and social conflict of the urban consolidation, a living culture that is alien to our climate and our life style. Environmental education must be about changing the syndrome. In my opinion, it starts with making the sufferers aware of what is happening to them.*
>
> (Strom 1987, 8)

The need and want for change gained momentum in the 1960s, but the issues that need addressing have changed and become more complex. At first it was about land clearing and development—problems associated with urbanisation and industry. Gaining momentum and coming to consciousness since then have been the accumulating issues of land clearing, erosion, salinity, and eutrophication; population stress, excessive consumerism, and resource depletion; air, water, and land pollution; the damage caused by many exotic plants and animals; ozone depletion; and climate change (Withgott and Laposata 2012). Needs have moved from a deep ecological bent to sustainability. Whilst in the 1970s the concepts of environment and sustainability were alien, now they are embedded in our collective psyche.

The following two quotes illustrate both the changes over time and the changes to which centre education has contributed.

> *So those types of things were the more deep ecology whereas these days it's a lot more around sustainability and to a certain extent now resilience: both economic, social and of course environmental resilience.*
>
> FA

> *Centres have played an important role in getting the environment into people's psyche at an early level and hence have also had a role in the ultimate enshrinement of environment in legislation and where it now is integrated to some extent across the board in education (curriculum perspective and policy) and in awareness of broader community including government at all levels… The challenge for EECs going forward is that they need to adapt to the fact that they are not the only bastion of environmental enlightenment anymore, however they are still a stalwart of this and as the political pendulum swings in emphasis towards and then away from environmental sustainability in our rapidly evolving world, they (in my view) need to better adapt to this and focus on this in the now broader environmental framework, but to do so they need to be aware of this wider perspective and position they hold.*
>
> PA

There is evidence within this study that EECs are indeed adapting to the rapidly changing conditions.

There was an intention within this study to give voice where possible to the marginalised, the indigenous folk and women yet they have been given little attention. In writing this narrative, voice has been given to people using privilege in an altruistic fashion. There is the issue of the technocratic, yet important, "about" education being given a voice. Many researchers say that understanding and awareness is not enough as it masks environmental problems and excludes alternatives. Thus, maintaining technocratic environmentalism—addressing but not solving the problems (Apple 2000; Carr and Kemmis 1986; Greenall 1987; N. Gough 1987; Robottom 1983b; Stevenson 1987). These power dynamics are recognised within the interview data as the following quote exemplifies. EE/EfS is seen as transformative education.

> *If a person is an educator most of the time the discipline within which they operate is a reflection of the status quo. If you are taking environmental education seriously then by definition your role as an educator is educating for change.*
>
> GA

In many respects "about" EE has been a vehicle for moving EE/EfS forward within the dominant hegemony. Where possible the "in" and "about" has enabled the "for" of EE/EfS and at times "for" the environment has been the focus. However, the extent to which the "for" EE was enabled is in question. EE/EfS is the marginalised within this narrative, and thus so are the people who advocated/advocate for it. This study gives voice to EE/EfS and some of the people who have shifted the agenda within the NSW Department of Education. As with A. Gough, this narrative endorses and yet questions the dominant discourse (A. Gough 1997, 170). There are no claims of certainty and methodological orthodoxy within this narrative. (A. Gough 1997).

Lucas' construct of "in," "about," and "for," the environment has been used within this narrative due to its dominant theme within both the primary and secondary data collection. Nevertheless, as noted previously, even the author found it overly and inappropriately used. To shift the EE/EfS agenda forward, further exploration is necessary. Vare and Scott (2007) in addition to the "about," "in," and "for," ("what," and "how,") include a "why". In some respects, the "why" within this study is addressed in analysis of past political influences and economic priorities. However, generally

environmental advocacy, apart from a few brief vignettes, has been implicit within the narrative. Yet, the "why" is what fuels the EEC educator's passion and drive.

> *The ultimate goal of environmental education is for people to develop an awareness of their environment that will lead to a personal sense of involvement and eventually to the shaping of an environmental ethic to guide each person's behavior.*
>
> (Webb 1980)[123]

Past and present FSC/EEC educators' love of the environment is palpable within every interview—their desire to effect positive change in a world skewed toward destruction is admirable.

Vare and Scott (2007) concluded that in order to address the "why," the complementary approaches of ESD1 (informed, skilled behaviours and ways of thinking, useful in the short-term) and ESD2 (building critical thinking capacity and developing enquiring minds inherent in sustainable living) need to be addressed. Strategies for doing so include:

- promoting learning as an outcome, as well as a means to an end,
- balancing the employment of information and communication on one hand with facilitation of learning through mediation,
- trusting the unplanned direction learners may take, and
- evaluations that go beyond the "what has been learned?" outcomes to the "how do we know" as an additional source of learning.

(Vare and Scott 2007)

Research data indicates that the first three strategies are well developed within EEC pedagogies with the fourth developing as a practitioner action-research project in 2017 when the last interview was undertaken.

Centres provide hands-on experiences "in" the environment, allowing students to connect with a world from which they are often disconnected, often a detachment from the environment aided and abetted by a consumerist society. In the natural environment, they provide a connection that is intrinsic to wellbeing (Louv 2005). These hands-on

[123] Statement on Departmental field studies centres, compiled by the Field Studies Centres Teachers 1979, 1-2.

experiences provide the best form of pedagogy—doing—connected to the environment, enquiry-based, experiential, problem solving and empowering learning. Their teaching of the curriculum material is memorable and effective (Lieberman and Hoody 1998; Renshaw and Tooth 2018; Tooth and Renshaw 2009). Centres have the "in" and "about" of EE/EfS comprehensively covered. Furthermore, in relation to the intrinsically personal nature of learning (Apple 2000), there is potential for innately personal knowledge acquisition through these thought provoking, connected, enquiry-based, experiential, action-based learning experiences. There is difficulty evaluating curriculum knowledge acquisition from EECs. Yet, anecdotally on multiple occasions, and at times through rigorous research, there is veracity that student experiences encompass essential learning.

Centres provide experiences in leadership, peer support, well-being, connection to the environment and recreational activities. They provide specific sustainability and curriculum-based programs that enhance those taught within mainstream schools. Centre staff have specific training in these areas. Essentially, many of the centre educators, particularly the old guard but also many of the newer generation, teach for change to a more sustainable and environmentally sound existence. They expose the environmental, sustainability issues, and their possible remediation through connecting students to the environment with experiential, enquiry-based, problem solving learning:

> *Finding ways for students to become empowered, and working with them in the empowerment process, rather than empowering them.*
>
> (A. Gough 1997, 163)

They also provide role modelling for students. "Do as I say, not as I do" does not provide the authenticity required. In developing and surviving over time in an increasingly rationalised public managerialistic environment, centres have proved themselves the ultimate chameleons, able to change and adapt to bureaucratic policy, utilise it to their advantage and assist the NSW Department of Education, in developing best practice.

The desire to "reveal more compelling possibilities for addressing sustainability issues and the challenges of learning to live more sustainably" (Stevenson 2013, 516) has possibly, or possibly not been fulfilled, depending on whether there are ideas within this study that have not been encountered by the reader before. The conundrum found with this study is that the centres, and the personnel within the centres, are generally controlled by the dominating technocratic paradigm in which the NSW Department of Education

exists. Until there is a significant shift away from our consumerist economics to a more ecocentric way of living, there will always be a need for teacher and student support in the EE/EfS field. Furthermore, it seems logical, and empirically valid, that the environments alone, and connecting to these environments, are essential elements within EE/EfS and schooling. In an environment that cannot any longer afford political disempowerment, intransigence and politicisation, without assistance, it will be generally difficult for many teachers and students to visualise alternatives outside of this existence.

Conclusion

This historical account has opened a wide frame of many threads of history woven through a relatively large expanse of time,[124] space and place—global to local—the 1970s to 2017, with an earlier historical context setup from the founding of colonial Australia. Given the time covered, this analysis leaves plenty of spaces for people to continue the investigation and documentation, to right the wrongs, extend the field. One suggestion for further study would be in-depth case studies of individual centres such as those showcased in *Diverse Pedagogies of Place: Educating Students in and for Local and Global Environments* (Renshaw and Tooth eds. 2018). These studies detail EECs within the Queensland Department of Education system, theorizing both the contexts of influence and the distinct pedagogical approaches to EE/EfS in-depth. They include placed-based pedagogy focusing on advocacy, story, slow-time, walking, sacred place, shifting sands, and "the edge." Many of the themes have resonance with the research data within this study.

In understanding history, we can start to understand our present. It may make visible things that can be seen over a long period but are difficult to conceive in a shorter scenario. History can also give us a perspective on change or the lack of change—the dominant culture and power structures within which we live, and how or if they have shifted over time. Good history can provide solutions or supports for today. Through this history of the establishment and development of EECs in the NSW Department of Education, the importance of participation in society, and collaboration and understanding of EE/EfS on

[124] In written historical account terms.

all levels, is observable. There is an opportunity for perception, and acquisition of empathy, for different times and the enactments that occurred. The dominance and intransience of the power structures in which we live are apparent. These structures control the reproduction of society through, for instance the curriculum. They both silence and enable entities that threaten the dominant paradigm's existence. Yet, we can also observe the paradigm shift—whatever size it may be. Within this environment, there is an understanding of the importance of courage to take risks for the greater good—to work outside the square that is bureaucracy, while finding ways and means of working inside the square. The value and power of comradery and humour in collaboration seems emancipatory. Additionally, observable is the fundamental importance of place and time, the uniqueness of specific places, in the establishment and development of a diverse range of entities that together form a dynamic network that can survive, thrive, and push an agenda that is antithetical to the dominant culture.

EECs and their personnel have been a "round peg" too big for the "square hole." Yet, an action-oriented ethos, and enablers within and outside the NSW Department of Education, has facilitated the centres' significant contribution in shifting the agenda toward a more sustainable future. Importantly, centres connect students to our environment, specific places that are essential in our globalised context. Descriptive analysis reveals an ecocentric rather than anthropocentric skew dominated by a world heavily influenced by our consumeristic society. EEC educators have fashioned themselves to fit. Moreover, EE/EfS must fit for a worthwhile future, or indeed any future involving humans. The centres and their personnel have truly been working outside, as well as within, the square within.

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APPENDICES

Appendix i: Chronological table of centres

Chronological Table of Centres, Regions, Teachers-in-Charge/Principals and Teaching Staff as Known, and Teaching Numbers According to the NSW Industrial Relations Commission, 25 March 1994

Year	Centre	Region	Chronological order of Teacher-in-charge/Principal (year) – Centre Teachers[125]	No. of Teachers 1994[126]
1972	Muogamarra/Gibberagong Field Studies Centre [By 1989 Muogamarra Field Studies Centre had become Gibberagong Field Studies Centre]	Sydney Region	Barbara Hamilton=> Bruce Foott (78)=> Stephen Wright (89)=> David Smith (09).	2
1973	Wirrimbirra/Wooglemai Field Studies Centre [Part of the David G. Stead Memorial Wildlife Research Foundation of Australia (Incorporated) in 1964, Wirrimbirra became a NSW Department of Education Field Studies Centre in 1973. In 1994 it moved from Wirrimbirra and became Wooglemai Field Studies Centre.]	South Western Sydney Region	Keith Armstrong (73)=> Janusz Haschek (81)=> Gordon Kovacevic (88)=> Steve Benoit (89)=> Peter Nicoll (94)	5[127]
1975	Thalgarrah Field Studies Centre	New England Region	David Kennelly (76)=> Julie Kennelly=> Matt McKenzie.	1
1975	Bournda Field Studies Centre	Illawarra South Coast Region	Jack Miller (76)=> Doug Reckord	1
1976	Awabakal Field Studies Centre—Shortland Wetlands Field Studies Centre[The Wetlands Environmental Education Centre]	Hunter and Central Coast Region	Brian Gilligan (76)=> Chris Prietto (90)=> Carolyn Gillard=> Peter Jones.	2

[125] Note: This is by no means a complete list. It includes most teachers-in-charge and some assisting teachers. It is unlikely that all teachers-in-charge/principals are listed. For example, Red Hill had a series of people in the early 2000s. Only a few assisting teachers are listed. Auxiliary staff have not been listed (There would have been too many assisting teachers and auxiliary staff over the years to list in this manner).

[126] Annexure of the Crown Employees (Principals, Centre Managers) Award [1994] NSW Industrial Relations Commission 22 (25 March 1994)

[127]This figure includes Wedderburn Outdoor Resource Centre, and Camden Park and Georges River Education Centre personnel. Thus there were 2 teaching staff at Wirrimbirra.

1976	Wambangalang Field Studies Centre	Western NSW Region	Simon Leslie (76)=> Neil Dufty (76) Rob Newton=> Kevin Harvey=> Sue Haynes (Saxby).	2
1977	Dorroughby Field Studies Centre	North Coast	Ian Clements (77)=> Stuart Willows=> Christine Freeman=> Cindy Picton (17).	1.2
1978	Royal National Park Field Studies Centre	Sydney Region	Gary Schoer (78)=> John Critchlow=> Pam Melrose.	3
1978	Longneck Lagoon Field Studies Centre	Western Sydney Region	Warwick Giblin (78)=> David Bowden (78)=> Christine Koettig (81)=> Neil Dufty (87)=> Trevor Nixon (91)=> Ian Hancock.	2
1978	Brewongle Field Studies Centre	Western Sydney Region	David Bowden (80)=> Jenny Dibley (88)=> Rick Fleming=> Mark Edwards (02).	2
1987	Field of Mars Field Studies Centre	Northern Sydney Region	Howard Barker (87)=> Chris Koettig (87)=> Vivenne Seedsman=> Steve Papp (97).	2
1989	Cascade Field Studies Centre	North Coast Region	Geoff Bridger (87)=> Geoff Tomlins=> John McQueen.	1
1989	Warrumbungles Field Studies Centre	Western NSW Region	Jane Judd (89)=> Meg Leathart (02).	1
1989	Riverina Field Studies Centre	Riverina Region	Keith Collin (89)=> Gary Faulkner (Soil Conservationist/Education)=> Dick Mead.	2
1989	Mt Kembla/Illawarra Field Studies Centre [Became the Illawarra Field Studies Centre when it was forced to relocate in 1998 due to land slippage on the Illawarra Escarpment site]	Illawarra South Coast Region	Stuart DeLandre (89)=> Ron Tunstall.	2
1990	Observatory Hill Field Studies Centre	Sydney Region	Paulene Dowd (90)=> John Bailey=> Glen Halliday.	1
1990	Rumbalara Field Studies Centre	Hunter Central Coast Region	Neil Dufty (90)=> Ross Wellington (90)=> Mark Attwooll (96)=> Chris Freeman (98).	2

1990	Botany Bay Field Studies Centre	Sydney Region	John Atkins	1
1991	Camden Park Field Studies Education Centre. Gazetted as the Camden Park Environmental Education Centre in 2000	Sydney Region	Peter Nicoll (91) => Brian Trench (91)	1
1991	Wedderburn Field Studies Outdoor Resource Centre. Disbanded around 1996.	South Western Sydney Region	Wendy Tebbutt (91).	1
1994	Georges River Field Studies Education Centre. Gazetted as Georges River Environmental Education Centre in 2000.	South Western Sydney Region	Sharyn Cullis (94).	1
1995	Red Hill Field Studies Centre	Western NSW Region	Sue Fuller (95)=> John Holschier (95)=> Cindy Picton (06)=> Michele McFarlane (14)	2[128]
1996	Taronga Park Zoo—Western Plains Zoo: Dubbo. Joined the Field Studies Network becoming the Environmental and Zoo Education Network [EZEC] in 1999.	Northern Sydney and Western NSW Region	Mark Caddey (92)=> Paul Maguire (95)=> David Smith (03)=> Debra Haesler	4
1997	Penrith Lakes Environmental Education Centre	Western Sydney Region	Steve Etheridge (97)=> Bran Lazendic.	2

[128] The Zoos were not within the centre network and Red Hill FSC and Penrith Lakes EEC, not established within the Department of School Education in 1994 and thus not listed in the Industrial Relation Commissions Annexure. The figures for these entities are taken from the interview data.

Appendix ii: Online Survey Questions

Research Team: The University of Newcastle:
Anne Ross, PhD Candidate;
Assoc. Prof. James Ladwig, School of Education, The University of Newcastle &
Dr Nicole Mockler, Faculty of Education and Social Work, University of Sydney: PhD Supervisors

This questionnaire is intended for Environmental Education Centre Principals, Staff and Australian Association of Environmental Education Affiliates. It will inform my research higher degree study into a history of Environmental Education Centres in NSW.

Participation in an online questionnaire will advise the selection of potential interviewees to be invited to participate in oral histories/case studies relevant to the history of EECs in NSW. Survey responses will additionally inform the study generally and assist in contextualizing the gathered data.

Participation in this study is entirely voluntary and you are entitled to opt out of the research at any time without question. Consent for this online survey will be implied if you take the time to complete the survey.

Please consider each question and enter a response in the descriptive text box provided.

Your time and expertise in assisting my endeavour is greatly appreciated. Kind regards, Annie Ross

Q1: If you could interview anyone who was instrumental in the establishment and running of any of the EECs in NSW who would they be?

Q2: If you have insight into the history of EECs in NSW: Which EEC Principals, or ex-Principals do you think were leading the way with best practice environmental education/education for sustainability throughout the history of NSW EECs? Why?

Q3: Are there any other people you know who were instrumental in the establishment and management of EECs in NSW?

Q4: Do you know of EECs or Field Study Centres that have been established and disbanded in NSW? If so please elaborate.

Q5: Do you know of any existing written history of EECs?

Q6: Can you think of any other documentation that may assist in shedding light on the development of EECs?

Q7: If you had a chance to ask questions regarding the establishment and management of the EECs what would they be?

Q8: Are you interested in receiving an electronic copy of the final thesis of this history of Environmental Education Centres in NSW?

Q9: Are you interested in receiving any scholarly papers developed from this history study?

Q10: If you have answered yes to either or both of the two last questions please give an email address below.

Appendix iii: Semi-structured Interview Questions

1. What role did you play in the development of Environmental Education Centres (EEC)?
    a. When?
    b. Where?
    c. What? Why? How?
    d. Formal roles?

2. Formal position?
   Please recount any significant events in which you were directly involved.
    a. How did this fit within the bigger picture/overall program? Why was it important?
    b. What was your individual/personal involvement?
    c. Who else was involved? Who were the main players?
    d. What were the consequences of this event?

3. What did you see as the overall understanding of the educational function of these centres/centre?

4.
    a.
        i. What were your main educational outcomes (desired)?
        ii. What did/do you see as the best way for people to learn these things (curriculum and pedagogy)?
        iii. What outcomes do you think you were successful in delivering?

b. What kind of curriculum and pedagogy were you able to achieve? Could you analyse any difference between the ideal and the reality?

5. What was the biggest lesson learnt about how the system (educational/political) works?

6. Have you got any advice that anyone involved in environmental education should keep in mind for the future?

Appendix iv: Questions Contributed by Research Participants

1. What was the driving influence on establishing so many FSCs and EECs in NSW?
2. To what extent did bureaucratic vs political aspirations play a part in their establishment?
3. What were some major hurdles to their establishment?
4. What was the relationship between the development of a state Enviro Ed Policy in schools and the burgeoning of FSCs and EECs?
5. Compare and contrast accountabilities for practice and results past and present.
6. Why has establishment been ad hoc and opportunistic and not based on well understood criteria/needs?
7. What are the similarities and differences between centres (including those in Qld) in terms of inputs and outputs?
8. Why was the site chosen for establishment of an EEC?
9. What are the benefits to student learning of the activities of the EEC?
10. What is the main impediment to expanding the impact of the activities of the EEC?
11. How significant was the legacy of Thistle Harris and Allen Strom in the establishment of EECs in NSW?
12. What were the arguments advanced 30-40 years ago for the establishment of FSCs (later known as EECs)?
13. What examples were set by educators in other countries for the establishment of FSCs (some countries placed more emphasis on “Outdoor Education”)?
14. How do we position the concept of “EECs” in the light of the environmental education movement of the last four decades (in particular), and in the light of the global conservation-environment movement of the times, and, later, the focus on the concept of “sustainability”?

15. What were the political contexts of the times in relation to the advocacy of the need for FSCs (EECs)?
16. What were (and still are) the constraints of involving school students in experiencing the work of EECs?
17. In the light of the so-called "digital age" (where much "education" is undertaken "online" and via electronic devices), how do we now assess the very existence of EECs?
18. (following upon point 16) With increasing urbanisation and high-rise living (where humans are increasingly alienated from the "real world" of natural environments) what are the future constraints in having school students experiencing:

(a) natural environments in general, and (b) formal education programs being conducted in natural, or near-natural environments?

19. Who were the people involved?
20. What processes were involved?
21. What were the barriers?
22. Did several organisations collaborate to push for their establishment?
23. If so, who were they?
24. How did they get the Department of Education onside and prepared to fund them?
25. What politicians were involved?
26. Was there a push from schools?
27. Why wasn't the model of two teachers per centre the staff norm for EECs?
28. How could the establishment of EECs have been more strategic in terms of community access and needs?
29. In what ways might EECs have been developed as a shared facility with other key stakeholders/providers?

30. How has the demise/shift of agenda of a powerful political lobby for environmental educ. such as the Assoc. for Environmental Education and environmental issues/concerns in general coincided with the fluctuating status of environmental education as a community and in turn curriculum priority?
31. What flaws/inadequacies in systemic support and strategic direction for environmental ed, and in turn centres, enabled an ongoing ad hoc approach to the establishment, staffing, training, valuing and accountability measures of EECs?
32. Why aren't there more of them? Why aren't they a compulsory part of children's education?
33. I often wonder how it was decided to put a centre in a certain place and how many people to staff it with.
34. What would our Environmental Education in schools look like without EECs?
35. Who were the key people or organisations involved in setting up the FSC/EEC?
36. How was the centre resourced and funded at the start?
37. How is it resourced and funded today?

Appendix 5: Survey Participant Information Statement

School of Education

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

ASSOCIATE PROFESSOR JAMES LADWIG
School of Education
FACULTY OF EDUCATION AND ARTS
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Survey Participation Information Statement for a PhD Research Project:

A history of Environmental Education Centres in NSW
Document Version 2: 20 February 2015

You are invited to participate in a research project relating to the history of NSW Environmental Education Centres (EECs). This study is being conducted as part of my PhD thesis. My supervisors are Associate Professor James Ladwig, School of Education, the University of Newcastle and Dr Nicole Mockler, the faculty of Education and Social Work, Sydney University.

Why is the research being done?
In the last few years there has been some retirement of key environmental educators from Environmental Education Centres within NSW. Many of these people have invaluable experience within the EEC network and have been instrumental in the establishment and development of EECs. With history informing how things play out in the present day it is an important time to study the history of Environmental Education in New South Wales.

Who can participate in the research?
This information statement is being directed to environmental educators and those involved with environmental education centres generally via EEC's in NSW and the Australian Association of Environmental Education.

What would you be asked to do?
We are asking you to:
1) pass this email on to any environmental educators who you think may be interested in this history project; and,
2) participate in an online questionnaire that will:
   a) advise the study generally;
   b) assist in contextualizing the gathered data; and,
   c) inform the selection of potential interviewees to be invited to participate in oral histories/case studies relevant to the history of EECs in NSW.

A link to the survey is embedded at the end of this information statement.

What choice do you have?
Participation in this research is entirely your choice. Consent is implied if you participate in the online survey. Whether or not you decide to participate, your decision will not disadvantage you in any way and will not affect your relationship with the University researchers and the University in general.

If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data that identifies you.

How much time will it take?
It is envisaged that the online survey will take between 20-30 minutes to complete.

What are the risks and benefits of participating?
You will receive an electronic copy of the final thesis and any scholarly papers emanating from this research by indicating an interest in receiving these documents (see question eight, nine and ten of the online survey).

Any risk associated with this study is negligible.

This study will enable environmental educators to have their story told. Given the current pressing needs for environmental/sustainability education, and given the relative success of the EECs it is important to learn from EEC struggles and successes.

How will your privacy be protected?
As this study is a history of environmental education in NSW it is important for characters within this history to be identifiable. This is central to the context, verification, reliability and validity of the study. For the protection of your privacy information provided by you will not be directly linked to you within the study. Only researchers associated with this study will be able to identify you as the informant. However, given the small EEC, EE/EfS community(ies) it is very possible that information supplied may be identifiable. For this reason please ensure that no information of a sensitive nature is disclosed.

Data usage and storage?
All data collected as part of this research will be treated in accordance with University policy: Responsible Conduct of Research Policy, Document Number 000873 and in particular section 4.2. Management of Research Data and Primary Materials. All electronic data will be kept on a password protected computer and access to the data will be limited to the RHD candidate and her supervisors. All hard copy data will be kept in a secure location under lock and key when not in use and under the direct control of the RHD candidate.

Once this study is complete survey data will be stripped of informant identifiers such as email addresses, contact phone numbers and names.

In the event that someone wishes to verify or build on this history in the future it is important for the gathered data to be kept for a minimum of five years. As this information is of State, and possibly National significance the data will be offered to the State Archives within the Auchmuty Library at The University of Newcastle.

What do you need to do to participate?
Your participation in this study is entirely voluntary. Consent is implied if you take part in our online survey. Before completing the survey, please note the details regarding the collection and use of survey data provided above. Please do not hesitate to contact one of the research team members named below for additional information or clarification about any aspect of this research project.

If you agree with the details in this information statement and would like to participate in this research project please access the online questionnaire at https://www.surveymonkey.com/s/NSWEEC-history

Thanking you kindly for your participation in advance. Best Annie

Anne Marie Ross

School of Education
Faculty of Education & Arts

Assoc. Prof James Ladwig

School of Education
Faculty of Education & Arts

Dr. Nicole Mockler

Faculty of Education & Social Work
University of Sydney

This project has been approved by The University of Newcastle's Human Research Ethics Committee, Approval No H-H-2015-0014. Any concerns regarding the manner in which this research is being conducted should be directed to Assoc. Prof. James Ladwig 02 4921 6847, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au .

Appendix 6: Interviewee Participant Information

Statement **School of Education**

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

ASSOCIATE PROFESSOR JAMES LADWIG
School of Education
FACULTY OF EDUCATION AND ARTS
University Drive, Callaghan
NSW 2308 Australia
EMAIL:james.ladwig@newcastle.edu.au
TELEPHONE: 02 49216847
FAX: 02 4921 7887

Interview Information Statement for a PhD Research Project:

A history of Environmental Education Centres in NSW
Document Version 2: 20 February 2015

Dear XXXX,

You are invited to participate in a research project relating to the history of NSW Environmental Education Centres (EECs). This study is being conducted as part of my PhD thesis. My supervisors are Associate Professor James Ladwig, School of Education, the University of Newcastle and Dr Nicole Mockler, the faculty of Education and Social Work, Sydney University.

Why is the research being done?
In the last few years there has been some retirement of key environmental educators from Environmental Education Centres within NSW. Many of these people have invaluable experience within the EEC network and have been instrumental in the establishment and development of EECs. With history informing how things play out in the present day it is an important time to study the history of Environmental Education in New South Wales.

Who can participate in the research?
The environmental educators being invited to participate in research interviews have been identified as key environmental educators within EEC history via analysis of available documentation and an online survey directed at Environmental Educators. Leaders in the field across the last 40 years – those educators instrumental in the establishment and development of EECs, and environmental education (EE) and education for sustainability (EfS) more broadly, have been selected.

What would you be asked to do?
If you agree to participate you will be asked to take part in oral history interviews to inform this history study. Interview questions will be supplied to you well in advance. Broadly, topics will include your involvement in the establishment/development of the EEC(s) and EE/EfS within/emanating from these Centres; and your recollection of EEC, EE and EfS progress. This is your story and active participation will be embraced. How you wish to be interviewed – in person, via phone or via Skype – the number of interviews, duration of interviews and length of interview - whichever works best for you will be considered and adopted as much as possible. Your preferred method and time of interview(s) will be negotiated with you once your confirmation is received. Interviews will be audio recorded and then transcribed into a document by me. You will be requested to read and contribute to the editing of interview transcripts to ensure documentation is correct and that you are comfortable that no risk is posed to your reputation.

In the event that someone wishes to verify or build on this history in the future it is important for the gathered data to be kept for a minimum of five years. As this information is of State, and possibly National significance the data will be offered to the State Archives within the Auchmuty Library at The University of Newcastle. Any restrictions you may wish to place on any future access of your data will be discussed throughout the interview process and be a requirement for access to your data in the future.

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way and will not affect your relationship with the University researchers and the University in general.

If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data that identifies you.

How much time will it take?
The number and amount of time interviews will take will be negotiated. For instance you may prefer a lengthy interview, or alternatively a few shorter interviews may be favored.

What are the risks and benefits of participating?
You will be sent an electronic copy of the final PhD thesis. In addition to the final PhD thesis there is a possibility that research could lead to other scholarly papers. You will be sent a copy of any additional academic documents that emanate from this research.

Any risk associated with this study is negligible. If you feel that any part of your interview raises risk to your reputation you will have an opportunity to eliminate this risk in the transcript editing phase.

This study will enable environmental educators to have their story told. Given the current pressing needs for environmental/sustainability education, and given the relative success of the EECs it is vital to learn from you how you managed to make the gains you have.

How will your privacy be protected?
No matter which interview method you chose your privacy will be safeguarded with only project researchers privy to your data set. As this study is a history of environmental education in NSW it is important for oral history participants to be identifiable. This is central to context, verification, reliability and validity. Only the information within your verified transcript will be used in the development of this study.

Data usage and storage?
All data collected as part of this research will be treated in accordance with University policy: Responsible Conduct of Research Policy, Document Number 000873 and in particular section 4.2. Management of Research Data and Primary Materials. All electronic data will be kept on a password protected computer and access to the data will be limited to the RHD candidate and her supervisors. All hard copy data will be kept in a secure location under lock and key when not in use and under the direct control of the RHD candidate.

What do you need to do to participate?
Your participation in this study is entirely voluntary and your active consent is required. Before giving consent, please note the details regarding the collection and use of interview data provided above. Please do not hesitate to contact one of the research team members named below for additional information or clarification about any aspect of this research project.

If you agree with the details in this information statement and would like to participate in this research project please sign the consent form and return it to research personnel via email at annemarie.ross@newcastle.edu.au**.**

Thanking you kindly for your time in reading through this interviewee information statement. I hope you embrace this opportunity to participate in documenting this history of environmental/sustainability education in NSW.

Kind regards, Annie Ross

Anne Marie Ross

School of Education
Faculty of Education & Arts

Assoc. Prof James Ladwig

School of Education
Faculty of Education & Arts

Dr. Nicole Mockler

Faculty of Education & Social Work
University of Sydney

This project has been approved by The University of Newcastle's Human Research Ethics Committee, Approval No H-H-2015-0014. Any concerns regarding the manner in which this research is being conducted should be directed to Assoc. Prof. James Ladwig 02 4921 6847, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au .