

Editorial Introduction

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It is ironic perhaps that just as our human made world is saturated with images of non human creatures, the very survival of many creatures we adore, worship, love and sometimes fear are in danger. It would be a stretch to say that the imaging process, extended as it is through a whole range of new and old media technologies, is a direct cause of their decline although some suggest that it does have some responsibility. It is certain though, as scientists now suggest, that the Anthropocene (Crutzen, 2002) is the appropriate term for the era we are inhabiting. It is this very human made nature of our overall global environment, and the negative impacts we are subjecting it to, that is the cause of the today's frightening level and rate of species extinction and habitat destruction. Surely then, given that the imaging process and the nature of our culture are integrally related, it must be incumbent on educators, media and conservation practitioners to engage effectively with the imaging of 'non-human others' to raise awareness and develop understanding of this relentless destruction to make a practical positive difference. This is not to oppose 'progress' and 'development' *per se* or deny the importance of free critical reflection within higher education or public culture but rather to state quite categorically that we can and should make our world in a different way than we are doing at present. We should ensure there is room, life-space, for both ourselves and those non-human animals that adorn our TV screen and lunge at us from the depths of a giant 3D IMAX movie. After all, both non humans and humans are animals living in the real world.

The image based media then, together with our increasingly mediated engagement with the world, is an important part of our informal, and to an extent, formal environmental education. Most of us are more likely to see an elephant on a screen than walking into our city, town or village. Commentators increasingly remark that those of us, particularly in urban areas, are so cut off from the environment and the 'natural world' that we no longer know where the milk we pour on to our breakfast cereals originate. Indeed, a new condition has emerged from within the environmental/nature education discourse, albeit one not acknowledged officially by the medical profession: 'nature deficit disorder' (Louv, 2005). This putative disorder, and associated ignorance, is quite literally dehumanising and environmental educators are quite right to argue that we must somehow reconnect urbanised and media obsessed children and adults with what is commonly held to be the natural world. Only, of course, the natural world is not at all natural even in rural areas dominated by agribusiness and specially designed 'Kodak moments'. It is a fact that we humans are enthusiastic media producers and consumers and many of us like it that way. The screen, large and small, is not only a window on the world but a part of our life-world too and as such should become an important part of what is taught in schools, colleges and universities under the banner of environmental education and, more broadly, education for sustainability.

Acknowledging and developing this is extremely important and has clear implications for what both educators and their students learn together. The media is a space of and for learning. Its contents and indeed its forms have major implications for the way we see and frame the world. Media ecologists have argued for decades that technology shapes both our internal and external environments - 'the medium is the message' as the Canadian Marshall McLuhan enigmatically pronounced nearly fifty years ago (McLuhan, 1994). He had a point as the current revival of academic and popular interest in his gnomonic writings

resonate loudly with the digital revolution, the world of electronic zoos, virtual environments and immaterial non-human others. Environmental and conservation education and practice are entwined with this world and, philosophically by extension, what it means to be a human being. We cannot understand our world, ourselves and our non human cousins unless we understand the media in all its various guises and disguises. The media is an environment too. As Paula Willoquet-Maricondi (2010: 44) writes,

By virtue of being re-presentations of the 'real' world, films are a type of virtual environment that at the same time model for us ways of perceiving and engaging with material and organic environments.

Environmental and sustainability literacy must therefore encompass media literacy and in the process cross other disciplinary and cultural boundaries which we have created to structure our understanding of the world and indeed the world itself. It must include an understanding of ideologies and philosophies, media technologies and communicative processes, social relations and circulations, because as Ivakhiv (2008: 24) writes in his valuable discussion of 'green' film criticism, visual technology

... has the capacity to productively and communicatively mediate between audiences and the world, a world which extends beyond what is immediately perceivable. The choice of what to make available from that world, of how to organize it, where to distribute it, and so on, takes us beyond the notion that media are extensions of perception and into the realm of culture as perception, reception, representation, and interpretation. Raw materials are turned into cultural products, which are distributed and consumed, their consumption leaving behind its effects in society and in the material world. All of this makes up the production cycle.

The ethical and economic relations between the world and its re-presentations have significant political implications that may be veiled by image and narrative aesthetics. For example, the Serengeti is a perfect example of the 'natural world' and for decades organisations like National Geographic have been producing television programmes such as *Great Migrations* (2010), colourful photographic images and glossy articles that reinforce this popular conception. Of course, it isn't a pristine natural environment but one that has been shaped by human action for millennia. Now, hopefully those in formal education studying the Serengeti and other similar wilderness areas will know this but may nonetheless still be drawn into the romance, awe and wonder purveyed by the spectacle of exotic wildebeest, lions and birds of prey. It is also not unknown for educators themselves to use terms 'natural world' or 'the environment' rather uncritically and so help ideologically reproduce the culture-nature dichotomy.

Critically engaging with TV documentaries like *Wings Over the Serengeti* (1995) and more recent productions such as the BBC's *Unnatural Histories* (2011) are opportunities for teachers, students to learn to see the world differently. Unlike a lot of natural history programmes *Unnatural Histories*, a three part series, is complex, reflective and questioning. It is about the nature and the meaning of wilderness or what we have created and constructed to mean wilderness. Looking at the Serengeti, Yellowstone and Amazon the idea that wilderness is a space uncontaminated by human civilization is, except for

white people with cameras or guns, overturned. All of these 'natural' environments have been shaped by human activity and, in the case of the Serengeti, those human activities date back to the time of our earliest ancestors. To see or to imagine wilderness as a land without people, which so many natural history programmes have traditionally done, is a gross distortion of what actually is the case. TV has perpetuated the myth of people-less pristine environments that the National Park and conservation movements established in the late nineteenth and twentieth centuries. However, despite the message that wilderness was never historically a land without people, it should remain a land without industrial exploitation, large scale mineral extraction and the destructive consequences emanating from the relentless drive for corporate profit. The series tentatively confronts the rapaciousness of market capitalism and our seemingly unquenchable thirst for more which, in the end, will certainly mean less. If we don't or can't, Hollywood's dystopic *Soylent Green* (1973), the arid, hot, barren and treeless world of Los Angeles in 2022, is truly the end of our present line and documentary films like *Green* (2009) suggest we are not too far away. We do need to make connections and take practical action to protect other creatures, their habitats and ours, and the media is a tool that can help us do that.

Although there have been some articles that have found their way into environmental education journals that address media related matters, there is a vast literature on conservation and a growing body of academic work on environmental and wildlife filmmaking. Indeed, the largest area of publication on the media and conservation is probably aimed at practitioners of one description or another - professional and amateur filmmakers, photographers, nature lovers, bird watchers, tourists, gardeners as well as the general reader or television viewer. This important literature has been complemented recently by academic conferences such as the Nature Inc series, the *Spectacular Environmentalisms* project (funded by the UK Arts and Humanities Research Council) and increasing interest in bodies such as MECCSA (Media, Communications and Cultural Studies Association) and IECA (The International Environmental Communication Association) and its journal *Environmental Communication: A Journal of Nature and Culture*. This Special Issue will find its own place in the debates for it explores the purpose, potential and limitations of primarily image based media in both formal and informal environmental education as it relates to animal conservation. My own contribution, "Critical practice and the public pedagogy of environmental and conservation media", focusses on the cultural context of informal learning and the some theories, approaches and practices that enable us to make critical sense of natural history film and television. Following Giroux, I take up the notion of film and television practice as forming a public pedagogy but suggest that such a pedagogy requires a critical engagement and interpretative practice that sees beyond the the image, the spectacle and the celebrity mega fauna to the harsh realities confronting many species. Only in this way can a robust educative experience be nurtured and only by being able to recognise that there are alternatives to the current state of affairs can image based media really be put to work in a pro-sustainable and pro-conservation manner. To do this, it will be necessary to challenge any bracketing off of politics from education and to directly challenge the ruling value syntax of economic neoliberalism and value free education.

In "Humans, sharks, and the shared environment in the contemporary eco-doc", Helen Hughes explores how films work affectively and cognitively on their audiences. Applying approaches derived from the discipline of Film Studies she examines the adventure documentary *Sharkwater* in terms of how it might "promote the possibilities for changes to social life which protect or even enhance the environment". The article's research focus is "on understanding the potential for the film frame to raise awareness rather than on testing audience's responses to specific films". Some of the references and the methodologies

employed may be unfamiliar to environmental educators but then the whole field of conservation, sustainability and media education are ones that necessarily transcend disciplinary and professional boundaries. Hughes builds on a discussion enunciated in my own piece but does so with the depth, breadth and thoroughness that offers a clear and precise engagement regarding the textual relationship between media communication and informal and indeed formal education. In conclusion Hughes writes of the film footage of the shark and its own world as being “part of and continuous with the world of the human. It also represents them human world as interconnected and global. The film relies on human cognition to recognize the position of the filmmakers and their intention to persuade, but at the same time to allow the viewer to develop on from the film and perhaps to form a contrary opinion on the basis of what is represented”.

In ‘Harnessing visual media in environmental education’ Elissa Pearson and her colleagues show that the use of visual media can have a significant impact on viewers’ attitudes, values and to some extent behaviour. The authors concentrate on the plight of the orang-utan, a severely endangered species that has been the subject of considerable interest to conservation and campaigning groups, mainstream and independent film and television producers. Following a very useful literature review and an apposite reference to the work of primatologist Jane Goodall who hopes that knowledge will lead to caring and so to practical help for the endangered apes, the study methodically examines the effects of a factual presentation with that of the film *Green* which works very much at an emotive level on a group of university students. There is clear evidence that visual media can have significant pro-conservation effects. However, the article is not without its caveats and qualifications for the authors write, it is ‘important to continue work to address the barriers that prevent intentions from translating into behavioural action. The large discrepancy between the participants reporting an intention to change their behaviour and those who did so suggests significant barriers currently exist’. Human demand for palm oil products will mean that it is quite likely that the orang-utan will be the first of the Great Apes species to become extinct in the wild but if this state of affairs is to be avoided campaigners, educators of all descriptions, must develop multifaceted strategies that will quickly influence governments, corporations and consumers.

Bruce Farnsworth takes still photography as the topic of his article. In his “Conservation Photography as Environmental Education: Focus on the pedagogues”, he explores the actual and potential role of conservation photographers as environmental educators with their work being an important resource in classroom based study. His discussion is directly drawn from his experience as an “embedded researcher-photographer” working with a small group of full time photojournalists. His research methods include semi structured interviewing and participant observation of actual photographic assignments which leads to some interesting findings on the work, cultural understandings and politico-aesthetic judgements of professional image makers. His four part thematic analysis is richly detailed and theoretically informed. In discussing specific images, some reproduced in the article, he shows how image based work may be used pedagogically arguing that if “the work of conservation photographers is to be meaningfully integrated into schools, design and environmental education training should be included throughout the course of teacher training and professional development to help them scaffold student proficiencies in visual literacy”. This is absolutely necessary if students as well as general readers of such magazines as *National Geographic* are to fully understand the ideological thrust of much mainstream commercial natural history publication and the editors’ de-facto function as “consulting educators”. Indeed, Farnsworth writes, “I would like to challenge editorial outlets working in nature and environmental themes to foreground the full meaning of images, to demand captions that describe responsible content and entertain the photographer’s interpretive message

in adjoining text. With the exception of a few outlets that now include the various media of the ILCP [International League of Conservation Photographers] and like-minded parties, few publications allow readers to share latently in the embedded instruction of the photographers”.

Gavan Watson also explores the role of photography but in the context of the hobby practice of ‘birding’ increasingly, it seems, informed by the use of digital social media. There are 48,000,000 birders in the United States, contributing a total of \$82 billion dollars to the American economy, and given this it seems strange that human beings are losing contact with nature and ought to get out more. Watson, in effect, puts this notion to the test. The data presented, analysed and discussed in “Field birding and digital objects: Immaterial technologies and their implications for one practice of coming to know the more-than-human” is drawn from a large qualitative research project studying a variety of different birders. Importantly, Watson notes, that while “field birding is largely an activity of finding, watching and taking record of wild birds, the birding experience is never an unmediated activity between birder and bird; to accomplish the tasks of birding, birders use a variety of technologies”. Traditionally bird identification has been a hybrid practice combining experience, sensory information and ecological research. However, digital technology, the Internet and LISTSERV networks are changing things. The ease and relative inexpensive of taking countless digital photographs is causing a shift in the preferred technology used by the birder - the camera is replacing binoculars. Through a judicious use of quotations from respondent interviews, Watson vividly describes the birders’ brave new world with consequences that lead the author to advocate “a kind of intellectual monkey-wrenching” arguing that a “critically informed environmental education has a role to play in the interrogation of the use of a technology for educational means”.

In their “Exploring Use of New Media in Environmental Education Contexts: Introducing Visitors’ Technology Use in Zoos Model” Victor Yocco and his co researchers address the twin controversies of zoos and “ubiquitous” media technology in environmental/conservation education practice . Touch screens, smartphones and other technological enhancements are now a common sight in many zoos but the authors put this in perspective by discussing the relatively slow evolution of the zoo as both an entertainment and educative institution. They present two major empirical case studies: first, the methodologies and findings of *Call of the Wild*, a collaborative project funded by the US National Science Foundation involving the University of Florida’s Museum of Natural History; and second, *Project Dragonfly* at Miami University with Cincinnati Zoo and other collaborators, also funded by the National Science Foundation. The authors’ conclusions may not be all that welcome to technology enthusiasts writing, “we cannot say conclusively that use of technology-enhanced media increases attitudes, knowledge, awareness, or behaviours around the various topics presented by zoos. (...) It may even hold true that technology detracts from certain learning situations”. Many visitors want to get away from the technologies dominating their everyday life and when with family and friends wish to share the experience of seeing a live animal in the flesh although many zoo managers and education officers continue to view media technology as an important element of their interpretative strategies and educational practice. The authors remind us though that learning requires reflection noting, “it is unclear if the current use of technology by zoos allows for or encourages visitors to engage in reflection after use”.

Marcelo Bizzerril’s contribution to the Special Issue, “Linking community communication to conservation of the maned wolf in central Brazil”, explores a multi dimensional educative project that involved a communal production of a book, the deployment of a traveling environmental

cinema project called *Cine Lobo*, and community based training courses all designed to help protect the beautiful maned wolf in the Serra da Canastra National Park. This is education not *about* or *for* conservation and sustainability, but education that is integrally part of a real attempt to do something practical and effective. The communication, community participation and conservation education activities discussed are informed by a clear understanding of the socio-economic reasons for the wolf's decline in numbers. The problem is complex but essentially one where the interests of the human population have developed in such a way as to conflict with those of the non human cohabitants. The inspirational ideas of the critical educator Paulo Freire whose view of learning is one of liberation and empowerment becomes of paramount importance in a discussion that shows how intra-communal learning and emotional engagement can help transform a perception of a feared predator from one of threat to a genuine respect and admiration. The education and research project results are encouraging. Many community members learnt to take an active role in conservation and, as a consequence, the transformation of their own environment. The project also boosted the self-esteem of the researchers themselves. Bizzerril writes, "there is no doubt that the activities developed changed the original course of the project and even the researchers' very idea of conservation". The videos used in the project are currently available on Vimeo although readers should note the language used throughout is Portuguese with no English subtitles.

Howard Drossman's "The environmental education through filmmaking project" is a case study showing how making environmental videos with "at risk" high school students may enhance their environmental literacy. The project encouraged students to develop and integrate a range of literacies - environmental, cultural, critical and functional/media. Drossman recognises the important role media plays in young people's lives and how practical film making activity nurtures learning, self-belief and social engagement. Focus group interviews were conducted with the students who were not unaware of the relationship between human action and the degradation of the planet. Much of the information they gained was from the television but the influence of school, family and friends were also important elements in their environmental socialisation. Indeed, although the project was quite modest in terms of time and perhaps effect - the films the students made had no designated audience as such - Drossman makes two clear points in his conclusion. Firstly, that environmental socialisation should be conceptualized holistically; and second, "filmmaking is an inadequately researched environmental education pedagogy, but one with great potential for developing environmental literacies". **The final article is by Gwen Arnold, "Enhancing college students' environmental sensibility through online nature journaling". She takes as her starting point Richard Louv's notion of nature deficit disorder. The research investigates a project involving sixty young people on an introductory environmental studies course in a public university in the American mid west. The students are adept at using new media devices so it was expected, or at least hoped, that online journaling could be productively integrated into a learning programme that emphasises the importance of the outdoors. Would online journaling about getting out in the woods help reduce the disconnect between young people and nature? In addressing this question, Arnold directly addresses the suspicion and reluctance of some environmental educators to acknowledge the significance, if not ubiquity, of digital media in contemporary culture. She writes, "the project appears to have met its goal of getting students to spend an additional 15 or more minutes outside weekly" and that nearly three quarters said it helped increase their environmental awareness. However, Arnold is also concerned over the long term nature of these identified changes in attitudes and behaviour as well as their links to typical classroom pedagogic practice. Where the media is concerned the educators may themselves have to be educated.**

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