

Advocacy in conservation science: an introduction to the Special Issue

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Advocacy:

- (1) ‘public support for or recommendation of a particular cause or policy’ ([Oxford Living Dictionaries 2018](#));
- (2) ‘public support of an idea, plan, or way of doing something’ ([Cambridge English Dictionary 2018](#));
- (3) ‘an act of pleading for, supporting, or recommending; active espousal’ ([Macquarie Dictionary 2018](#)).

Advocacy:

- (4) something that many conservation biologists have to struggle with over the course of their careers.

To some conservation biologists, advocacy is an action to be avoided at all costs. To others, it is not only implicit within the discipline of conservation biology but is an obligation that must be fulfilled by citizens in a civil society who hold specialised technical knowledge – and for the science and practice of nature conservation, that means conservation biologists. This Special Issue addresses the tension between the two positions and seeks to provide guidance to conservation biologists as they grapple with how to conduct their research ethically and to communicate its findings effectively, not only to their colleagues but to policy makers and the general public. To those who hold the view that advocacy is a scientist’s social responsibility, it should also help them find ways to further the cause of conservation biology – the maintenance of life in all its wonderful and irreplaceable variety – while maintaining their professional standing among peers and colleagues.

Although advocacy has always been a contested aspect of conservation biology ([Nelson and Vucetich 2009](#); [Baumgaertner and Holthuijzen 2017](#)), over the past few decades three factors have forced a more urgent assessment of its position within the discipline. First is the recognition that a relentless and all-encompassing attack is being mounted on the natural world by the human species ([Sale 2011](#); [Recher 2017](#); [World Wildlife Fund 2018](#)). The human population is increasing by more than 1% per year (equivalent to an extra ~80 million people annually) and, with increasing global affluence, it consumes ever-increasing amounts of the Earth’s resources ([Dovers and Butler 2018](#)). Often this growth is hidden under the mantle of ‘sustainable development’. Many conservation biologists believe the concept of sustainable development to be, at best, suspicious and, at worst, dangerous (e.g. [Calver and Wardell-Johnson 2004](#)). [Campagna et al. \(2017\)](#) went further, arguing that sustainable development is

simply *deus ex machina*, the inept plot device originally used in Greek tragedy that invokes unnatural and irrational processes to avoid tackling the central problem, in the current case that of excessive resource exploitation.

The pessimistic concerns of conservation biologists are not merely personal feelings, but are increasingly reflected formally, in the published literature. A good example is provided by the term ‘Anthropocene’, a word coined at the turn of the 21st century in recognition of the unprecedented impact modern industrial society is having on the Earth and its biota ([Crutzen and Stoermer 2000](#)). The impact is omnipresent and of unparalleled complexity and magnitude ([Corlett 2015](#); [Johnson et al. 2017](#)), arguably exceeding in significance the megafauna extinction initiated by humans in the late Quaternary approximately forty thousand years ago ([Sandom et al. 2014](#)). In fact, [Campagna et al. \(2017\)](#) coined the term ‘Crisis of Life’ to describe the present-day destruction of species, habitat loss, over exploitation and climate change. Paul Ehrlich had used the metaphor of popping rivets on a spaceship over three decades ago to point out the looming calamity ([Ehrlich and Walker 1998](#)). The concept of the Anthropocene is now so well entrenched in scientific discourse that there are journals with the word in their titles, such as *Anthropocene* and *The Anthropocene Review*.

Second is the recognition that the assault on nature is deeply embedded within the existing ideological, political and economic system. Many now acknowledge that conservation has taken an increasingly anthropocentric direction ([Recher 2015](#)), one in which ecosystem services and other fictitious commodities are the pre-eminent concepts that direct government attitudes to the natural world and their decisions about ‘investment’ in scientific research and nature conservation (e.g. [Brockington 2011](#); [Boon and Prahalad 2017](#)). Some ecologists have recognised ecosystem services as the Trojan Horse whereby the destructive forces of capitalism can sneakily infiltrate conservation biology ([Wunder 2007](#)). Capitalism, most especially in its post-1970s aggressively neoliberal variant, has been on the ascendency for over four decades and the natural world, as a consequence, is in retreat, if not on the run ([Peck and Tickell 2002](#); [Büscher et al. 2012](#); [Moore 2017](#)). The recent claim – subsequently withdrawn – by the petrochemical company BP that, as reported by *Sydney Morning Herald* reporter Nicole Hasham (2018), an oil spill would be ‘socially acceptable’ and that ‘coastal towns would benefit from an oil spill in the pristine Great Australian Bight because the clean up would boost their

economies' is a case in point. Indeed, the neoliberal view of the world has been so triumphant that nearly two generations of young people, including those studying ecology, conservation biology or environmental science at university, recognise no other model of the world (Moore 2017). Nor do most decision makers (Boon and Prahalad 2017).

Third, it is apparent to many conservation biologists that they have to function in a political system that has little or no respect for science in general or for environmental science in particular. On the one hand, pitifully small amounts of funding are available to scientists for conservation research, be it 'pure' or 'applied'. Howell and Rodger (2018), for example, showed that in Australia less than 1% of the funds spent by the Australian Research Council (the prime, very nearly the only, source of substantial Commonwealth Government research funding for non-medical science) were allocated to conservation research. On the other hand, huge amounts of funding are available for politically motivated 'green washing' and nation-building exercises masquerading as environmental rehabilitation. The influence of empirical ecological science in the current political system is demonstrably feeble, as illustrated by attempts over the past decade to rehabilitate the streams, floodplains and wetlands of the Murray–Darling Basin in south-eastern Australia through environmental flows (Bunn 2017; Walker 2019). I'll outline the reasons for my taking this position next, as it provides a revealing case study that informs the entire debate about whether conservation biologists should engage in public advocacy to pursue conservation goals.

The Murray–Darling Basin Plan was adopted by the Commonwealth Government in 2012, which earlier had been advised by environmental scientists (including conservation biologists) that up to 7600 GL of water were required to be clawed back from extractive use (chiefly irrigation) and returned to the rivers as environmental flows (Cruse 2012). The volume was reduced to 3200 GL when the Basin Plan was formally released in 2012, and subsequently to an even smaller 2750 GL, far less than the 3856 GL (high uncertainty) and 6983 GL (low uncertainty) calculated as being required for effective environmental rehabilitation (Wentworth Group of Concerned Scientists 2017). Williams (2017, p. 80), a resource scientist, commented that the science to support the reduction in diversion limits was 'a mystery'. Meanwhile, in a barely publicised action, permissible annual groundwater extractions were increased from 1786 GL to 3334 GL, an increase of >1500 GL. Most recently, the so-called 'Sustainable Diversion Limit Adjustment Mechanism', invoked to prevent Victoria and New South Wales from abandoning the Basin Plan in 2018, saw the 2750 GL reduced even further, on the assumption that 'complementary works and measures' can replace environmental flows. In essence, the target for water recovery has thus been cut even further and is now just 2145 GL (Angus Webb, pers. comm. 2 November 2018). The overall result of all this manoeuvring by decision makers has been a trivial reduction in the amount of water extracted for human use from the Murray–Darling Basin, a part of Australia that for decades has been recognised as chronically over developed with respect to irrigation diversions (Smith 1998). Not only have pitifully small volumes of water been clawed back for the environment, but the economic cost of the associated green washing has been enormous.

Since 2002, the Commonwealth Government has spent or plans to spend more than AU\$15 billion on water 'reform' and irrigation 'renewal', mostly in the Murray–Darling Basin (Grafton and Wheeler 2018). The environmental returns have been trivial: Lee and Acev (2009), for example, concluded that the irrigator-friendly focus on water buy-backs to purchase water entitlements from irrigators resulted not only in a squandering of scarce financial resources but in pitifully few positive environmental outcomes on a whole-of-basin scale. The title of their paper reflected this: 'A river of funding, a trickle of achievement'. The purchases, however, have proven a windfall for irrigators. The conversion of an existing water licence to a tradeable private property right for water '... meant transferring a huge amount of wealth from the public sector to the private sector' (Williams 2017, p. 79), with the result that '... many of the gains from water recovery have accrued as private benefits to irrigators' (Grafton and Wheeler 2018, p. 3.1). Moreover, the cost per megalitre of water 'recovered for the environment' under the various irrigation renewal and buy-back projects has been as high as AU\$22 143 per ML and commonly exceeds AU \$5000 per ML (Grafton and Wheeler 2018, table 3).

The recent public statements from three groups of eminent scientists and resource economists as to the status and future of the Basin Plan (Wentworth Group of Concerned Scientists 2017; Bjornlund *et al.* 2018; Grafton *et al.* 2018) illustrate the depth of concern among academics as to how the Basin Plan has been implemented and the fact that it has largely failed in its original mission. Meanwhile, the irrigation lobby has demonstrated immense influence and political finesse, via skilful and overt advocacy, in overturning almost all the elements of the Basin Plan that involved substantial environmental rehabilitation (Cruse *et al.* 2011); indeed, Grafton *et al.* (2018) argued that most of the money spent in the Basin Plan over the past decade has been used to subsidise irrigation infrastructure rather than to address chronic environmental degradation. The academic assessments have been matched by numerous investigations by the mass media, investigations that have revealed a recurring pattern of ideological bias and, in the most serious charges, of allegations of illegal behaviour and corruption. Examples include recent exposés on the ABC television program *Four Corners* (Besser 2017) and on the ABC radio program *Background Briefing* (Dingle 2018).

This overview of the problems with the Murray–Darling Basin Plan provides an illustration as to why many conservation biologists believe that public advocacy on conservation subjects is needed now more than ever before. A foundation of their position is that traditional communication approaches have not worked and the natural world continues to be degraded at an alarming rate, with empirical science playing a trivial role in decision making. (Additional evidence regarding the poor reception of scientific input by decision-makers is provided later in this introduction.) There are many positions on how scientists could – or should – advise on complex matters such as nature conservation and interact with policy makers (e.g. Spruijt *et al.* 2014; Carroll *et al.* 2017; Coreau *et al.* 2018). Not unexpectedly, the topic of advocacy is contentious and has attracted considerable debate; workshops have been held, editorials written, papers proffered, and the topic debated at length in the learned literature (see Boon 2019 for an introduction to

this literature). Complicating the matter is that, as *Scott et al. (2007)* pointed out, advocacy is a continuum, not a presence/absence dichotomy: one scientist's advocacy is another's professional obligation; one scientist's provision of a considered perspective made during a community meeting is another's professional negligence and abrogation of duty.

Even so, it is possible to discern at one end of the spectrum those conservation biologists who argue that a traditional approach to the undertaking and communication of conservation science is not only adequate but optimal; this conventional approach requires that scientists undertake their research quietly, mostly 'behind closed doors', and limit the communication of any research findings (and especially their wider implications) to professional advisory panels which may – or may not – end up informing government policy. Often these panels require strict confidentiality. Advocacy is frowned upon, primarily on the assumption that to engage in any form of advocacy, and especially overt advocacy to the general public, on a specific conservation subject threatens the (assumed) privileged position of scientific information in deciding broader policy issues. It is claimed too that advocacy inevitably leads to conservation science being politicised, which is thought to be an undesirable outcome. To me, the notion that conservation science is not already highly political and value-laden is irremediably naive. Some opponents of advocacy claim that conservation biologists are no better qualified to advise on conservation questions than anyone else in the community, and this to me also seems a specious position. Some worry too about a possible conflation of advocacy with individual self-promotion. Although this 'conservative' approach is often assumed to be the ideologically-free interpretation, it is worth noting that in fact it is just as bound to ideology as is the alternative.

Opponents to the traditionalist approach believe that advocacy is an integral component of the discipline of conservation biology and that, given the complex interaction of epistemic and non-epistemic values in conservation science, explicit support for the natural world is not only required but is unavoidable by conservation biologists. Some commentators have argued that it is socially negligent for conservation scientists, as members of a civil society who possess specialised technical knowledge, not to involve themselves publicly in advocating for the natural world and in agitating for ecologically (and socially) sustainable processes and outcomes. For scientists who support the more traditional approach and are therefore opposed in principle to any form of advocacy, this of course is apostasy. But those with a stronger social conscience are often swayed by such arguments. *Whitten et al. (2001)*, for example, queried the very point of conservation biology as a scientific discipline if it did not help limit environmentally destructive activities such as the logging of tropical rainforests. I believe we can go even further along this line of reasoning. Writing on a quite different topic in 1967 (the music of Bob Dylan), the social critic Ellen Willis concluded that we were '... like a housewife dusting her furniture while a tornado wrecks the house' (*Aronowitz 2011*, p. 2). I and many colleagues believe that modern-day conservation biology is in a similar predicament: the tornado is the global destruction of the natural world and the dusting of the furniture is the narrow academic pursuit of the discipline of

conservation biology. Again in words used much earlier and in a different context by Willis, many feel a 'deepening sense of incipient disaster' (*Aronowitz 2011*, p. 27) and are unsure how to react (e.g. *Sale 2011*).

To a large degree the willingness (sometimes reluctantly) of many conservation biologists to engage in public advocacy derives from the recognition that the conventional approach to communicating results and outcomes has failed. In part this is because the language of traditional scientific papers is not 'user friendly' (*Olson 2009*) and this opaqueness often extends to communication with policy makers (*Rose et al. 2018*). But an even larger problem is that the conventional approach assumes that policy makers are open to reasonable argument and that scientific information holds a privileged position in what is a non-politicised decision-making process. The earlier overview of how rivers have been managed in the Murray–Darling Basin shows unequivocally that this is a false assumption, and the way the volume of water to be recovered for the environment has been cut from nearly 7000 GL to just over 2000 GL is a specific case in point.

Moreover, the extent to which the topic of environmental water had been politicised is demonstrated by the statement from the 2015–2017 Commonwealth Minister for Agriculture and Water Resources, Barnaby Joyce, to a farming audience in a hotel in rural Victoria in mid-2017. The minister admitted that the National Party (the junior member of the coalition Commonwealth Government) took responsibility for water from the environment portfolio and into his agriculture portfolio to advance the interests of irrigators: 'We've taken water and put it back into agriculture so we can look after you and make sure we don't have the greens running the show basically sending you out the back door' (*Hannam 2017*). This statement was followed up by Joyce in August 2018, when as Special Envoy for Drought Recovery (having lost his ministerial position following, among other matters, an affair with a staff member) he called for the Commonwealth Government to 'borrow' water from the pool of environmental water to use in irrigation and other farming activities, '... water that is going to the environment is going past the irrigation properties that could grow fodder to keep cattle alive' (*Worthington 2018*). The comment sparked outrage from the outgoing Commonwealth Environmental Water Holder and from main-stream environmental groups such as the Australian Conservation Foundation (*Hannam 2018*).

It is difficult to see in this regime of highly partisan decision-making how or why professional, highly skilled ecologists or conservation biologists could expect to receive a fair and unbiased hearing by those given the authority to manage water resources. The example I have used here relates in particular to river management, environmental flows and the rehabilitation of degraded aquatic systems. This is because these are the ones I, as a wetland ecologist, know best. But an equally strong case could be mounted if we were to examine the clearance of native vegetation in Australia, which proceeds under ministerial sanction regardless of contrary scientific advice (*Maron and Catterall 2016; Saunders 2019*), or the cruelty involved in the live-animal export trade, a business that continues regardless of the counsel repeatedly provided by concerned veterinarians and recently exposed in the Moss review, an independent

investigation commissioned by the Commonwealth Department of Agriculture only following public outrage and a change in ministerial responsibilities (Bourke 2018; Kotsios 2018).

How then should conservation biologists function within a system that (1) places little value on scientific advice and (2) is openly ideological in its opposition to nature conservation? The fundamental choice before us is how to participate in the struggle to conserve biodiversity and to maintain the ecosystem functions on which we all depend while maintaining our scientific integrity. Individual scientists will have to find a personal solution to the problem, for it is clear that one blanket prescription will not work. I am hopeful that this Special Issue in *Pacific Conservation Biology* will provide some enlightenment on how conservation biologists can function effectively in such a world.

The Special Issue brings together nine papers (plus this introductory editorial) that address the topic from a wide variety of angles. It begins with my contribution, which introduces the general topic of advocacy and then examines the more common arguments for and against public advocacy by conservation biologists. It sets the scene for subsequent contributions with the recognition that ‘An analysis of both positions [i.e. for and against advocacy] is required since, as Nelson and Vucetich (2009) pungently observed, refuting the arguments against advocacy does not *ipso facto* represent an argument for advocacy’ (Boon 2019, p. 7). I conclude that conservation biologists must skilfully manage the epistemic and non-epistemic components of their work, and in doing so it is likely that many will find a social obligation to advocate for selected conservation outcomes.

Harry Recher reaches a similar conclusion in his paper, but extends it further into the social and economic realm, arguing that ‘Conservation scientists need to be public advocates for the creation of economies that are ecologically sustainable’ (Recher 2019, p. 22).

Jamie Kirkpatrick and coauthors examine the environmental impacts of salmon farming in Macquarie Harbour, Tasmania and the role played by government-funded research in describing those impacts and devising ameliorative strategies. They conclude that ‘...the science related to the environmental impacts of an industry needs to be undertaken by scientists in secure positions funded independently of industry and government’ (Kirkpatrick *et al.* 2019, p. 26). Pat Hutchings addresses a related matter: why independently funded biologists in secure jobs need to advocate for an increase in the resourcing of a fundamental part of conservation efforts, taxonomic research (Hutchings 2019, p. 34).

Angela Wardell-Johnson and coauthors take a quite different approach, using semantic analysis to examine wildlife management in World Heritage sites, taking the Dingo (*Canis lupus ssp. dingo*, Family Canidae) in K’gari-Fraser Island on the mid-Queensland coast as a case study. They make the critical point that ‘In conservation advocacy, stakeholder consultation is complicated by the interested parties being non-human animals, plant species or broader environments. To advocate on behalf of an animal, conservation advocacy is often dependent on research conducted by scientists because animals cannot speak for themselves in a shared language’ (A. Wardell-Johnson *et al.* 2019, p. 37).

Linguistic analysis also forms the core of the contribution from Grant Wardell-Johnson and coauthors. They analysed a cross-section of literature (63 papers, 118 statements) published on the tall forests of south-west Western Australia over nearly two centuries of reporting, in order to identify the values that have been used to frame advocacy for one management position or another (G. Wardell-Johnson *et al.* 2019, p. 50).

The topic of animal welfare and its relationship with environmental management is taken up again in the essay by Daniel Lunney. The relationship between nature conservation and animal welfare is highly contentious (e.g. Sagoff 1993), and those concerned with animal rights have a strong record in overt, public advocacy. Lunney provides a critique of *Zoopolis: A Political Theory of Animal Rights* (Donaldson and Kymlicka 2011) and concludes that both groups are ‘...interested in animals, care about their future, and are fighting a losing battle to hold off changes to habitats and ecosystems that reduce the capacity of populations of native animals to survive. In short, they also believe that the life of animals is more important than the ever-expanding human impact on our planet’ (Lunney 2019, p. 72).

Thus far the contributions have taken a considered but generally ‘pro-advocacy’ position. The next two strike a note of caution, and address possible negative consequences of undertaking public conservation advocacy. Hugh Finn looks at the risk of action for defamation if advocates engage in *ad hominem* criticism (Finn 2019, p. 92). Along a related theme, Brian Martin examines the strategies that advocates can take to avoid unwanted consequences of taking public stances on controversial topics, including the possibility of financial attack and of loss of employment (Martin 2019, p. 105). Both are topics that scientists are unlikely to consider in their everyday practice, but which they neglect at their peril if they opt to undertake public advocacy, especially if their comments are contrary to the *status quo* and question positions adopted by current holders of power (which they almost inevitably will, otherwise public advocacy would not be required).

I believe that the various contributions provide an essential background to help conservation biologists navigate the treacherous waters of public advocacy. Regardless of the personal decision a conservation biologist comes to regarding the dilemma of undertaking public advocacy, it is paramount we remember that scientists are, like other members of our society, human. We cannot expect from our colleagues (or, indeed, from ourselves) perfect judgement or fault-free performance all the time. Tolerance is required across the divide between those who decide to engage muscularly in public advocacy and those who decline to be involved. The conclusions reached by barrister and author of the well known Rumpole series of books, Sir John Mortimer, are apposite (Mortimer 1994, p. viii):

Throughout these stories I have been anxious to make it clear that judges and lawyers are not all wise, infallible and trustworthy but as vain, insecure, sometimes as prejudiced, and often as foolish as the rest of us.

The same holds for conservation biologists, whether they are public advocates or not. Salvation from hubris may lie in the fact that good science is self-correcting, and so should be any public advocacy we participate in.

Conflict of interest

The author expresses no conflict of interest.

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