

## Editorial

# When Science Meets Advocacy

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The cover picture on this issue, and the essay that describes the Peruvian and global context for the picture, raise questions about the human and environmental consequences of industrial society's unquenchable thirst for fossil fuels. They also, however, raise a profound question that goes far beyond the bounds of the health and well-being of marginalized people in the neotropics: what is the relationship between science and advocacy?

Progress in science depends on the accurate gathering of evidence and its free sharing with—and being challenged by—other people of good will. The great strength and resilience of the scientific enterprise lies in this openness to evidence and challenge. But when is there enough evidence to act? When is it incumbent upon scientists to urge action, to protest, to engage politically, to act themselves? Any of us who have investigated disappearing species, global climate change, environmental degradation, social injustice, and public health have had to face this conundrum. When do scholars, like journalists in a war zone, drop the scientific camera and run to save the child, the species, the world? The dilemma goes to the heart of what it means to be a scientist, and what it means to be human. There is no easy solution.

Some of our colleagues have argued that science and advocacy need to be kept clearly separate, so as not to compromise the collective unwavering, observant eye, so that scientists can bear witness, in some dispassionate, disinterested way, to the state of the world. Others, like Funtowicz and Ravetz (1993), have argued that we are

facing entirely new problems where “facts are uncertain, values in dispute, stakes high, and decisions urgent” (p. 44). What is needed, they argue, is a new kind of science, which they call post-normal, which brings together public engagement and science in new and challenging ways, so that we can solve the distressing problems of our age.

This debate reaches into the mainstream of conservation biology and health, fields of science that are, by nature, applied studies of problems affecting humans, ecosystems, and the environment. In conservation biology, an increasing number of scientists have begun to turn their science to advocacy, becoming the “scientist-advocates” that were highlighted in an article in *Science* in 2000 (Brown, 2000). As many governments and non-governmental organizations seek to better integrate science and policy, the issues raised by this interface need to be more fully and openly debated, so that science is used to make effective change, but is not compromised by ideology in the process. The career structures that most academic scientists pursue are not well-suited to dealing with these issues, but with the support of some senior ecologists, young scientists are beginning to take this career path seriously. In Europe, the Joint Research Centre (JRC) in Ispra, Italy, developed the InSCightsLab (<http://www.alba.jrc.it/ibss/>). Building on a workshop in 2003, and a book that emerged from it (Pereira et al., 2006), the JRC has taken a lead in building a “Worldwide Virtual Network of Young Researchers Working on Science and Society Issues”; in New Zealand, the Land Care movement has taken on this role (<http://www.landcareresearch.co.nz>). In the United States, training programs such as the David H. Smith Fellowships ([Published online: February 13, 2007](http://</a></p></div><div data-bbox=)

www.smithfellows.org), and the AAAS Science and Technology Policy Fellowships (<http://www.fellowships.aaas.org>), have furthered the discussions and the skills needed for scientists to engage effectively in them.

But how can scientists reach beyond reductionism and hypothesis testing to address a key policy issue without damaging their scientific credentials? Some have taken the tack of publishing articles calling for an end to debate over an issue and a time for action. For example, in Tasmania, Australia, the endemic and charismatic keystone species, the Tasmanian devil, is severely threatened by an outbreak of facial tumor disease. The causative agent of this is still debated, although all the evidence points to it being a transmissible clonal tumor cell line. While the debate over its cause continues, two leaders in this field have argued that action—in this case the ethically charged strategy of culling affected individuals and removing the newly-introduced red fox—needs to be taken right away (McCallum and Jones, 2006). They provide compelling evidence that knowing the identity of the causative agent beyond reasonable doubt is irrelevant to the outcomes of this action in this case. Similarly, for amphibian chytridiomycosis, a fungal disease causing declines in a number of regions globally, the causative agent is known, but the underlying reason for its emergence is debated. In a recent article, a group of scientist-advocates have called for urgent, emergency measures to captive breed, in situ, amphibians at high risk of extinction (Mendelson et al., 2006a), even though the underlying causes are complex and are unlikely to be addressed by this measure (Mendelson et al., 2006b; Pounds et al., 2006).

With this cover art, cover essay, and editorial, we hope that *EcoHealth* and our new association (<http://www.ecohealth.net>) can play a central role in these debates. We are welcoming scholarly submissions from those in our extended community who have wrestled with these questions, and how they have resolved them. This includes those of us whose advocacy is limited to our choice of issues to study, and those of us to whom advocacy is our goal. We do not expect that we will resolve the issues. We do hope that we can bring into the open a reasoned, passionate, and scholarly debate.

## REFERENCES

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