

Comments from Members and Consultants of the SAB Committee on Valuing the Protection of Ecological Systems and Services (C-VPES) on the 3/09/07 draft report for discussion at the 4/10/07 C-VPES public teleconference call.

Comments received as of 8:30 a.m. Tuesday, April 10, 2007.

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**A. Economic Valuation for National Rulemaking (Part 2, Section 5), pp. 81-108**

Comments from Bill Ascher

A general comment about what this very cogent section does not directly address: In addition to all the correct admonitions to include ecological/biophysical models, and all the caveats about how difficult this all is, should there be a discussion of how to handle the (perhaps) low but nontrivial probability that really nasty pathogens would be released by CAFOs and/or aquaculture operations, and these probabilities ought to be represented in the analyses? This is a very tough problem for analysis, because low-probability, high-cost outcomes are difficult to assess in terms of both estimating the probabilities and valuing the outcomes; therefore they are often simply left out of the analysis. No wonder the CAFO and aquaculture bca’s seem so weak in terms of justifying the rules.

Comments from Ann Bostrom

This section is well organized, covers important ground, provides a good overview of the role valuation plays and could play in national rulemaking, and makes many good suggestions. In the current version, it’s a little hard to read the section because of all of Kathy’s questions (which look like good questions to me). Is there a more recent version that incorporates those responses? If so, these comments may be moot.

Conceptual model: Repeating or elaborating here a little of the detail provided on the conceptual model in Part I section 3 would be useful (or at least provide specific page references).

Both in this section and section 3 ultimately appear to rely on a stakeholder-inclusive, iterative modeling process at the outset, to create a credible and useful conceptual model as a starting point. While section 3 identifies “valuation” as the endpoint for such models, ultimately such models are used to evaluate changes and potential interventions/remediations in ecological systems. It would probably help the reader if the section characterized this conceptual modeling phase a little more concretely – either by reference to the mediated modeling section, or by further description of and reference to the CAFO sample model, for example. There are not only questions of the scale and scope of such models, but of how they should be specified, represented, and used (just for the analytical blueprint? Or in other ways as well?). Doesn’t the model have to in some form or other represent (ecological/biophysical) causal processes?

Section 3 emphasizes that there is a disconnect between ecological modeling and social valuation processes, in that ecological endpoints specified in ecological models often don’t align well with socially valued endpoints. Here there is a hint of ‘blame the public for ignorance’ instead (e.g., lines 11-23 on page 88). With a little editing, this section would convey more of the context portrayed in section 3.

Page 89 – Perhaps the Biodiversity Recovery Plan or later documents from the Chicago Wilderness could provide some good examples for a table like Table 4.

Page 89 Lines 13-14 – could expert judgment (or some explicit expert elicitation process) be referenced rather than justification from a conceptual model or the literature?

Page 93 lines 14-15 – Could the same be said for many economic valuations - that they are based on quite different methods and assumptions, and sometimes even different underlying premises? [e.g., about how people respond to information]. Can the report say something more specific about amalgamating values, rather than that it shouldn’t be done unless they are from economic valuation studies?

Page 93-94 – while this is a good starting point, it may not go far enough. Saying total monetized benefits without including at least a qualitative assessment of the relative importance of benefits that are not quantified or monetized may still lead to overlooking non-monetized benefits.

#### Comments from Terry Daniel

As the title proclaims and the introduction strongly reinforces, this section is contrary to the broad definition of value and value assessment that has been followed in the rest of the C-VPSS report and to the multi-method approach that we have been advocating for assessments of values of the protection of ecosystems/services. The initial commitment to benefit cost analysis demands monetary valuations (of a particular kind) and precludes the possibility of contributions to national rule making from the majority of the methods discussed elsewhere in our report. This is quite a different approach from the site-specific and regional partnership cases discussed later, and it is at odds with much of the middle portions of the national rule making section itself. While the other case example sections have emphasized how multiple methods can be productively applied, this section initially acknowledges that “Most of the environmental laws administered by the Agency require that regulations be defined by a set of criteria other than benefits and costs,” and then proceeds to narrow the field for national rule making to benefit cost analysis, relying on a strict and possibly overly narrow reading of Executive Order 12866 and OMB Circular A-4. It is not clear whether this simply reflects a preference on the part of the authors of the section, or if it is founded on some legally established constraint that is peculiar to the national rule making context.

Even the confines of Executive Order 12866 and the narrower prescriptions of Circular A-4 would seem to allow considerably larger roles for non-BCA, non-monetary value assessment methods. This might be clearer if the quote from Executive Order 12866 (P 81, L 18) were complete:

6) Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.

In addition, citations from other parts of the Order would further open the door for alternative methods. For example,

Section 6, C (i) An assessment, including the underlying analysis, of benefits anticipated from the regulatory action (such as, but not limited to, the promotion of the efficient functioning of the economy and private markets, the enhancement of health and safety, the protection of the natural environment, and the elimination or reduction of discrimination or bias) together with, to the extent feasible, a quantification of those benefits;

The distinction between “efficient functioning of the economy” and “protection of the natural environment” seems to provide ample motivation for the application of ecological and other valuation methods discussed in the C-VPASS report. Similar distinctions are also made in the opening statements of the rationale for the Order and are repeated in other sections.

The prescriptions from OMB Circular A-4 for implementing the Executive Order clearly favor benefit cost analysis, but also consistently acknowledge that this method will often not be sufficient. The valuation of ecosystems/services (where markets generally do not exist and where people and analysts have little or no basis for determining their WTP) would seem to present just the type of circumstances in which the Circular indicates that credible monetary valuations will be difficult or impossible to achieve, and thus where other/additional valuation methods will need to be applied. The bias toward monetary valuation is evident throughout the Circular, and alternative methods are largely relegated to a fall-back status (money first, then ecology, then talk). None-the-less, the particular context of protecting ecosystems/services, as our committee’s work has shown, provides ample opportunity and substantial need for alternative valuation approaches. Some representation of other methods in the national rule making context would help to make this section more consistent with the other application-case sections, and would make an important contribution to the main themes of the overall report.

In 5.2.2 the hazards of “focusing on stressors whose impacts can be monetized” are noted and illustrated in the context a national rule. Moreover, it is advocated that “... first impacts should be described or characterized qualitatively, followed by quantification and ultimately monetization when possible...” But the national rule making section is essentially silent on what methods might be useful when this right analytic path leads, as it frequently will for ecosystems/services, to a non-monetizable endpoint. Instead, 5.2.3 returns to the restriction to benefit cost analysis, and thus to monetary measures of value.

There is no doubt that benefit cost analysis and associated monetary valuations are important and useful tools for deciding environmental policies and regulatory actions. Where these methods can be applied to attain credible measures of the value of alternatives, they should be applied with rigor as this section rightly advocates. But no one believes that benefit cost analysis is now (or perhaps ever will be) sufficient on its own to support the important national decisions that must be made regarding the protection of ecosystems and services. Unnecessarily restricting the discussion of national rule making could be counter-productive to the goals of C-VPASS.

**B. Uncertainty (Part 2, Section 8.1, 167-175) Summary of written comments and response**

Comment from Ann Bostrom

Proposed Text for a “Text Box 9

The idea would be to include a few more examples corresponding to the types of examples discussed in the text, and discuss the table a little further, to illustrate specific communications issues having to do with communicating values.

VALUE	MEASURE	Characteristics	Context/Use	Reference	Communication
Avoided decrease in crop harvest	Avoided 7.5% decrease in crop harvest from UV-b radiation by 2075	Quantified	Context/Use: Regulatory Impact Analysis: Protection of Stratospheric Ozone Reference:	Table 7-9, Quantified and Unquantified Ecological and Welfare Effects of Title VI Provisions, page 96 of <a href="http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf">http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf</a>	Structured narrative
Unquantified ecological benefits	[List of benefits:] . recreational fishing . forests . marine ecosystem and fish harvests . avoided sea level rise, including avoided beach erosion, loss of coastal wetlands, salinity of estuaries and aquifers . other crops . other plant species . fish harvests	Unquantified measure, descriptive	Regulatory Impact Analysis: Protection of Stratospheric Ozone	Table 7-9, Quantified and Unquantified Ecological and Welfare Effects of Title VI Provisions, page 96 of <a href="http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf">http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf</a>	Unstructured list/narrative
Freshwater acidification from wulfur and nitrogen oxides regionally, in the Adirondacks	(in millions of 1990\$) range of \$12 to \$88 for 2010; central estimate for 2010 is \$50; \$260 cumulative estimate 1990-2010.	Monetized ecological benefit. Captures only recreational fishing impact regionally (incomplete geographic coverage), based on an economic model of recreational fishing behavior.	Regulatory Impact Analysis	Tables 7-8 and 7-10, pp 91-92 and 97 in <a href="http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf">http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf</a>	Dollars, used in calculations of benefits

## Comment from Terry Daniel

This is generally a straightforward and clear presentation of the key issues in determining and representing the uncertainty of ecosystems/services value assessments. On P 167, L 30 the problem of “untruthful” revelation of preferences has several unfortunate and probably unsubstantiated implications. First, the implication that respondents to CVM or other surveys purposively lie might more accurately be represented as an effect of context (information provided/not provided, understood/not understood, etc) on felt preferences rather than some calculated strategic effort to mislead the research/assessment. Second, the reference to untruth implies that someone knows the truth, which is probably not the case for most ecosystems/services values—and deviates from the stated intention to address uncertainty and not accuracy. Perhaps “the unfortunate effect of encouraging strategic or other biases” would better fit the situation, though it still probably overemphasizes calculated efforts to misrepresent felt preferences.

On P 170, L 9 it is not clear what the point is of the assertion that decisions are “often made by single individuals ...” with “personal idiosyncrasies.” This seems to be more a comment on the state of bureaucratic decision making rather than an issue of uncertainty in value assessments. The fact that value assessments are almost always based on the preferences and judgments of a small subset of the potential stakeholders is acknowledged elsewhere in the report (I forget where), but that is true regardless of the assessment method employed. Some methods, such as careful surveys using probability samples can come close to precisely and accurately representing the sentiments of the designated population of stakeholders/citizens, but most methods rely on much smaller samples of respondents with questionable representativeness or on analysts who must rely on methods and assumptions that in many situations are likely (or even assuredly) to produce unrepresentative outcomes. Further uncertainty (imprecision) is surely added by relying on a very small number of individuals (decision makers) to interpret these assessments, along with many other factors, to arrive at a decision. But we are not likely to be offering any suggestions for how to alleviate the latter source of uncertainty, so we might better tread a bit more lightly in pointing it out.

On P 170, L 19 the assumption, not always deserved, of greater reliability of value assessments based on revealed preferences raises an important point, but relies on terms (model mis-specification) that will not be fully presented until later in the report, and fails to mention market failure, externalities and many other factors that might add uncertainty (and inaccuracy). The point is still worth making, as stated preference methods, by virtue of their ability to control the context in which preferences are expressed may well produce higher levels of precision (lower uncertainty) than revealed preference methods, but there is a nagging concern that they may not be accurate—that is they do not predict “real world” choices and actions. In the end, neither revealed nor stated preference methods assure correct assessments of values, any more (or less) than the other techniques discussed in the C-VPESS report. In the context of protection of ecosystems/services it seems that increased precision of value assessments is a poor substitute for accuracy, and perhaps the effort to constrain the discussion to precision and not address accuracy is not appropriate—and it is evidently very difficult to do. In such situations it may be better to appeal for the application of multiple methods to get the benefits of cross validation and convergence as our best shot at increasing accuracy.

The decision on P 174, L 23 to delete the discussion of decision making under uncertainty potentially deprives the report of a considered basis for determining the relative merits of alternative value assessment methods. Many in the audience for the report may come with the question “Which method is best?” Certainly the answer depends upon many things, but the nature of the decision making model and framework is likely to be one of the most important considerations. As noted, this issue might better be treated earlier in the report, in a more general context, but it seems important that at least a brief discussion be included somewhere. Even then, some mention of the issue seems important here, as one of the key differences among decision models is how they respond to and treat uncertainty.

## **C. Communication and Valuation (Part 2, Section 8.2, pp. 175-183)**

### Comment from Terry Daniel

Decision model issues come up again in the context of communicating assessed values to decision makers. For example, there is no doubt that having multiple metrics for representing the values of protecting ecosystems/services complicates the decision making process (P 176, L 23). But the alternative of a single metric (usually dollars) may mask important differences among relevant and important considerations and encourages naïve acceptance of often questionable assumptions of commensurability and substitutability between and within ecological, social and economic values that may not be appropriate. Again the deleted section on decision making models might help to clarify the issues here, especially by discussing the relative merits of placing the aggregation across value sets early or late in the decision making process, and whether that process is the responsibility of authorized decision makers or is accomplished by analysts further back in the process or by deliberative processes requiring communication and negotiation among stakeholders, experts and decision makers.

This section most directly addresses communication of the results of value assessments, but it has many important implications for what and how value assessments should be done (crossing many of the issues noted for the Uncertainty section above). In that context, we need to pay more attention to the consistency between this and the previous section on uncertainty.