

U.S .Environmental Protection Agency
Science Advisory Board (SAB)
Committee on Valuing the Protection of Ecological Systems and Services (C-VPES)
Summary Meeting Minutes of a Public Teleconference Meeting
12:30 p.m. - 2:30 p.m. (Eastern Time)
March 6, 2007

Committee: The SAB Committee on Valuing the Protection of Ecological Systems and Services (C-VPES). (See Roster - Attachment A.)

Date and Time: March 6, 2006, 12:30 pm - 12:30 pm (Eastern Time) (see Federal Register Notice – Attachment B)

Location: Participation by Telephone Only

Purpose: The purpose of the teleconference is to discuss draft text developed by committee members for a draft report related to valuing the protection of ecological systems and services. (See Meeting Agenda - Attachment C.)

Attendees: Members of the C-VPES:
Dr. Barton H. (Buzz) Thompson, Jr. (Chair)
Dr. Kathleen Segerson (Vice-Chair)
Dr. Gregory Biddinger
Dr. James Boyd
Dr. Terry Daniel
Dr. Dennis Grossman
Dr. Robert Huggett
Dr. Douglas MacLean
Dr. Harold Mooney
Dr. Louis Pitelka
Dr. Stephen Polasky
Dr. Paul Risser
Dr. Paul Slovic

Consultants to the C-VPES
Dr. Joseph Arvai
Dr. Allyson Holbrook
Dr. Jon Krosnick

EPA SAB Staff
Dr. Angela Nugent (Designated Federal Officer)

Other Members of the public (see Attachment D)

Meeting Summary:

The meeting followed the issues and general timing as presented in the meeting Agenda (see Meeting Agenda - Attachment C). There were no written comments submitted to the SAB and no requests for public comment.

The DFO opened the meeting by noting that the proceedings conformed to the requirements of the Federal Advisory Committee Act and that the members of the chartered SAB had met the requirements of the Ethics in Government Act.

Dr. Buzz Thompson thanked members for their participation and the progress made on the February 28, 2007 teleconference call. He reminded members that the next call will be held March 20, 2007. He noted that the Designated Federal Officer (DFO) would mail hard copies of a new draft of the report containing several new components (the section on Valuation for Regional Partnerships, a revised section on Habitat Equivalency Analysis, and Uncertainty) and would provide in that mailing a revised list of topics for upcoming teleconferences, adjusted to accommodate members' availability.

Dr Thompson also noted several general comments made by committee members and suggested several action items. He asked Dr. Segerson to work with Dr. Pitelka to review the draft document for consistent and logical use of the terms "ecosystem" and "ecological." He also noted a comment that the draft document should include a discussion of the opportunity cost of utilizing various valuation methodologies, compared to the benefit of developing and using those methods. He suggested that he work with Dr. Segerson to develop text in an appropriate section of the document to address this issue. These suggestions were acceptable to the committee.

Survey Issues for Ecological Valuation: Current Best Practices and Recommendations for Research (Appendix A)

Dr. Thompson introduced the discussion by noting that he saw two sets of issues related to Appendix A: issues related to the text on pages 298-339 of the 2/15/2007 draft report, which relate to survey issues, and issues related to pages 339-358, which contain additional text not necessarily intended for Appendix A but which might be integrated with earlier sections of the report. Dr. Segerson noted that she had attempted to summarize briefly ideas from pages 339-358 in section 2.4 of the report (pp. 18-20) in a discussion on "caveats regarding valuation." She asked for comments on that section.

At the request of the Chair, Dr. Jon Krosnick provided some background on his role and the text included in the draft Appendix A. He reminded the committee that he and Dr. Holbrook serve as consultants. Their primary goal is to help the committee develop the report the committee desires. He spoke of their relative lack of background about the committee's past deliberation and what he described as minimal direction from the committee.

Before discussing written comments received on Appendix A, Jon offered a general comment on use of terminology in the report. He noted that there might be an “illusory confusion” related to some use of the term “surveys.” In his view, Part 3 of the committee’s report focuses in great part on “measures” of values and that there may be multiple methods for obtaining those values. He observed that surveys as a method involve three major areas where choices need to be made that will determine survey quality: 1) drawing a representative sample; 2) choice of mode (e.g., paper, telephone); and 3) choice of measurement (which can involve many different approaches). In his view, much C-VPESS discussion pertains to the pros and cons of different measurement processes, which are distinct from whether the survey method is used. He suggested that C-VPESS use language that focuses on the type of measure included in surveys when the issue of measurement type is discussed (e.g., refer to “attitude survey questions” not to “attitude surveys”).

Dr. Krosnick reviewed the written comments received. He noted that some comments noted a lack of balanced tone in discussing survey issues. Although he believed the discussion was balanced, he asked for guidance regarding the tone, level of detail, or whether the discussion was appropriate to include as an appendix. He noted the importance of close analysis of research that concluded survey results demonstrated that peoples’ values were non-existent or mutable and might not merit consideration in policy making. Close analysis of those survey results reveals that many surveys do not have one of the elements necessary for good quality survey design: Surveys need to have: representative sample, real sponsor, clear communication of the real consequences of decisions, and “real information” for respondents about all goods they are being asked to value.

Dr. Krosnick noted that a commenter asked that the appendix include literature on judgment, decision-making, and social cognition. He acknowledged that it would be valuable to address this literature.

The committee then discussed Dr. Krosnick’s comments and the draft text. One member noted that Dr. Krosnick’s oral comments and draft text led to the conclusion that it is difficult to do surveys and “get it right.” Since surveys on ecological issues can be vitally important and will need to withstand harsh critique, there may be concerns that EPA staff or contractors may not “get it right.” He asked about the costs “of trying survey methods and not doing good job.” He suggested that the committee report, rather than open EPA to criticism for using methods that are inadequate or using them in an adequate way, lay the groundwork for research needs that will allow EPA to use methods in a defensible way.

Another member thanked Dr. Krosnick for making the point that general conclusions regarding the meaning of surveys need to be validated by close analysis of particular surveys. He asked Dr. Krosnick whether he was generally challenging the notion that the phenomena of framing effects and preference reversals were deep and that it was a “pretty easy task” for psychologists to generate preference reversals. He also asked Dr. Slovic about the importance of the choice of the object being measured in

survey results to assure that the object measured is really what the researcher wants to measure.

Dr. Krosnick responded that all social science research has a primary concern about the question “are you measuring what you want to measure?” It is often easy to “get numbers” and not be sure those numbers are measuring what is needed to inform an action or decision. He asked C-VPESS to point to what it advises EPA to measure.

Dr. Krosnick noted that he did take issue with general conclusions about the power of framing effects. In research often cited, there is no representative sample and respondents do not have accountability. He suggested that many analysts read the psychology literature and draw inappropriate conclusions. He also noted that there are ways to optimize survey design to minimize problems and “get things right.”

Another member of the committee asked for the text to focus on practical advice for EPA. He asked for the text to provide answers to such questions as:

- If survey design is “complicated stuff,” how can EPA do it? Does EPA have the right expertise?
- If survey design must be contracted out, what factors must be considered?
- What action-oriented conclusions can EPA reach, after reading the Appendix?

Another member responded that it might be helpful to identify the kinds of questions that can be addressed by surveys and those that would be more difficult for a survey to address (e.g., “What kind of admissions price would you pay for entrance to a national park” vs. “what ecosystems might be affected by regulations and related tradeoffs”).

Dr. Krosnick responded that it would be helpful for the committee to provide guidance regarding the audience for the report.

A member then noted that while surveys are imperfect, the committee must consider the alternative(s) to not using surveys. He asked the committee to consider that all types of measurements are subject to errors and biases and none is perfect. He reminded the committee of its emerging consensus that use of multiple methods is desirable because no one measurement or method fully reflects the complex nature of value adequately. He understood the C-VPESS charge as not limited to merely identifying research needs. The committee was asked to identify ways EPA’s practice of ecological valuation could be improved currently and he did not want to limit the committee’s report only to research conclusions. The chair endorsed the member’s view. Another member noted that he wished the committee to consider the analytic-deliberative model discussed in the National Research Council report *Understanding Risk*.

Yet another member asked for background on why the draft report includes an appendix on surveys and no other method in such detail. He stated that the appendix could make a few changes that would alter the “self-congratulatory” tone that several

members remarked, but wondered why such a large appendix was devoted to surveys. The chair responded that at the SAB workshop in December 2005 EPA staff and managers expressed an interest in ecological valuation survey issues. The Appendix was designed to meet that need.

Dr. Thompson proposed that he work with Dr. Segerson and the DFO to provide guidance on three different sections of material currently in draft Section A (main portion, pp 298-323; section on challenges of using surveys, pp. 323-330; and general issue of public values, pp. 351-358). He proposed to provide additional guidance to Dr. Krosnick and to integrate the committee's comments into the next revision so it becomes part of the overall committee report.

Economic Methods (Part 3, Section 4; Part 2, Section 4.3)

Dr. Thompson asked Dr. Segerson to take the lead for the discussion of the first set of economic methods, due to a conflict that prevented Dr. A. Myrick Freeman from participating in the teleconference call. Dr. Segerson began the discussion with the observation that the introduction to this method and other methods might include a clear identification of the kinds of values that are included in economic analysis and those that are not included. She asked for oral comment from members of the committee who did not provide written comment.

A member noted that on page 228 a reference is made to economic methods measuring things that contribute to people's economic well-being. He asked whether C-VPESS should endorse as values choices people make vs. choices people should make. Dr. Segerson noted that the Part 3 method descriptions were intended to reflect the actual scope and application of methods, and would not be the point in the report to address the merits of whether the concept of value should be "normative vs. descriptive." Dr. James Boyd noted that the description of "Ecological Benefit Indicators" he provided did not measure individual choices but was meant to inform public choices and so may not fit the description of the general economic methods described in the text.

A member suggested providing a table in part 2 of the text, perhaps around pp. 70-80 that compared methods and their key attributes (e.g., whether they were normative vs. descriptive, relied on expert or lay preferences, measured public vs. private values). Questions concerning these attributes arise in all method discussions and could be addressed concisely in that one table and referenced throughout the report

Dr. Boyd then responded to written comments received on the write-up for "Ecological Benefit Indicators." He acknowledged the need for examples and will provide more detail in a revised write-up. He also commented that the placement of the "Ecological Benefit Indicators" method was awkward, because it did not fit neatly into any single current section in Part 2. He viewed the method as a "bridge to mediated approaches."

Members then provided oral comment. Dr. Segerson asked whether text she developed for Part 2 that aimed to describe the “Ecological Benefit Indicator” method was accurate. She had written that the method provided a way to measure willingness to pay through an approach that was easier, less-data intensive, and potentially less controversial than monetized methods for some values. Dr. Boyd agreed with this characterization and responded that the method aimed to offer an approach for “practical measurement” that offers a way to think about what we should count in the physical and economic landscape. He suggested that this method offers a way to standardize how economic valuation studies should report results that could assist with future transfer of benefits and meta-analyses.

Another member asked whether the method was currently at the research stage or whether it could be implemented now. Dr. Boyd responded that he would provide examples about how the method could be used. He stated that if EPA cares solely about calculating a monetized benefit number, the method wouldn’t help. But if the Agency wants to communicate better what it is enhancing or protecting, the method is valuable and can be used. Another member added that the method could be useful in national rulemaking in helping the Agency quantify what cannot be monetized.

Members then discussed an alternate placement of the “Ecological Benefit Indicator” method. One member suggested that it fits somewhere between the discussion of ecological assessment approaches, social-psychological approaches, and economic approaches.

Dr. Thompson proposed that he work with Dr. Segerson and the DFO to provide guidance to Dr. Boyd on revision of the “Ecological Benefit Indicator” write-up and will reconsider the placement of the section within the report.

Valuation by Decision Aiding/Structured Decision Making

Dr. Paul Slovic began the discussion by summarizing written comments received on the draft decision-aiding method write-up. He noted that the methods covered attempt to address the issue that people’s values are not well formed and that value has multiple dimensions.

He noted that one commenter asked that the write-up address the facilitator effect. Dr. Slovic agreed that the write-up should cover this issue because a facilitator may play an important role, just as a person administering a survey can play an important role in a survey's outcome. He reported that comments asked him to change language characterizing EPA's mission as related to environmental health, since human health is part of EPA's mission and under some statutes the priority for EPA. He noted that measuring human values presents a particular challenge because value is normative and measures are not invariant. Measuring values differs from measuring a characteristic such as weight or mass. Different elicitations of value result in different orderings of value. He observed that transparency is a strength associated with decision-aiding approaches.

Members of the committee then provided oral comments. One member asked about the representative nature of deliberative groups. Given the group process that defines deliberative groups and the substantial information provided to them, one would not expect them to be representative of the general public. The member noted that only a few people are able to participate in deliberative processes. Another member pointed out a research opportunity in combining "value discovery" methods with economic methods and examining the effect of information and education on preferences and whether preferences change in systematic ways.

Another member asked Dr. Slovic about a reference to minimization of bias on p. 251 of the draft text; Dr. Slovic responded that the language should be dropped. The committee also discussed the comparison of those using decision-aiding processes to "architects" and noted that this analogy might be problematic for EPA. Dr. Slovic responded that the major point intended was that people form their values and that value formation can be assisted through decision-aiding methods. He agreed that the "architecture" analogy could be removed. Yet another member asked for the text to drop a reference to obtaining more accurate value assessments with "complete accurate information."

Other members asked for the write-up to include the impact of deliberative processes on fragmentation within communities. One member noted an article previously circulated by Dr. A. Myrick Freeman on deliberative processes in Colorado, where fragmentation resulted from deliberative processes. The committee chair observed that Dr. Lee Ross has also published on the impact of deliberation on highly charged issues, where interest groups "mined" information generated to support their separate views. Dr. Slovic agreed to review this literature and address it in a revised write-up.

Members concluded their discussion with two final points. A member suggested that text on page 256 be presented as a narrative, rather than a series of bullets, to be consistent with other text. An ecologist on the committee asked that language be changed on p. 256 to specify that pollution from an estuary drains into the ocean.

Dr. Thompson suggested that he consult with Dr. Segerson and then propose next steps for revising the decision-aiding method write-up.

Conclusion of Teleconference

Dr. Thompson thanked members for their participation

The teleconference was adjourned at 2:30 p.m.

Respectfully Submitted:

/s/

Angela Nugent
Designated Federal Official

Certified as True:

/s/

Dr. Barton H. (Buzz) Thompson, Jr.
Chair
SAB Committee on Valuing the
Protection of Ecological Systems
and Services

List of Attachments

Attachment A: Roster of the SAB C-VPES

Attachment B: Federal Register Notice

Attachment C: Meeting Agenda

Attachment D: Attendees from the Public Who Requested or Were Provided Call-in Information

Attachment E: Comments from Members and Consultants of the SAB Committee on Valuing the Protection of Ecological Systems and Services (C-VPES) on the 2/15/07 draft report for discussion at the 2/27/07 C-VPES public teleconference call

**Attachment A:
Roster of the U.S. Environmental Protection Agency
Science Advisory Board
Committee on Valuing the Protection of Ecological Systems and
Services**

CHAIR

Dr. Barton H. (Buzz) Thompson, Jr., Robert E. Paradise Professor of Natural Resources Law, Stanford Law School, and Director, Woods Institute for the Environment, Stanford University, Stanford, CA

VICE-CHAIR

Dr. Kathleen Segerson, Professor, Department of Economics, University of Connecticut, Storrs, CT

MEMBERS

Dr. William Louis Ascher, Donald C. McKenna Professor of Government and Economics, Claremont McKenna College, Claremont, CA

Dr. Gregory Biddinger, Coordinator, Natural Land Management Programs, Toxicology and Environmental Sciences, ExxonMobil Biomedical Sciences, Inc, Houston, TX

Dr. Ann Bostrom, Associate Professor, School of Public Policy, Georgia Institute of Technology, Atlanta, GA

Dr. James Boyd, Senior Fellow, Director, Energy & Natural Resources Division, Resources for the Future, Washington, DC

Dr. Robert Costanza, Professor/Director, Gund Institute for Ecological Economics, School of Natural Resources, University of Vermont, Burlington, VT

Dr. Terry Daniel, Professor of Psychology and Natural Resources, Department of Psychology, Environmental Perception Laboratory, University of Arizona, Tucson, AZ

Dr. A. Myrick Freeman, William D. Shipman Professor of Economics Emeritus, Department of Economics, Bowdoin College, Brunswick, ME

Dr. Dennis Grossman, Principal Associate - Biodiversity Protection and Conservation Planning, Environmental and Natural Resources Department, Abt Associates Inc., Bethesda, MD

Dr. Geoffrey Heal, Paul Garrett Professor of Public Policy and Business Responsibility,

Columbia Business School, Columbia University, New York, NY

Dr. Robert Huggett, Consultant and Professor Emeritus, College of William and Mary, Williamsburg, VA

Dr. Douglas E. MacLean, Professor, Department of Philosophy, University of North Carolina, Chapel Hill, NC

Dr. Harold Mooney, Paul S. Achilles Professor of Environmental Biology, Department of Biological Sciences, Stanford University, Stanford, CA

Dr. Louis F. Pitelka, Professor, Appalachian Laboratory, University of Maryland Center for Environmental Science, Frostburg, MD

Dr. Stephen Polasky, Fesler-Lampert Professor of Ecological/Environmental Economics, Department of Applied Economics, University of Minnesota, St. Paul, MN

Dr. Paul G. Risser, Chair, University Research Cabinet, University of Oklahoma, Norman, OK

Dr. Holmes Rolston, University Distinguished Professor, Department of Philosophy, Colorado State University, Fort Collins, CO

Dr. Joan Roughgarden, Professor, Biological Sciences and Evolutionary Biology, Stanford University, Stanford, CA

Dr. Mark Sagoff, Senior Research Scholar, Institute for Philosophy and Public Policy, School of Public Affairs, University of Maryland, College Park, MD

Dr. Paul Slovic, Professor, Department of Psychology, Decision Research, Eugene, OR

Dr. V. Kerry Smith, W.P. Carey Professor of Economics, Department of Economics, W.P. Carey School of Business, Arizona State University, Tempe, AZ

Dr. Robert Stavins, Albert Pratt Professor of Business and Government, Environment and Natural Resources Program, John F. Kennedy School of Government, Harvard University, Cambridge, MA

CONSULTANTS TO THE COMMITTEE

Dr. Joseph Arvai, Professor, Environmental Science and Policy Program, and Department of Community, Agriculture, Resource and Recreation Studies (CARRS), Michigan State University, East Lansing, MI

Dr. Allyson Holbrook, Assistant Professor of Public Administration and Psychology, Survey Research Laboratory, University of Illinois at Chicago, Chicago, IL

Dr. Jon Krosnick, Frederic O. Glover Professor in Humanities and Social Sciences, Professor of Communication, Director, Methods of Analysis Program in the Social Sciences, Associate Director, Institute for Research in the Social Sciences, Stanford University, Palo Alto, CA

SCIENCE ADVISORY BOARD STAFF

Dr. Angela Nugent, Designated Federal Officer, 1200 Pennsylvania Avenue, NW 1400F, Washington, DC, Phone: 202-343-9981, Fax: 202-233-0643, (nugent.angela@epa.gov)

Attachment B: Federal Register Notice

Science Advisory Board Staff Office; Notification of Six Public Teleconferences of the Science Advisory Board Committee on Valuing the Protection of Ecological Systems and Services

[Federal Register: December 28, 2006 (Volume 71, Number 249)]
[Notices]
[Page 78202-78203]

ENVIRONMENTAL PROTECTION AGENCY
[FRL-8262-8]

Science Advisory Board Staff Office; Notification of Six Public Teleconferences of the Science Advisory Board Committee on Valuing the Protection of Ecological Systems and Services

AGENCY: Environmental Protection Agency (EPA).
ACTION: Notice.

SUMMARY: The EPA Science Advisory Board (SAB) Staff Office announces six public teleconferences of the SAB Committee on Valuing the Protection of Ecological Systems and Services (C-VPSS) to discuss components of a draft report related to valuing the protection of ecological systems and services.

DATES: The SAB will conduct six public teleconferences on February 5, 2007, February 13, 2007, February 27, 2007, March 6, 2007, March 20, 2007, and March 27, 2007. Each teleconference will begin at 12:30 p.m. and end at 2:30 p.m. (eastern standard time).

LOCATION: Telephone conference call only.

FOR FURTHER INFORMATION CONTACT: Any member of the public wishing to obtain general information concerning this public teleconference may contact Dr. Angela Nugent, Designated Federal Officer (DFO), via telephone at: (202) 343-9981 or e-mail at: nugent.angela@epa.gov. General information concerning the EPA Science Advisory Board can be found on the EPA Web site at: <http://www.epa.gov/sab>.

SUPPLEMENTARY INFORMATION: The SAB was established by 42 U.S.C. 4365 to provide independent scientific and technical advice, consultation, and recommendations to the EPA Administrator on the technical basis for Agency positions and regulations. The SAB is a Federal advisory committee chartered under the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C., App. The SAB will comply with the provisions of FACA and all appropriate SAB Staff Office procedural policies.

Background: Background on the SAB C-VPSS and its charge was provided in 68 Fed. Reg. 11082 (March 7, 2003). The purpose of the teleconference is for the SAB C-VPSS to discuss components of a draft advisory report calling for expanded and integrated approach for valuing the protection of ecological systems and services. The Committee will discuss draft assessments of methods for ecological valuation and application of those methods for valuing the protection of ecological systems and services.

These activities are related to the Committee's overall charge: to assess Agency needs and the state of the art and science of valuing protection of ecological systems and services and to identify key areas for improving knowledge, methodologies, practice, and research.

Availability of Meeting Materials: Agendas and materials in support of the teleconferences will be placed on the SAB Web Site at: <http://www.epa.gov/sab/> in advance of each teleconference.

Procedures for Providing Public Input: Interested members of the public may submit relevant written or oral information for the SAB to consider during the public teleconference and/or meeting.

Oral Statements: In general, individuals or groups requesting an oral presentation at a public SAB teleconference will be limited to three minutes per speaker, with no more than a total of one-half hour for all speakers. To be placed on the public speaker list, interested parties should contact Dr. Angela Nugent, DFO, in writing (preferably via e-mail) 5 business days in advance of each teleconference.

Written Statements: Written statements should be received in the SAB Staff Office 5 business days in advance of each teleconference above so that the information may be made available to the SAB for their consideration prior to each teleconference. Written statements should be supplied to the DFO in the following formats: One hard copy with original signature, and one electronic copy via e-mail (acceptable file format: Adobe Acrobat PDF, WordPerfect, MS Word, MS PowerPoint, or Rich Text files in IBM-PC/Windows 98/2000/XP format).

Accessibility: For information on access or services for individuals with disabilities, please contact Dr. Angela Nugent at (202) 343-9981 or nugent.angela@epa.gov. To request accommodation of a disability, please contact Dr. Nugent preferably at least ten days prior to the teleconference, to give EPA as much time as possible to process your request.

Dated: December 22, 2006.
Anthony Maciorowski,
Associate Director for Science, EPA Science Advisory Board Staff
Office.

Attachment C: Meeting Agenda

**EPA Science Advisory Board
Committee on Valuing the Protection of Ecological Systems and Services (C-VPSS)
Public Teleconference
March 6, 2007, 12:30 p.m. - 2:30 p.m. Eastern Time**

Purpose: The purpose of the teleconference is to discuss draft text developed by committee members for a draft report related to valuing the protection of ecological systems and services.

12:30 – 12:35	Opening of Teleconference	Dr. Angela Nugent, Designated Federal Officer
12:35 – 12:40	Review of Agenda	Dr. Buzz Thompson, Chair Dr. Kathleen Segerson, Vice-Chair
12:40 – 12:50	Public Comments	TBA
12:50 – 1:25	Survey Issues for Ecological Valuation: Current Best Practices and Recommendations for Research (Appendix A)- Summary of written comments and response - Committee Discussion - Next Steps	Dr. Allyson Holbrook Dr. Jon Krosnick Committee Dr. Buzz Thompson
1:25 – 1:55	Economic Methods (Part 3, Section 4; Part 2, Section 4.3) o Market-Based Methods (Section 4.2) o Stated Preferences (Section 4.3) o Revealed Preference (Section 4.4) o Ecological Benefit Indicators (Section 4.5)- Summary of written comments and response - Committee Discussion - Next Steps	Dr. A. Myrick Freeman Dr. Kerry Smith Dr. James Boyd Committee Dr. Buzz Thompson
1:55 – 2:20	Valuation by Decision Aiding/Structured Decision Making (Part 3, Section 5.1) - Summary of written comments and response - Committee Discussion - Next Steps	Dr. Paul Slovic Committee Dr. Buzz Thompson
2:20 – 2:30	Summary and Next Steps	Dr. Buzz Thompson

Attachment D: Attendees from the Public Who Requested or Were Provided Call-in Information

Mary Jane Calvey

Pat Casano

Nancy Beck

Jim Christman

Patrick Frey

Pieter Booth

Paul Hendley

Traci Iott

Darrell Osterhoudt

Jean Public

Matt Shipman

Wayne Munns

**Attachment E: Compilation of Comments from Members and Consultants
of the C-VPESS**

Comments from Members and Consultants of the SAB Committee on Valuing the Protection of Ecological Systems and Services (C-VPESS) on the 2/15/07 draft report for discussion at the 3/06/07 C-VPESS public teleconference call
Comments received as of 8 :a.m. ET, March 6, 2007

Comments Received

A. General Comments	16
Comments from Lou Pitelka.....	16
Comments from Paul Slovic	17
B. Comments on Appendix A: Survey Issues for Ecological Valuation	17
Comments from Bill Ascher	17
Comments from Terry Daniel.....	18
Comments from Rick Freeman.....	20
Comments from Lou Pitelka.....	20
Comments from Paul Slovic	21
C. Comments on Economic Methods (Part 3, Section 4; Part 2, Section 4.3)	23
Comments from Bill Ascher	23
Comments from Paul Risser	24
Comments from Lou Pitelka.....	25
D. Comments on Valuation by Decision Aiding/Structured Decision Making (Part 3, Section 5.1)	25
Comments from Rick Freeman.....	25
Comments from Paul Risser	26

A. General Comments

Comments from Lou Pitelka

General comment 1. This applies to the entire report, not just this section. There appears to be a tendency to using the terms “ecological” and “ecosystem” interchangeably. For instance, is it “Ecosystem Benefit Indicators” as in the report, or “Ecological Benefit Indicators” as in the Schedule for our teleconferences? I am not sure that in the case of EBIs it matters, but we should be consistent to avoid confusion.

General comment 2. The sections on Economic Methods and Survey Issues for Ecological Evaluation are well written and organized, and in general easy enough for a non-expert to follow and understand.

General comment 3. There continue (from last week) to be differences among sections in whether and how examples from the literature are cited. This sometimes may be related to the size of the literature, e.g., long history of studies on surveys or stated preference methods, vs. lack of examples of the Conservation Value Method. It might be helpful to EPA staff if every discussion of a major method had a sub-section or paragraph that recommended specific

studies (not review papers) as appropriate examples of the method. Consistency among section/methods in explicitly citing a few key examples add value to the report. The problem in the case of methods that have been widely applied is in objectively selecting a few examples without appearing to advocate specific aspects of one approach over another.

Comments from Paul Slovic

On January 9, 2006 OMB released its proposed Risk Assessment Bulletin, with a stated objective to “enhance the technical quality and objectivity of risk assessments prepared by federal agencies”. This Bulletin was reviewed by a special committee of the National Research Council/National Academy of Sciences, which issued its report in January of 2007. Risk assessment, while not simple to do, is arguably much easier to do than ecosystem valuation. Nevertheless, according to the Academy report, the OMB guidelines were “fundamentally flawed”. The criticisms were extensive and harsh. According to Science Magazine (Jan. 19, 2007) OMB has decided not to “finalize the Bulletin in its current form”. One criticism of OMB risk assessment guidelines that might also apply to ecosystem valuation recommendations, is that the costs in terms of staff resources, timeliness of completing assessments, etc. are likely to be substantial. After detailed discussion of the cost of staff resources as well as the time requirements, the academy concluded that the potential for negative impacts would be very high if the OMB proposals were implemented. I believe that similar discussion is needed in our report to examine whether the costs of applying the various ecosystem valuation methods we present are likely to exceed their benefits.

B. Comments on Appendix A: Survey Issues for Ecological Valuation

Comments from Bill Ascher

There is a great deal of value in this appendix, but it is undermined by the exaggerations in defending the survey approach. Most of the points made below are in this vein.

Page/Line

298/1st para “Survey research is a well-established and respected scientific approach...” Why should our committee endorse this claim? To be sure, some survey research is terrific, but there are also survey research methods that are not. Such a statement seems to run counter to the balanced assessment of strengths and limitations that we apply to all methods. The general tone of the piece is over the top, and at points more propagandistic than balanced. On p. 300, a Pearson correlation of .85 for predicting election outcomes is deemed “nearly perfect”—it explains 72.25% of the variance. That’s not nearly perfect in my book.

302, 2nd para on cross-sectional surveys: the claim that cross-sectional surveys “can be used to test causal hypotheses” is overblown. Cross-sectional surveys provide data, as do other measurement approaches. Surveys have no particular advantage in overcoming the “correlation is not causation” obstacle except in the special case of directly asking why people did what they did, in which case the problems of response bias and over-simplification arise. The implication in the discussion of cross-sectional surveys, and the following discussion of

panel surveys, is that there is something special about surveys in being able to capture causality. The case is not convincing.

304, 2nd para The good discussions of the various potential errors that may affect panel surveys are again subjected to exaggerated reassurance, such as stating that research on biases are “reassurance for the most part and helpful because they point to the most likely ways in which conditioning might occur, thereby allowing researchers to look out for, and correct for, conditioning if it occurs.” Correcting for bias presumes that in a given application, the magnitude as well as direction of bias can be gauged; this is by no means easy.

306, bottom line: “researcher” rather than “research.”

312, 1st full para: “Furthermore, although many surveys manifest substantial non-response error, there is little evidence that the observed amount of nonresponse error is related to the response rate for the survey”—This statement turns the very negative assessment—indeed many surveys have a lot of response error—into yet another reassurance: that response rates are not so responsible for response error. But that it also a negative: increasing response rate does not help very much. Again, the positive spin is not justified.

314, 1st para: the plug for the forthcoming Krosnick & Fabrigar book as the salvation from the need to rely on intuition is objectionable; the message of the earlier survey-methodology researchers is that the way questions are phrased requires subtle judgment; the teaser results that follow the plug refer to rather technical issues of how to structure the scale and how to avoid cognitive overload. They do not refer to the concerns of the earlier researchers, such as how to minimize the effect of the respondent’s desire to look good (different from acquiescence) or how to avoid leading questions.

329 1st para, penultimate line: “OMB” rather than “OBM”

Of a more substantive vein:

323/2nd full para: Would the psychologists on our committee members agree with the statement that “[respondents’] experiences have cumulated into a set of beliefs and attitudes stored in long term memory”?

General comment: Why the complete disregard of small-n, intensive surveys, such as the very powerful Q-method (factor analysis of forced-distribution item rankings)?

Comments from Terry Daniel

The surveys most relevant to the C-VPES report are those that provide quantitative measures of public “values” or “preferences” or “attitudes” toward ecosystems and ecosystem services, and policies to protect them. It would be very helpful to have some information about how these “value” surveys (value assessments) differ in technical design, distribution, analysis or other requirements from surveys of behavior (past, present or future intentions), knowledge, beliefs or whatever other “targets” surveys typically address. There is certainly a role for many

types of surveys in EPA policy making, but there is a detectable bias against all kinds (except perhaps the CVM kind), and a lack of appreciation for how non-dollar denominated quantitative measures of “values” (or preferences, etc) could be useful to EPA.

In the above context, the committee has often discussed and argued about the difference between value assessments (including surveys) that specify a “self constituency” (what do you want, like, prefer) versus a “civil constituency” (what should we as a society want or prefer). It would be helpful to have this issue further addressed in this appendix—or at least to have examples that illustrate both types of constituency. Also, within the civil constituency mode, what do we know about the relative efficacy of different scales of response/expression, such as preference versus importance versus social acceptability? Of course the largest research base in this regard focuses on the special issues that arise when a dollar-payment “vehicle” is specified for respondents to express their judgments—but that may open several cans of worms and exceed the scope of this appendix.

The present draft tends to imply (especially for those at EPA/OMB who are already predisposed) that dollar metrics, as in CVM, are the most appropriate (or even the only appropriate) surveys for quantitatively “assessing the value of ecosystems ...” C-VPSS (or at least some of us) has argued that “psychological” (personal preference, judgments of importance, etc) and “social” (acceptability or importance as a social/public policy) metrics would also be very useful to EPA policy/decision making. Granted that these metrics provide only “relative” values (interval scale at best), they are still very useful for deciding among alternatives offered in a survey and, assuming the alternatives offered are relevant to the policy question at hand, also to policy making. If the appendix could address this issue, or at least present some examples of “non-dollar” quantification in value assessment surveys, that could be very helpful (assuming the authors agree that such surveys would be useful to EPA).

The discussion of “total survey error” and much of the content of the appendix emphasizes sampling error issues—which seems to fit with the predispositions of EPA/OMB and many “consumers” of survey research. The message that some concerns about sampling error may be over-blown is enlightening and encourages greater and more sophisticated use of surveys in EPA value assessments. However, other issues, especially survey design (identifying and crafting questions, organizing them in a survey, etc) might need a little greater emphasis, as there is some real concern that too many people think that a survey is just writing down some questions and getting people’s answers, and so not such a big technical deal. The current text clearly identifies survey design, including choice of rating scale formats, etc, as important issues, but a stronger statement of the importance of care and expertise in crafting surveys would help to counter some presumptions and predispositions toward surveys at EPA.

There is a substantial “qualitative analysis” movement in social science and in political science that is in some sense in opposition to what has previously been defined as rigorous quantitative survey research (and sometimes science more generally!). The proponents of qualitative analysis (focus groups, individual interviews, etc) are increasing in natural resources and environmental management domains (especially in the context of “community based planning”), and they can be quite evangelical in pushing their methods (which often entails derogation of quantitative survey methods). It would be helpful if this appendix anticipated the

eventual arrival of these methods at the doorstep of EPA, and assisted analysts and decision makers in determining when and how these methods, along with surveys and economic and ecological analyses, would be most helpful—and/or what pitfalls are associated with them. Such a discussion might also help to clarify the sometimes fuzzied boundary between qualitative methods and systematic quantitative survey research, which could turn out to be a deterrent to greater use of systematic surveys at EPA.

Comments from Rick Freeman

On Appendix A:

1. I think that pp. 298-338 are relatively uncontroversial. This section is probably useful for informing non-experts. But do we need it to fulfill our charge, especially since not all of our methods are based on surveys?
2. pp. 339-350 on “do preferences exist” is controversial. I don’t think that this belongs in an Appendix. It probably should be integrated into an expanded version of the paragraph at the top of p. 19 (Section 2.4). And it would be more useful if it dealt more directly with Paul Slovic’s arguments and evidence.
3. Similarly for pp. 351-353, it fits better in section 2.4 where this issue is first raised. But I have reservations about getting into this issue in any meaningful way. It strays way over the boundary of our charge. And it is really about policy and social goals not science, and especially not the science of ecosystem services. Since the issue has come up, I guess we have to say something. But I recommend simply identifying the issue and saying it is beyond our charge and area of expertise.
4. On educating respondents prior to surveying them, Paul Slovic wonders if it has ever been done. I am aware of one careful attempt to do this. There is an RFF report and a subsequent journal article. See:

A. Valuation of Natural Resource Improvements in the Adirondacks
... NATURAL RESOURCE IMPROVEMENTS IN THE ADIRONDACKS Spencer Banzhaf,
Dallas Burtraw, David Evans, Alan Krupnick. At
<http://www.rff.org/Documents/RFF-RPT-Adirondacks.pdf>

B. “Valuation of Natural Resource Improvements in the Adirondacks” Spencer Banzhaf,
Dallas Burtraw, David Evans, and Alan Krupnick. Land Economics | August 2006 |
Vol. 82, No. 3 | pp. 445-464

Comments from Lou Pitelka

There is a tone of self-congratulation on the great accomplishments of survey research and use. It is mild and perhaps deserved but still is a different tone from most other sections.

This is an appendix, so maybe the high level of detail is okay. On the other hand, one might ask why we include an appendix with so much detail on surveys when we don't include appendices on other methods? Also, in some cases there appears to be uneven treatment of sub-topics within the document. In particular, on pages 302-306 the design of surveys is discussed. Three types of design are mentioned, but less than a page is devoted to explanations of the first two, while almost four pages are devoted to the third, panel surveys. I have no idea whether this is arbitrary or justified. It seems as though the discussion of panel surveys goes into extreme detail even for an appendix.

On page 308 I would think that most readers of our report would understand the requirements for probability (random) sampling and the problems with non-probability sampling. Thus, almost a page explaining this might be too much. Also, while I understood how systematic sampling could be a form of probability sampling once it was explained, at first I was quite confused. The term is confusing since to most ecologists it means non-random sampling. It might be clearer if these sub-categories of probability sampling were called "systematic random sampling" and "stratified random sampling" to distinguish them from non-random systematic and stratified sampling.

The section on Challenges in Using Surveys for Ecosystem Protection Valuation is perhaps the most important for our report and should not be cut.

A typo that may be important: Page 323, second paragraph under Challenges..., last line. I think the word should be "balanced", not "unbalanced".

Comments from Paul Slovic

Before offering some specific comments on the section of the report pertaining to surveys, I would like to thank Kathy, Buzz, and others who put together this extensive first draft. The careful thought and hard work that went into this draft is evident and appreciated.

This same appreciation also goes for the section on survey methodology, which contains much worthwhile information, very clearly presented. I will keep this handy as a reference on survey methods. That said, I believe much of the section on survey methods should be deleted from the report and published as a separate addendum. I say this for two reasons. First, the level of detail is far greater than that offered for other methods. It adds bulk to a report that is already so lengthy as to possibly deter many readers. Perhaps more important, given the caveats expressed in other sections (and in my comments below) about the problems of surveying poorly informed persons about complex valuation issues pertaining to complex scientific issues, the role of surveys in ecosystem valuation may be quite limited.

There is a section on challenges to using surveys for ecosystem valuation beginning on p. 323 that recognizes some of the problems, such as the need to first inform or educate respondents. But I question whether the elaborate protocol described at the top of p. 324 has ever been done in conjunction with an ecosystem valuation exercise.

The discussion of survey issues is framed around the common use of surveys to assess attitudes and preferences regarding social and political (and perhaps consumer) issues. This carries over to the attempt to answer, on p. 339, the question pertaining to the stability of the tradeoffs for the component attributes of ecosystem valuation. The text of this answer,

covering pages 339-350, seems to me to miss the point of the concern (perhaps because the question was too vague – my fault).

The issue is not about general attitudes being bounced about in small ways by question wording, question order, etc. It is about people not holding stable, well-defined tradeoffs among unfamiliar and technically complex attributes of ecosystems, such as would be necessary to impute defensible quantitative values to those attributes. Underlying this challenge is the evolution of the concept of preference construction as described in some 38 chapters and 1200 references by Lichtenstein & Slovic (2006; *The Construction of Preference*). We're not talking about small effects, but often full reversals of preference triggered by logically equivalent ways of framing the questions, describing the attributes, and assessing preferences.

The material on p. 351 and following pages addresses the question – why should EPA survey the public etc? The answer centers around the importance of assessing political knowledge and attitudes pertaining to political judgments. Again, I think the response misses the point. The concern regards asking for public opinions about quantitative tradeoffs pertaining to valuation issues that involve scientific expertise pertaining to ecosystems. Although the response closes on p. 353 with the assertion that EPA could educate respondents prior to surveying them, this would probably be difficult and time consuming. To my knowledge this has rarely if ever been done for ecosystem valuation.

More specifically, the discussion of question wording, question-order effects, issues of sampling error, etc. is not “tuned in” to the increased understanding of preference and valuation that has emerged in recent years. To use an example from a different context, consider my values for important aspects of prescription drugs. I want my medicines to be 1) effective, 2) safe, and 3) inexpensive. At this general, non-quantitative level, my values are strong, clear, and stable. But when it comes to tradeoffs, things begin to unravel. I don't really have a firm idea about how much additional risk of various side effects I am willing to accept for an increased probability of an improvement in various symptoms. I can make such tradeoffs if forced to do so (hopefully while being guided by a skilled decision analyst), but this tradeoff will certainly be strongly determined by how the various probabilities and consequences are described to me. And logically equivalent descriptions may change my tradeoffs greatly. And it's not a matter of right vs. wrong valuations. My “real” preferences may truly change depending upon the way they are assessed – something akin to the Heisenberg Principal for psychological values.

A few more examples. A study by Irwin et. al. (*Preference reversals for environmental values; J. Risk and Uncertainty*, 1993, 6, 5-18) found that people were more willing to pay more for a specified upgrade in a consumer product (washing machine, stereo) than for a specified reduction in Denver's air pollution. However, when asked directly to compare the two improvements, they indicated that the air quality improvement was more valuable to them.

Another example of the subtlety and complexity of valuation psychology: On pages 324-325, following a paragraph on the “principles of optimal design” it is suggested that respondents could be given information in narrative form; for example, by telling respondents about the state of an ecosystem as it existed 50 years ago, changes that have occurred, and what could reverse these changes. But the value function of Prospect Theory, for which Daniel Kahneman won the Nobel Prize in 2002, predicts that describing a specific ecosystem improvement as “restoring a loss” will be valued quite differently than describing the same change as an improvement from today's status quo. Indeed this prediction was verified

empirically in a study by R. Gregory, S. Lichtenstien, and D.G. MacGregor (The role of past states in determining reference points for policy decisions; *Organizational Behavior and Human Decision Processes*, 1993, 55, 195-206). In sum, it would take a remarkably savvy survey constructor to navigate the complex waters of preference construction for ecosystem valuations in a fair and defensible way.

C. Comments on Economic Methods (Part 3, Section 4; Part 2, Section 4.3)

Comments from Bill Ascher

Page/line

227/19 After the word revealed, a word I missing: probably “preference.”

227/24 Compensating surplus and equivalent surplus are labeled but not explained. Why is the distinction worth making, especially in light of the fact that the labels are counter-intuitive? (I.e., as the text reads, the compensating surplus is not how much people would demand to be compensated for a loss, but rather thow much they would be willing to pay for a gain.

230/23 Underline subtitle “Status as a Method”.

233/6 It seems somewhat narrow to say that travel cost is relevant only to “outdoor recreation.” People may go to various places to get general improvements in weather, relief from pollution/allergens, etc.

237/1 First letter “I” is missing.

238/1 I very much appreciate that the section on the strengths and limitations of hedonics points out the problem of model specification and data dependence, because it is important to convey that revealed preference approaches are not necessarily the gold standard—such an assessment tends to devalue other approaches, such as stated preference approaches, that can capture the effects of public-regardness.

239/18 The discussion of averting behavior models could use an elaboration of an environmental example (maybe the water filter). There is nothing on strengths and limitations, or uncertainty. Perhaps this is the way to handle methods that are not regarded as ready for prime time, but this ought to be discussed.

241/6 Is the primary advantage of stated preference approaches their flexibility, or would it be more useful to say that their primary advantage is that they have the potential to capture non-use values? This is mentioned at 243/27, but I think it deserves more emphasis.

241/26 “Choice experiment” is mentioned twice.

242/26 This and the following paragraph say that stated preference approaches are controversial, but not how and why. To say that the concerns are over the validity of the estimates doesn’t say very much, and might leave the reader (and the EPA analyst) to worry

that there are unknown dragons about. The most commonly expected problem is the exaggeration bias (alluded to in the para beginning at 243/7), but not stated explicitly. The meta-analysis by Murphy et al. (James J. Murphy, P. Geoffrey Allen, Thomas H. Stevens, and Darryl Weatherhead, “A Meta-Analysis of Hypothetical Bias In Stated Preference Valuation,” *Environmental and Resource Economics* (2005) 30: 313–325) addresses this, but is not cited. Maybe Rick has good reason to believe that their analysis is flawed, but maybe not.

247/8 The section on ecosystem benefit indicators does a good job of giving examples of the services that EBIs might measure, but does not give actual examples of EBIs. A simple list of examples would go a long way to making this section more understandable.

249/21 “Principal” rather than “principle”.

249/27 It seems a bit strange that the section on uncertainties involved in using EBIs focuses on the vagaries of visual depictions of the indicators rather than the data problems and how to address them

Comments from Paul Risser

Part 3, Section 4. Economic Methods

<u>Page</u>	<u>Line</u>	<u>Comment</u>
We should reduce the jargon by just using ES and CS, or preferably, WTA and WTP.		
229	14	Would it be helpful to provide an estimate, even a qualitative one, on the consequences of just using the mean rather than incorporating a distribution of the social welfare function?
231	1	Another way of stating limitations is that selecting one variable, e.g., valuing wetlands by the single variable of commercial fish production, fails to address the more fundamental multivariate value of ecosystem studies. Moreover, this simplistic approach may inadvertently dissuade policy makers from pursuing further more complete analyses.
233	29	Do these methods address second-order contingencies, for example, lake A might have a higher preference because lake B is in the vicinity and

		thus adds a regional option (value)?
238	11	...is unrealistic.
244	2	Somehow brushing off this HUGE limitation in one brief paragraph in the last section, and offering only an equally challenging solution, leaves the impression of a technique far more useful than it really is.

Comments from Lou Pitelka

There are a few places where brief examples could be helpful in explaining a concept to non-economists. On page 231, what is a good example of a relevant (to ecological values) market imperfection that could distort things as discussed under Limitations? Similarly, on page 232 in the sub-section on Revealed Preference, it would be helpful to have an example of a behavioral relationship between observable choice variables and the ecosystem service. I am not sure what this means. On page 239, an example of averting behavior would be helpful. Finally, on page 247, section 4.5, water is used as an example, but I still don't have a good sense of what the method involves. Perhaps going into a little more detail would be useful.

There is an issue I remember from years ago when I was involved in discussions of some stated preference studies of pollution. I don't know if this has ever been discussed by C-VPES or if the experts would all agree it is a non-issue. The issue is that in such studies the measured dollar costs of willingness to pay for an environmental improvement often are fairly close (at least same order of magnitude) to costs of being willing to accept a decline in some aspect of environmental quality. It seemed totally unreal and not credible to me and, as I recall, to some of the others involved in those discussions. Thus, a person might be willing to have their taxes go up \$50 per year to pay for some highly desirable environmental benefit, but at least for me, someone would have to pay me thousands of dollars to accept (live with) a decline in environmental quality of similar magnitude. Fifty dollars per year would be meaningless. Anyway, I am curious as to whether this is an issue, and if it is, whether it should be mentioned.

On page 250 in the list of bullets, it seems as though the last bulleted item actually should be a separate concluding sentence, not a bulleted item; it is not a research need but refers to the already listed needs.

D. Comments on Valuation by Decision Aiding/Structured Decision Making (Part 3, Section 5.1)

Comments from Rick Freeman

One of the main issues with this method is the role of the facilitator or “skilled analyst” in the process and the effect of the facilitator on the outcome. This point has come up in several discussions in meetings over the past several years. And I think that it was Joe Arvai who included a discussion of it in a working paper for the committee, including references to studies documenting a “facilitator effect.” This needs to be discussed.

My other main comment has to do not so much with the Method description but the way the overall problem is framed. On p. 252, lines 30-31, it says, “if an objective in a given decision is to improve environmental health (emphasis added) ...” But often for EPA the objective is to improve human well-being. And this might require a decrease in environmental health in order to achieve a larger increase in some other thing that increases human well-being. The assumption of an environmental health objective is arguably inappropriate and certainly not necessary to the rest of this section.

Finally, regarding the observation that how questions are asked can influence the answers one gets, Hanemann and Kaninen have said, “Some critics of CV have asserted that one should expect the same results regardless of the elicitation procedure the evidence in market research as well as environmental valuation overwhelmingly rejects procedural or task invariance in Bateman and Willis, Valuing Environmental Preferences, 1999. And Carson, et al. (unpublished paper on “Incentive and Informational Properties of Preference Questions”) add “... differences between estimates obtained using different elicitation formats, if predicted by economic theory, should be taken as evidence ... that respondents are taking the scenario posed seriously.”

Comments from Paul Risser

Part 3. 5.1 Valuation by decision aid/structured decision making

<u>Page</u>	<u>Line</u>	<u>Comment</u>
251	6	The committee also uses the term “value” for absolute numbers, both parameters and estimates.
253	3	One wonders how many readers would be willing to plow through this sentence.
254	24	Is the “lake problem” the same as the estuary in the previous paragraph?
256	3	Some readers will want a stronger argument for accepting the legitimacy extrapolating from one monetized value, especially following the earlier discussion of the constructive nature of environmental preferences.