# Gilbert White Never Came This Far South: Naturalist Knowledge and the Limits of Universalist Environmental Education

Andrew Brookes, La Trobe University Bendigo, Australia

***Abstract***

*"Naturalist" is a complex category, which contains opposites. When understood a certain way, "Naturalist" knowledge can be readily universalized into environmental education, and abstracted into formal education. But "naturalist" knowledge can also be construed as an antidote to tendencies to overgeneralize outdoor environmental education. In the reading of what it means to be a naturalist that I present here, I use the work of 18th century British naturalist Gilbert White to explore the idea of a life interwoven with the natural history of a particular place, and some implications for environmental education in Australia. I draw attention to some shortcomings of approaches to environmental education that globalize ideas developed in particular North American or European environments.*

***Résumé***

*Le « naturaliste » est une catégorie complexe qui comporte des contraires. D'une certaine perspective, le savoir « naturaliste » peut être facilement universalisé en éducation environnementale et résumé en éducation formelle. Il peut aussi être interprété comme un antidote aux tendances à surgénéraliser l'éducation in situ. Ma compréhension de la définition de naturaliste s'inspire d'un ouvrage d'un naturaliste britannique du 18e siècle, Gilbert White, pour explorer l'idée d'une vie tissée avec l'histoire naturelle d'un endroit particulier et quelques implications pour l'éducation environnementale en Australie. J'attire votre attention sur certaines lacunes dans les approches de l'éducation environnementale qui mondialisent des idées développées surtout dans des environnements nord-américains ou européens.*

> It is, I find, in zoology as it is in botany: all nature is so full, that that district produces the greatest variety which is the most examined. (Gilbert White, letter to Pennant, October 8, 1768 [1993, p. 51])

In 1789[1] Gilbert White published *The Natural History and Antiquities of Selbourne* (*Selbourne*). White was almost 70 at the time, and *Selbourne* was the culmination of 20 years work. Described by the editor of my Oxford edition as artless, and by its author as parochial (not a disparaging term at the time), *Selbourne* was published initially by White's relatives. *Selbourne* nevertheless

became, according to Allen (1976), the only literary classic in the field of natural history. It has appeared subsequently in over 200 editions. It is not only "the most published scientific text," but also, according to Foster (1993) "a literary classic rivalled only by works such as the Bible, Shakespeare's plays, and Bunyan's Pilgrim's Progress" (p. xxviii). Charles Darwin was influenced by *Selbourne* (Allen, 1976; Stewart, 1995); it was one of Thoreau's favourite books (Stewart, 1995), and it is credited by Worster (1977) with the rise of the nature essay in the latter half of the 19th century in the United States. *Selbourne* takes the form of a series of letters, whose contents may at first seem unstructured, and to lack a consistent literary style. Both of these impressions only add to the enigma of *Selbourne*'s enduring appeal, and not surprisingly *Selbourne* has attracted considerable scholarly attention. My intention here is to use *Selbourne* as a focal point for some questions about the role, or roles, of natural history knowledge in contemporary environmental education, especially in the region of Australia where I live and work. *Selbourne*'s enduring appeal is probably sufficient reason for this, but *Selbourne*'s location in time and place, and its distinctive qualities, particularly recommend it.

## White's Epistemology: A Path Not Taken?

If it is imagined that the reader has been invited to stay in White's cottage, joining him on some rambles in the nearby countryside and sharing evening discussions about whether swallows hibernate or the structure of a fern-owl's claw, the aptness of White's approach to writing *Selbourne* is evident. Read in this way, *Selbourne* is infused with the tone and texture of experiences guided by curiosity, melded with careful observation, and premised on the expectation of a lifetime in the one area. White is a careful and systematic observer; but *Selbourne* retains the qualities of contingency and immediacy that attend observant walking. A walker's thoughts and mental associations while walking are not neatly assembled like the topics of a syllabus, different plants are not encountered in textbook order, and creatures do not appear according to taxonomic rank. Nevertheless, White's rambles were not disorderly, but were guided by interests and intentions. He made particular enquiries, he sought specific things, and he linked his observations with contemporary scientific debate, the works of previous authors, and his knowledge of natural history in other places. His writing unostentatiously evidences his classical education. What he did not do (although some editors in attempting to improve his work have done [Foster, 1993]), is take any of these as guiding his literary structure. He instead retained a sense of how his local area would appear were he to unhurriedly guide you through it.

Generations of nature essayists have eclipsed White in literary refinement. Makers of nature documentaries have succeeded in creating realities (far

exceeding quotidian nature's ability to entertain [Siebert, 1993]), in which time and space are stretched, compressed, edited, and re-arranged, according to the grammar of television narrative. In televised nature, cultural tendencies to equate truthful representation with perspective drawing (Evernden, 1992) and photographic realism are taken far beyond the limits of ordinary human vision. "Nature" connotes nature *writing* and nature *documentaries*. I doubt that White's intention was to spawn a literary genre, but to invite others to study the world around him with the same patience, interest, and empathy he did.

I suspect part of the appeal of the term "naturalist" is that it has so many connotations and invokes so many exemplary figures: Charles Darwin, Henry David Thoreau, Rachel Carson, Alexander von Humbolt, the bird expert in the local outdoor club, the primary school teacher who introduced you to caterpillars. However this polysemy, which gives the term such rich associations, may also impair discussion of the place of natural history knowledge in environmental education (see, for example, Van Matre, 1994). "Naturalist" contains opposites (see Mabey, 1995) and my choice of *Selbourne* is partly a semantic device to help avoid the mire of contradictory meanings. It is not my contention that *Selbourne* is an archetype for the place of natural history in environmental education, and neither do I wish to treat Selbourne (the place) as an ideal type. However, *Selbourne*'s ontological basis—a life in a place—and the way its epistemology blends broad intellectual interests around rambles in the countryside, reward careful consideration.

*Selbourne* offers an epistemology centred on a lifetime relationship with a relatively small area. Written in a particular part of England when Britain was near the height of its colonial power, and at a time when institutionalized, professional natural history was in its infancy, it also offers a truly antipodean perspective on natural history when read in Central Victoria, Australia, at the beginning of the 21st century. *Selbourne* is an often-cited point of departure for historical accounts of modern environmentalism (for example, Worster, 1994), including the rise of American-centred views of nature (for example, Nash, 1982, 1990; Shore, 1994; Stewart, 1995; Grove, 1995). It appeared one year after the first British convict colony was established in Australia at Sydney Cove and five years after the loss of Britain's American colonies. Although naturalists were active in Australia from the beginning of European settlement, for the first hundred years of settlement their role was mainly confined to contributing specimens to collections housed in Europe. Local field naturalist clubs were not established until the 1880s (Bolton, 1992). In a reversal of the order of events in Britain and the United States, the institutionalization of natural sciences in Australia, from around the middle of the 19th century (Moyal, 1976), preceded any significant development of local, amateur natural history by decades.

Environmentalism, the natural sciences, and environmental education in Australia did not gradually arise from collective experience of the land, as was

the case in Britain and America; collective experience of the land for most non-indigenous Australians was and remains limited. When a student of environmental education in Australia reads in Orr (1992): "we can begin to reinhabit our places" (p. 131), "we" may be centred on the United States, but taken as Australian. US-centric views are so familiar as to pass unnoticed, rendering "we" universal and placeless. For Orr, "reinhabitation" refers to pastoral or Arcadian ideals articulated by Thoreau, which have some links to the past. But in Australia there was no Arcadian period, and questions arise around the appropriateness of importing environmental education from one part of the world to another without sufficient local knowledge, and without sufficient attention to biogeographical, historical, and cultural differences.

Approaches to environmental education and "place" derived from experience of Australian environments could be quite different to those derived from North America or elsewhere. To what extent is it justifiable to conduct or plan environmental education in any region of Australia without first getting to know the region and its communities? (A reading of *Selbourne* might suggest that a lifetime's careful observation barely qualifies one to provide some modest instruction). I am mindful here of some counsel I recalled when my wife and I came to build our house. The advice, published in a newspaper by a nature columnist who had retired to the country, was that one should spend several seasons observing the land before deciding where to build. Whatever the prospective builder might know about ecological principles, species lists for an area, environmental design, and so on, there remain details which can only come from familiarity. Where do the kangaroos come down to feed? Where are the orchid patches? Do they flower every year? Where does the water lie after a spring downpour? This turned out to be good advice for my family so far as house-building goes. It is also advice that might be offered to anyone who would build environmental education curriculum in Australia: first know your place.

If *Selbourne* exemplifies a once busy path now somewhat overgrown in Britain and North America, it points to a way largely untrodden in Australia. Australians were not in a position to be influenced to any extent by *Selbourne* in the 19th century. While Thoreau was laying the foundations for American environmentalism in Concord, and the Victorian craze for natural history was flourishing in Britain, the first European settlers were entering Central Victoria seeking grazing land, shortly followed by greater numbers in gold rushes of the 1850s. White's influence could be said to have emerged later, indirectly, through developments in natural history and environmental education. In the 20th century British and American influences in Australia have plainly shaped school nature study (especially until the 1970s), and school environmental education. The same can be said for the overall conceptual landscape from which these emerged, particularly the contributions of field naturalist clubs (from the late 1800s), nature writing, and conservation movements. Approaches to forestry and national park management,

and of course the natural sciences, are broadly indebted to Anglo-American influences. Gilbert White did "come to Australia" via these routes and through the influence of writers such as Orr (1992) and Livingston (1994), who have developed the theme of "place" and personal experience in environmental education. But the fact remains that collective experiences sedimented in these influences are largely non-Australian.

White intended his project to generalize only in the sense that he considered every district would reward the same attention that he paid to Selbourne. *Selbourne*'s apparent artlessness is partly due to White's disinclination to derive abstract conclusions which could be dis-embedded from Selbourne and re-imbedded in, say, Central Victoria; that is a more modern inclination (Giddens, 1992). But almost from the time of British colonization what most Australians have not done is live and observe as White did. It is not too late to do so, but it is not easy to envisage how White's particular approach to natural history could be incorporated into school or community environmental education. It is perhaps harder to contemplate the proposition that local knowledge is a pre-condition for developing environmental education curriculum in a particular region.

*Selbourne* was the culmination of a lifetime's observation—White granted a primacy to experience and observation, and took local knowledge to be intrinsically worthwhile. Moreover, White did not experience Selbourne alone. Just beneath the surface of *Selbourne* generations of herbalists, poachers, farmers, and kitchen gardeners inhabit the world from which White's understandings emerge. White was an outstanding figure, but interest in natural history was widespread in Britain, including among the lower classes (Secord, 1996; Thomas, 1984). Natural history knowledge is not just the accumulation of facts, but also the layering of stories in which personal experience, social interactions, and locality together give both order and meaning to nature. One pedagogical implication is that natural history education should be considered as constructing relationships. Moreover, the local knowledge required for environmental education planning must include knowledge of local patterns of community relationships with nature.

## Australian Environments

It may be helpful here to offer some points that illustrate the distinctiveness of the problem of environmental education in Australia. Bolton (1992) observes "[s]eldom were so few people in possession of such power to shape the environment of so much of the earth's surface" (p. 23); moreover, in comparison to other nations, "Australians have yet had less collective opportunity of getting to know their environment and learning how to come to terms with it" (p. 23). Paradoxically in a large land (8000 square km) with a small population (20 million) almost since the time of first settlement, most

Australians lived in cities. However British occupancy of the continent (apart from arid areas) was rapid. In 1815 most settlement was within 100 kilometres of Sydney; within fifty years all of the land in eastern Australia that would be taken up for economic use had been (Bolton, 1992). This period of rapid occupation has been characterized as a search to find an imaginative hold on a country conceived as an empty page (Carter, 1988). The need to *occupy* the country, legally, effectively, and morally (Day, 1997) (and it should be added conceptually) has remained a national obsession. European colonization of Australia has from the outset been characterized by struggles to reconcile European categories and concepts with a landscape where experience confused even the most general metaphors, such as "tree" or "river." Trees shed bark and limbs and refused to offer shade. Rivers failed to converge to the sea, and instead dispersed seasonal floodwaters across desert plains. Seasons failed to behave seasonally and pastures failed to sustain stock after one or two seasons—many native plants did not survive sheep grazing, and did not return even when a pasture was spelled (Bolton, 1992). (In northern latitudes ecosystems in areas covered by ice in the last ice-age are characterized by relatively few species which share robust, invasive habits). Many Australian ecosystems reflect a very long evolutionary history and high levels of specialization and diversity. The colonization of Australia has proceeded "influenced neither by the ideals of aristocratic taste nor by the sense of familiarity and appreciation which comes from generations of experience" (p. 23). (This is not to suggest that there was universal indifference to the Australian landscape. On the contrary, some conservation impulses were evident from the beginning of colonization [Bonyhady, 2000], but these tended to derive from epistemologically narrow roots—aesthetic appreciation for the landscape or utilitarian concerns to preserve resources).

The biogeographical reasons why European colonists encountered such differences are well known. One hundred million years ago, Australia, together with Antarctica, Africa, South America, and India was part of the Southern super-continent Gondwanaland. Around 45 million years ago, when mammals and flowering plants were beginning to evolve, Australia split away and began drifting to its present position (Smith, 1986). Settlers in Australia thus encountered very different evolutionary branches from those encountered in either Europe or the New World, and considerable diversity (Table 1). The history of early settlement is in part a story of struggles to come to terms with the incomprehensible nature of nature in Australia (Martin, 1993), often (but not always) through attempts to conceive of the land in imported terms, not to mention attempting to improve its conformity with European expectations and aesthetics (Bolton, 1992). Attitudes to hunting wildlife, for example, developed as a reaction to the restrictions of British game laws. Often Australia was found wanting in comparison to imported norms and expectations. Flannery (1994) recalls, as I do, acquiring in primary school the distinct sense that "nature" in Australia was somehow inferior to

"nature" in Britain or the United States. It remains common for contemporary, successful indigenous species to be referred to as "primitive," or for soils that support a rich and diverse indigenous flora to be described as "infertile." Normal climatic variation—Australia is a land of "drought and flooding rains"—is treated as anomalous. The introduction of European farming practices, and non-indigenous species caused profound ecological disruption, the impacts of which continue to reverberate. Cattle and sheep, for example, compacted soil (Australia has no native hoofed animals) eliminated certain plants, and spread weeds (Bolton, 1992; Low, 1999). Rabbits when introduced multiplied in extraordinary numbers to devastating effect on native vegetation. (Interpreting the impact of introduced species on Australian ecosystems is confounded by persistent beliefs that Australian species are inferior [Flannery, 1994]), and mistaken notions of evolution in terms of competition between species, rather than optimization of ecosystems, and evolution as either a ladder of progress or cone of increasing diversity [rather than a branching tree]. On the latter point see Gould, 1991).

| | Canada | Australia |
|---|---|---|
| Water | Most freshwater of any country | Driest continent - half the continent has water courses which are seasonal, mostly dry, and do not reach the sea. 70% receives less than 500 mm per year; 30% less than 200 mm per year. Rainfall is highly variable from year to year. Large areas have fewer than 25 days of rain annually. |
| Number of flowering plant species endemic % in brackets? | 3000 (3%) | 20 000 (85%)<br>76 known extinctions<br>1000 vulnerable or endangered |
| Number of mammals (endemic % in brackets) | 194 (approx. 1 or 2 species) | 268 (84%)<br>19 known extinctions<br>43 endangered or vulnerable<br>25 introduced since white colonization |
| Birds (endemic % in brackets) | 426 (?) | 777 (45%)<br>20 known extinctions<br>50 endangered or vulnerable<br>32 introduced |
| Amphibians and reptiles (endemic % in brackets) | 84 (?) | 973 incl. 770 reptiles (approx. 90%)<br>3 known extinctions<br>80 endangered or vulnerable |
| Forest cover | 25% | 5% (10% at time of white settlement) |
| Topography | varied | Mostly relatively flat |

Table 1. Some comparisons between Canada (10 million $km^{2)}$ and Australia (7.7 million $km^2$). (Government of Canada, 1996; McLennan, 1998)

This is a short version of a very long story. However, adding more detail would simply reinforce the point that many aspects of Australian environmental experience are distinctive, and demand equally distinctive educational responses.

## The Problem of Generalizing About Local Knowledge

The colonization of Australia coincided with changing realities and knowledge regimes throughout those regions of the world in which western European cultural influences prevailed. The power of organized science largely overwhelmed the importance of local, personal knowledge, while at the same time industrialization and urbanization transformed everyday experience. Literally and conceptually nature became more distant. The implications of these shifts are an important theme in contemporary environmental literature (see, for example, Evernden, 1992; McKibben, 1990), and significant contributors to the environmental education literature, albeit not necessarily of the mainstream, have grappled with the educational consequences of these epistemological shifts (see, for example, Bowers, 1993; Livingston, 1994; Nabhan & Antoine, 1993).

It would be difficult to overstate the importance of this work. But what my reading of *Selbourne* suggests, and what the sketch above of the particularity of Australian environmental history implies, is that not only are understandings derived in Anglo-American cultural, historical, and physical environments an incomplete basis on which to develop environmental education in Australia; in some circumstances they may be as unsuited to the Australian environment as are some imported farming practices. Undoubtedly much that is true of environmental education elsewhere will be true in Australia, but the only way to be certain of that is to attend to local circumstances.

I will use Orr's (1992) essay "Place and Pedagogy" to illustrate this point, not because Orr demonstrates a lack of awareness of some of the issues discussed here, but because the opposite is true, so underlining how difficult it might be to incorporate something like White's approach to knowledge in Australian education. Beginning his essay with Thoreau, Orr remarks: "Ultimately, Thoreau's subject matter was Thoreau: his goal, wholeness; his tool, Walden Pond; and his methodology, simplification" (p. 125). Later, he suggests four reasons for incorporating "place" into teaching. He contends that experience combined with intellect educates the whole person; that knowledge of place is general, compared to the specialization of disciplinary knowledge; the experience of place allows students to apply (rather than simply comprehend) knowledge; and that learning to dwell is the heart of American community and democracy and psychological health. Later, he characterizes the approach he is advocating as reinhabitation.

Through Orr (1992) , Walden Pond becomes not so much a place as a prototype for "place." Orr suggests that "dwelling" in a place heals the individual and provides self-knowledge (perhaps of a transcendental or spiritual kind). Individualism is a distinctively American characteristic (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1986), and is, according to Bowers (1993), one aspect of a western mindset implicated in environmental problems. Whereas

White envisaged every district in Britain being accorded the same attention he had given to Selbourne, for Orr "place" becomes (paradoxically) generic and knowing the place becomes knowing the self. It is true that abstraction is to some extent an inevitable consequence of *writing* about place. Nevertheless Orr introduces a permissiveness in terms of *which groups* should know *what* about *which places*. It may be important, for example, that communities in areas where there are small patches of remnant native grassland learn to recognize and appreciate such areas. There is no reason to suppose this particular knowledge, linked in an important way to ameliorating the effects of past inattention to indigenous flora, will necessarily come simply from individuals developing "a" sense of place. Indeed, many Australians do attempt to reinhabit place by attempting to reconstruct European landscapes in rural Australia or in their backyards; a short walk around the rural city of Bendigo, near which I live, will convince any visitor of the truth of this.

Orr's position is not strictly individualistic, since he also links "place" and an ideal democratic community (cf. Putnam's [2000] detailed discussion of community as an urban and suburban phenomenon in 20th century America. Putnam can be read as making the case that rural life is neither necessary nor sufficient for the development and maintenance of social capital). Considered in other parts of the globe, returning to place-bound roots does not obviously lead to democracy and Arcadia. How do migrants or refugees in any country reinhabit? How should reinhabitation be interpreted in Germany, where blood-on-the-soil nationalism is so closely implicated in "place" and the roots of Nazism (Schama, 1995). What does reinhabitation mean in Britain if one moves up or down the social scale from Gilbert White, or to Scotland or Northern Ireland? Considered in other contexts—the Balkans, the Middle East, or Australia (at least from environmental or indigenous perspectives)—the association between the past, place, and political ideals is by no means benign. Arguably in Australia the past is mostly occupied by the roots of contemporary environmental problems; there may be little to be gained by returning there.

I will make one more point. Orr offers an epistemological distinction between outdoor experiences and school knowledge. He suggests a dichotomy between fragmented, specialized, discipline-based knowledge, and natural history experiences that embody wholeness and generality. But all knowledge is selective and partial, including experiential knowledge of local natural history. Had Gilbert White different interests; had he taken different paths, on different days, *Selbourne* would have been a different book. At any given time—for example when he stopped to consider gossamer in a field—he might instead have chosen to attend to the sounds of crickets; or to investigate the roots of a plant, or to closely watch beetles on a leaf. An interest in mushrooms (Fine, 1998) constructs a different world from an interest in birds (Jardine, 1998). Local knowledge is not monolithic. Nor is it finite. As

White (1993, orig. 1789) has famously put it (letter to Pennant, October 8, 1768): "It is, I find, in zoology as it is in botany: all nature is so full, that that district produces the greatest variety which is the most examined" (p. 51). The educational necessity is to choose how and why to shape naturalist experiences. (It is also a reminder that there is no final point at which an educator knows "enough" about the local environment to be certain how to proceed).

Naturalist study of the *Selbourne* kind must balance planning with responsiveness. Each experiential moment offers innumerable choices as to what to attend to and what to do next. Even a simple walk in the forest may be a mixture of intentions and responses. Nevertheless there are choices to be made, and those choices matter. To see the effect of sheep grazing on native herbs, one must learn to recognize certain herbs and grasses. Moreover, understanding the significance of that loss of vegetation might depend on observations (or other knowledge) to do with the effects on water tables and dry land salinity of changed vegetation structure. Alternatively, the wildflowers on a certain hill may be meaningful to an individual in a quite different way, as: "the patch of orchids where we sat that time the storm came in." Clearly guiding such experiences educationally cannot be easy; nor will it be obvious in what direction they should be guided.

## Finding New Paths for Environmental Education in Australia

In Australia, history provides some guidance. Australians may not have learned how to live with the land, but know quite a lot about how not to. (This "we" does not include indigenous Australians, of course. I have not considered the question of indigenous knowledge here because of its complexity. There are no easy answers there). Australian environment history has been marked by failures to understand particular environments, often with ecologically cataclysmic results, but also by countless small acts of inattention, indifference, and ignorance. Environmental history provides one possible starting point for educators intent on "knowing their place" before presuming to teach or plan environmental curriculum (see Brookes [in press] for a further discussion of the question of placelessness in curriculum). Some considerations:

- Concentrate particularly on learning to read the story of environmental changes that have followed European colonization. For example, it is difficult to emphasize enough how important the categories "indigenous" and "exotic" are to making sense of nature in Australia.
- Attend carefully to how taken-for-granted imported cultural influences (including technologies) shape interests and form habits. For example, the concept of wilderness can make a virtue of disconnection (Brookes, 2001). Important ways of knowing, such as hunting, have developed around distinctively Australian attitudes to wildlife.

- Attend carefully to how spatial history has distributed interests and knowledge. For example, the communal knowledge of place or natural history that has developed in Australia has been influenced by a distinction between public and private land, and by issues of transport and distance. Areas such as ski resorts concentrate interest and shape ways of seeing (Brookes, 1998).

How might the above three points apply in particular circumstance?

- In the area where I live, former gold seeking and clearing for pasture has left patches of forest along the ridge tops. These forest remnants have been cut several times, and the trees are often coppiced and small. Tree hollows, which are critical for many of the small mammals and some birds, are scarce. Most of the arboreal mammals are nocturnal, and rarely seen. For most of the local community they don't exist. I have attempted to develop a curriculum around learning to "see" the tree hollows and their occupants.
- Because the forest fragments don't fit a common aesthetic preference for large tracts of wild country, preferably with water, walking routes, views and other features, they have not attracted the attention of the urban-based bushwalkers, who, as a group, have been important in shaping nature conservation in Victoria. Moreover the trees seem scrawny and damaged, the vegetation dry and indistinguishable. I have tried to devise experiences that weave knowledge of the hollow trees and small mammals into stories that constitute a relationship with the forest. This is not particularly difficult: finding the trees with signs of occupation, waiting silently in the dark for sugar gliders or tuans to emerge, and joining a project to collectively accrue the stories of many of the trees over time introduces some of the elements of natural history "White" demonstrates. These elements include shaping interests, a growing capacity to make distinctions, not only between species, but between individual trees. They include constructing stories which link knowledge of wildlife with personal experience and attach memories to certain places ("the tree where we saw the seven sugar gliders and spilled the coffee"). They include treating experiences not as episodes, but as part of a relationship, in which knowledge of a place contains memories ("I haven't noticed a geebung growing in this area before") and includes expectations of future visits ("Will the tuan still be there?"). Eschewing spotlighting as a "survey" technique, and instead adopting a more compliant approach (to borrow Livingston's [1981] term) in which wildlife is encountered more on their own terms is a reminder that technologies are cultural, and are not neutral.
- It is important to consider how the forest would benefit from the education of particular groups. I teach future guides and educators. They will introduce "their" trees to a new cohort of students, but will eventually move on. Perhaps it would be best to focus on the families who live adjacent to forest areas, or perhaps the parents of young children. I suspect that the focus should be on local people, but I doubt it should be on school environmental education. Such details

of how and why to intervene in the relationships between a community and its place can't be deduced from generalizations about humans alienated from nature, or trusted to emerge from environmental education templates designed to be implemented without substantial local knowledge. Not only do regional, national, or global environmental influences emerge distinctively in particular locations, but also there are also local issues that may not register at regional, national, or global levels.

## Is There an Easier Way?

To suggest that environmental educators should settle in an area (perhaps for years) before teaching is inconvenient. To discuss whether or not schools are the best place for learning natural history may seem futile for those whose work is confined to schools. And there are other problems to which my reading of White seems to have led me. I will mention two.

First, the question of how a rural population, such as the inhabitants of Greater Bendigo, or Selbourne, should know and experience their region is not the typical Australian environmental education problem. The overall Australian problem is more difficult. Most of the small population live in a handful of large cities (of several millions) on the coast. (In contemporary Australia 85% of the population of 18.3 million live in cities, 60% in just 5 capital cities. Moreover, over 4 million of the population were not born in Australia; most immigrants come to capital cities [Day, 1997; Forster, 1995]). The country is vast and, even making coarse distinctions, contains many different kinds of ecosystems. There are profound discrepancies between the spatial distributions of environmental issues, and of political and economic power—large, concentrated populations influence large, ecologically diverse regions. Personal knowledge and experience of "place" for urban dwellers is by no means confined to cities (most people spend time away from cities), but its distribution is complex, largely unmapped, and shaped by influences such as the formation of national parks, the attraction of the coast, recreational preferences, distance, and the tourism industry rather than educational planning. Far more attention in research and education has been paid to individual episodes of experience, than to the question of how overall *patterns* of experience form knowledge-constituting relationships.

Second, since White wrote *Selbourne*, natural science has been largely professionalized and institutionalized. Especially when approached via formal education (including field trips), nature is encountered through epistemological structures arising from struggles between taxonomists, anatomists, field naturalists, and behaviourists (represented loosely by the museum, the laboratory, the scientific expedition, and the zoo or botanic garden) in the 19th century (Outram, 1996), not to mention subsequent re-orderings around life (as biology), interrelationships (ecology) or evolution (genetics).

These ways of ordering understandings are often internalized and, I believe, very difficult to transcend. Such shifts since the 18th century have not only altered the structure of knowledge and the sources of authority; they have centralized knowledge, and separated the distribution of knowledge (education) from its production (science). Contemplating the development of natural history in terms of *communities generating knowledge goes* against the grain of some deeply embedded habits of educational thought. Future environmental educators will need not only deep personal experience of the places where they teach, but also the ability to deconstruct epistemologies and cultural influences. Hard work, the right attitude, and good intentions will not be enough; environmental education presents a substantial intellectual challenge.

"It is too late to be pessimistic." (N. Faarlund, pers. comm., 2000)

Gilbert White was an optimist but my reading of *Selbourne* is a sobering one. Suggestions I have made for future practice seem unequal to problems I have raised. I don't wish to recoil from the difficulties which environmental education in Australia presents. But any willingness to entertain critical discussion about environmental education in Australia and the magnitude of the problem it faces is itself a kind of optimism; I hope this essay will be read in that light.

## Acknowledgements

This paper was researched and written with the assistance of the Department of Outdoor Education and Nature Tourism, the School of Arts and Education, and the Bendigo Faculty of La Trobe University.

## Notes on Contributor

**Andrew Brookes** is a Senior Lecturer in the Department of Outdoor Education and Nature Tourism, La Trobe University Bendigo. His research interests focus on outdoor education and relationships with place, cultural dimensions of outdoor education, and interdisciplinary perspectives on outdoor education.

## Notes

[1] Actually late 1788; by convention the book was dated the next year (White, 1789/1993).

## References


Allen, D.E. (1976). *The naturalist in Britain: A social history*. London: Allen Lane.

Bellah, R.N., Madsen, R., Sullivan, W.M., Swidler, A., & Tipton, S.M. (1986). *Habits of the heart: Individualism and commitment in American life*. New York: Harper and Row.

Bolton, G. (1992). *Spoils and spoilers: A history of Australians shaping their environment* (2nd edition). North Sydney: Allen & Unwin.

Bonyhady, T. (2000). *The colonial earth*. Melbourne: Melbourne University Press.

Bowers, C.A. (1993). *Education, cultural myths, and the ecological crisis: Towards deep changes*. New York: State University of New York Press.

Brookes, A. (1998). *Place and experience in Australian outdoor education and nature tourism*. Paper presented at the Outdoor Recreation - Practice and Ideology from an International Comparative Perspective, Umeå, Sweden.

Brookes, A. (2001). Doing the Franklin. Wilderness tourism and the construction of nature. *Tourism Recreation Research*, *26*(1), 11-18.

Brookes, A. (In press). Lost in the Australian bush: outdoor education as curriculum. *Journal of Curriculum Studies*.

Carter, P. (1988). *The road to Botany Bay: An exploration of landscape and history*. New York: Alfred A. Knopf.

Day, D. (1997). *Claiming a continent: A new history of Australia*. Sydney: Angus and Robertson.

Evernden, N. (1992). *The social creation of nature*. Baltimore: The John Hopkins University Press.

Fine, G.A. (1998). *Morel tales: The culture of mushrooming*. Cambridge, Massachusetts: Harvard University Press.

Flannery, T. (1994). *The future eaters*. Sydney: Reed New Holland.

Forster, C. (1995). *Australian cities: Continuity and change*. Melbourne: Oxford University Press.

Foster, P. (1993). Select bibliography. In G. White (Ed.), *The natural history of Selbourne* (pp. xxviii-xxxii). Oxford: Oxford University Press.

Giddens, A. (1992). *The consequences of modernity*. Cambridge: Polity Press.

Gould, S.J. (1991). *Wonderful life: The Burgess Shale and the nature of history*. Harmondsworth: Penguin.

Government of Canada. (1996). *The state of Canada's environment 1996*. Ottawa: Government of Canada.

Grove, R.H. (1995). *Green imperialism: colonial expansion, tropical island Edens and the origins of environmentalism, 1600-1860*. Cambridge: Cambridge University Press.

Jardine, D. (1998). Birding lessons and the teachings of Cicadas. *Canadian Journal of Environmental Education*, *3*, 92-99.

Livingston, J. (1994). *Rogue primate*. Toronto: Key Porter.

Livingston, J.A. (1981). *The fallacy of wildlife conservation*. Ontario: McClelland & Stewart.

Low, T. (1999). *Feral future. The untold story of Australia's exotic invaders*. Rinwood, Victoria: Penguin Viking.

Mabey, R. (1995). *The Oxford book of nature writing*. Oxford: Oxford University Press.

Martin, S. (1993). *A new land: European perceptions of Australia 1788-1850*. St. Leonards: Allen & Unwin.

McKibben, B. (1990). *The end of nature*. London: Viking.

McLennan, W. (1998). *1998 Pocket year book Australia*. Canberra: Australian Bureau of Statistics.

Moyal, A.M. (1976). *Scientists in nineteenth century Australia: A documentary history*. Melbourne: Cassell.

Nabhan, G.P., & Antoine, S.S. (1993). The loss of floral and faunal story: the extinction of experience. In S. R. Kellart & E.O. Wilson (Eds.), *The biophilia hypothesis* (pp. 229-250). Washington: Island Press.

Nash, R. (1982). *Wilderness and the American mind* (3rd edition). New Haven: Yale University Press.

Nash, R. (1990). *The rights of nature: A history of environmental ethics* (2nd edition). Leichhardt: Primavera Press.

Orr, D.W. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.

Outram, D. (1996). New spaces in natural history. In N. Jardine, J.A. Secord, & E.C. Spary (Eds.), *Cultures of natural history* (pp. 249-265). Cambridge: Cambridge University Press.

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Schama, S. (1995). *Landscape and memory*. London: Fontana Press.

Secord, A. (1996). Artisan botany. In N. Jardine, J.A. Secord, & E.C. Spary (Eds.), *Cultures of natural history* (pp. 378-393). Cambridge: Cambridge University Press.

Shore, W.H. (Ed.). (1994). *The nature of nature*. San Diego: Harcourt Brace and Co.

Siebert, C. (1993). The artifice of the natural: How TV's nature shows make all the earth a stage. *Harper's Magazine*, 1993 (February), 43-50.

Smith, J.M.B. (1986). Biogeography of Australian flora and fauna. In H.F. Recher, D. Lunney, & I. Dunn (Eds.), *A natural legacy: Ecology in Australia* (pp. 14-30). Sydney: Pergamon Press.

Stewart, F. (1995). *A natural history of nature writing*. Washington: Island Press.

Thomas, K. (1984). *Man and the natural world*. London: Penguin.

Van Matre, S. (1994). The resurrection of Victorian nature study? *Talking Leaves*, (Autumn), 1-13.

White, G. (1789/1993). *The natural history of Selbourne*. Oxford: Oxford University Press.

Worster, D. (1977). *Nature's economy: A history of ecological ideas*. Cambridge: Cambridge University Press.

Worster, D. (1994). *Nature's economy: A history of ecological ideas* (2nd edition). Cambridge: Cambridge University Press.