Learned Discourses

Timely Scientific Opinions

Intent. The intent of Learned Discourses is to provide a forum for open discussion. These articles reflect the professional opinions of the authors regarding scientific issues. They do not represent SETAC positions or policies. And, although they are subject to editorial review for clarity, consistency, and brevity, these articles are not peer reviewed. The Learned Discourses date from 1996 in the North America SETAC News and, when that publication was replaced by the SETAC Globe, continued there through 2005. The continued success of Learned Discourses depends on our contributors. We encourage timely submissions that will inform and stimulate discussion. We expect that many of the articles will address controversial topics, and promise to give dissenting opinions a chance to be heard.

Rules. All submissions must be succinct: no longer than 1,000 words, no more than 6 references, and at most one table or figure. Reference format must follow the journal requirement found on the Internet at http://www.setacjournals.com. Topics must fall within IEAM’s sphere of interest.

Submissions. All manuscripts should be submitted online at http://ieam.allentrack.net. Alternatively, submissions can be sent via email as Word attachments to Peter M Chapman (pmchapman@golder.com) or to IEAM (ieam_editor@setac.org).

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WHO SHOULD VALUE NATURE?

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Environmental policy and legislation are interventions into the ways that we live and do business for the sake of protecting natural resources, the quality of the conditions in which we live, and biodiversity. They are justified to the extent that we value the benefits that we derive from what is protected to a greater extent than the costs that we incur in achieving them. Put in this way, human values are located, properly, at the center of decision making about the environment (see also Chapman 2007). However, this human-orientated approach also raises some challenging questions about how nature is valued and by whom. These are the questions that I explore further below, especially in the context of policy that addresses chemicals and nature. My points are that: Environmental policy should be based on public values; these should be informed by natural science; there are dangers of expert values overwhelming decisions in situations where there are complex interactions between contaminants and ecosystems; we need better forums for handling these complexities.

To summarize the approach a little more precisely, a change in ecological benefit (B) from an intervention, for example by restricting the production and use of a chemical, is some function of the likely ecological impact avoided in some part of nature (E) and what value (V) is put on what is protected (V/E). So simply, \( B = f(E \times V) \). The costs (C) of the intervention are a function of producer and consumer effects of losing a quantity of the chemical (-\( \Delta Q \)). So again simply, \( C = f(-\Delta Q) \). From an economics standpoint, B has to exceed C to justify an intervention, otherwise society loses and this is decided by a cost-benefit analysis (CBA).

This rationale emphasizes that risk assessment is an important basis for CBAs. Even though E might be expressed in a.