

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)
April 3, 2007

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

Date and Time: April 3, 2007, 12:30 pm - 2:30 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. Terry Daniel
Dr. Dennis Grossman
Dr. Robert Huggett
Dr. Harold Mooney
Dr. Louis Pitelka
Dr. Stephen Polasky
Dr. Paul Risser
Dr. Mark Sagoff

Consultant to the C-VPES
Dr. Joseph Arvai

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

EPA Participants
Mr. Rick Durbrow, EPA Region 4

Other Members of the public (see Attachment D)

Teleconference Summary:

The teleconference agenda (see Meeting Agenda - Attachment C) was adjusted because there were no written comments submitted to the SAB and no requests for public comment. To accommodate the availability of members, the committee discussed valuation for collaborative partnerships as the first major agenda item. Ms. Patti Tyler was not available during the call to give oral comments.

The DFO opened the meeting by noting that the proceedings conformed to the requirements of the Federal Advisory Committee Act.

Dr. Buzz Thompson, chair of the committee, welcomed members of the committee to the teleconference call. He noted that the SAB Staff Office had begun travel planning for members attending the May 1-2, 2007 face-to-face meeting in Washington, DC and asked members to contact the DFO if they had questions about travel for the upcoming meeting.

Valuation for Site-Specific Decisions (Part 2, Section 6, pp. 109-145)-)

Dr. Gregory Biddinger thanked committee members who provided written comments. He committed to addressing all the comments in revising the text. He also noted that the subcommittee responsible for the section had received earlier comments from Mr. David Nicholas of EPA's Office of Solid Waste and Emergency Response and that these comments had been incorporated into the text.

Members then provided additional oral comments. One member noted that the section "embedded" recommendations in the text throughout the chapter and referenced how those recommendations related to the Part 1 recommendations. He remarked that this format was different from the approach used in other sections. Dr. Biddinger responded that this format might help EPA understand the committee's recommendations. Other members noted the appeal of organizing Sections 5 and 7 similarly around the Part 1 recommendations. The chair of the committee noted that it may be appropriate for different sections to use different formats but the committee will need to determine the degree of parallelism needed. Whatever approach is taken, however, it will be desirable to make the specific points of advice clear in the report. The chair also noted that the level of detail in section 6.5 was significant and successfully "fleshed" out recommendations. Other members remarked that the specific recommendations in section 6 are likely to be valuable to EPA. They viewed the text as successfully building from concrete examples to a series of lessons that EPA can apply to other settings.

Members raised several other issues. One member asked that page 124 refer to toxic substances, not toxins because the substances in question are not biologically derived. Several members asked Dr. Biddinger to clarify Figure 7 and to provide language describing it in the draft text. Dr. Biddinger noted that he intended to include

the figure to relate valuation to ecological risk assessment for the type of site-specific management decisions faced specifically by EPA. He saw the figure as emphasizing the importance of considering ecological impacts that are part of ecological production functions related to ecological services when environmental protection decisions are made. Several committee members asked whether this point could be made more generally in Part 1 of the report without using the figure. Dr. Biddinger agreed. Committee members also discussed the need to include a text box describing Net Environmental Benefit Assessment (NEBA) and how NEBA incorporates valuation information in a management framework for site-specific decisions. Dr. Biddinger agreed to draft a text box and explore incorporating a diagram that explains the use of NEBA.

Dr. Biddinger concluded the discussion by committing to revise the section. He also asked the DFO to enquire whether Agency staff might provide comments.

Valuation in Collaborative Regional Partnerships (Part 2, Section 7, pp. 146-166)

Dr. Stephen Polasky took the lead in discussing this section, because Dr. Ann Bostrom was unable to join the call. Dr. Polasky summarized written comments received from Mr. Rick Durbrow and briefly introduced discussion of written comments received from committee members. Dr. Polasky noted that the section 7 draft text focused on the Region 5 Chicago Wilderness example and “did not go in depth on other regional examples.” Dr. Polasky stated that he liked how Dr. Biddinger organized the site-specific section around recommendations and wondered if it were possible to organize the regional text in a similar way. Dr. Biddinger noted that site-specific decisions generally follow a similar decision process and that collaborative partnerships in regions might have different features that could be hard to discuss in a way that paralleled the major recommendations in Part 1 of the report. Dr. Polasky then asked whether it was possible or practical to “do more examples.” A member then noted that the text might need only minor changes to headings of subsections and slightly recasted text to link discussions 7.3 and 7.4 to the major report recommendations. Members noted the usefulness of the Region 5 Chicago Wilderness example and suggested that other examples could also be briefly mentioned regarding major recommendations stated in Part 1 of the report. Dr. Polasky asked for assistance in identifying the “lessons” from the Portland and South East examples that link to major recommendations. Dr. Dennis Grossman offered to help with the South East example. Dr. Segerson also agreed to provide some ideas.

Members also suggested that the text note some special features of the Chicago Wilderness example that are of special interest. The example involves active valuation through public participation and real choice. Different groups interpreted “wilderness” in different ways that identified ecological value in a way that made sense to them. The example highlighted that “people can decide what they value” and that values in this exercise do not result from some “universal criteria” or “ecosystem theory.”

A member suggested some “technical changes” for the text. He noted that brief references to specific sections of Chicago Wilderness documents, not easily accessible to

the reader, were somewhat cryptic. He also suggested that critiques of methods that appear in Section 7 (e.g., of stated preference) are redundant with discussions in Part 3 of the report and should be dropped.

Mr. Rick Durbrow from EPA's Region 4 asked whether the text might provide some advice about how to link ecosystem service values to Geographic Information Systems. The chair asked the DFO to set up a call for Drs. Polasky, James Boyd, and Grossman to discuss this issue.

Conclusion of Teleconference

The committee discussed the need to make key points of advice clear when members are revising text for the May meeting. A member suggested that the Chair designate someone to identify major recommendations made in the report and organize them for discussion at the May meeting, so that members could discuss recommendations across the entire report. Members could then discuss gaps, redundancies, inconsistencies, and complementarities. A member noted that this text could provide the first draft of Part 2 section 9.

Dr. Thompson adjourned the meeting at 2:15 p.m. with thanks to participants.

Respectfully Submitted:

Certified as True:

/s/

/s/

Angela Nugent
Designated Federal Official

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 3/09/07 draft report for discussion at the 3/20/07 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

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-VPES and its charge was provided in 68 Fed. Reg. 11082 (March 7, 2003). The purpose of the teleconference is for the SAB C-VPES 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
April 3, 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 – 12:45	Public Comments	TBA
12:45 – 12:55	Invited Agency Comment on Valuation in Collaborative Partnerships	Ms. Patti Tyler, EPA Region 8
12:55 – 1:40	Valuation in Collaborative Partnerships (Part 2, Section 7, pp. 146-166)- Summary of written comments and response - Committee Discussion - Next Steps	Dr. Stephen Polasky Committee Dr. Buzz Thompson
1:40 – 2:25	Valuation for Site-Specific Decisions (Part 2, Section 6, pp. 109-145)- Summary of written comments and response - Committee Discussion - Next Steps	Dr. Gregory Biddinger Committee Dr. Buzz Thompson
2:25 – 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

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

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 4/03/07 C-VPES public teleconference call.

Comments received as of 8:00 am Tuesday, April 03, 2007.

Comments Received

A. General Comments	13
Comments from Dennis Grossman	13
B. Valuation in Collaborative Partnerships (Part 2, Section 7, pp. 146-166)	13
Comments from Bill Ascher	13
Comments from Terry Daniel.....	14
Comments from Dennis Grossman.....	14
Comments from Lou Pitelka.....	15
C. Valuation for Site-Specific Decisions (Part 2, Section 6, pp. 109-145)-	16
Comments from Bill Ascher	16
Comment from Terry Daniel	16
Comments from Rick Freeman.....	17
Comments from Dennis Grossman.....	17
Comments from Lou Pitelka.....	17
Comments from Paul Risser	17

A. General Comments

Comments from Dennis Grossman

As I was reviewing these sections, there were a number of times where I felt we were losing our broad committee focus on the values of Ecological Systems and Services. There is a tendency for some authors to only focus on the value of ecological services, and not give equal attention to the value of ecological systems. We will need to have the final editor watch carefully for this as we prepare final drafts.

B. Valuation in Collaborative Partnerships (Part 2, Section 7, pp. 146-166)

Comments from Bill Ascher

Part 2, Section 7:

p. 146 line 5: No verb in sentence

p. 148 table: presumably “APA” is the American Planning Association”; it should be spelled out.

p. 153, line 30: redundancies with previous section describing the Chicago Wilderness group.

p. 155, lines 11-14: Is this really relevant to the development and use of valuation techniques?

p. 158, line 24: It seems a bit far-fetched to invoke an example of Chinese forest habitats on water flow to apply to Chicago. Are U.S. cases unavailable?

p. 159, line 26: Cost-effectiveness analysis does require valuation insofar as virtually any intervention will change the composition of the ecosystem, reducing some elements as others increase. This is almost recognized in the next paragraph, but it would be unfortunate to leave the reader with the conclusion that cost-effectiveness analysis does not require valuation.

p. 161: The several mentions of the lack of reliability of stated preference methods implies that there are other methods without such problems, in turn implying that revealed preference approaches are more reliable. Since revealed preference approaches are subject to the risks of measurement error and model misspecification, this is an unfortunate implication, especially since a long list of revealed preference studies is provided later in the section.

Comments from Terry Daniel

This, too is a well written section. I was struck by the similarity of some of the valuation/decision exercises presented to the conservation value assessment approach described in Part 3, Section 2.2. Are the analyses described in 7.2.3, 7.4.1 actually an example of the application of that method? Or is the method described in Part 3, Section 2.2 a special case of this general GIS-based ecological value assessment approach? Of course there are also several examples of what might be termed Mediated Modeling (part 3, Section 5.2 or Deliberative groups, Part 3, Section 5.1.

The Portland example seems especially relevant to C-VPES and our report. However, there is little information about how ecological analyses were in fact interfaced with economic valuations and there is not information about how values for recreation and amenities or for changes in human health were actually determined. Similarly, the graphical interface that allowed publics to interactively run scenarios and see ecological and economic/value impacts is intriguing, but not described. If these examples did in fact did develop and apply such models and communication systems, they should provide and excellent opportunity for C-VPES to illustrate with actual data and decisions how some of the methods we describe in Part 3 have been used.

The advantages of monetary valuations described on p 160-line 4-19 seem to be the standard claims, but it might be useful and more realistic to add a sentence or two acknowledging the assumptions of substitutability, commensurate scales, aggregation of individual values, etc on which these claims must rely.

Comments from Dennis Grossman

Clearly written.

For the Portland example, it would be beneficial to describe the role EPA is playing as well as the role that EPA could/should play.

The numbering needs to be fixed regarding the Chicago Example. The current 7.4, really is a subset of 7.3, so should be 7.3.1, etc.

I like this section, but I would like to see a clearer statement of EPA mandates and responsibilities that points to the necessity to build capacity and engage in these partnerships.

Comments from Lou Pitelka

In the title, what is the difference between “stakeholder involvement” and “public participation”? It is not clear in the following discussion.

I had a lot of trouble with the way the material in section 7 was divided up into subsections. I kept having to look back to try to figure out the logic of the flow of topics. I hope the comments that follow are understandable.

The material covered in all of section 7.4, as well as in 7.5 and 7.6 seems as though it should fall under section 7.3. Section 7.3 introduces the general topic of using valuation to support regional decision-making in the Chicago example. Sections 7.4, 7.5, and 7.6 provide the details and all deal with the Chicago Wilderness example, and so should be sub-sections under 7.3.

Subsection 7.4, pages 153-164. It seems as though the four paragraphs, from page 153, line 28 to page 155, line 14 should be a separate subsection, i.e., 7.4.1. This material is not an introduction to all of 7.4, but rather only covers stakeholder involvement or public participation. The current sections 7.4.1 and 7.4.2 address other topics and should stand as equivalent subsections. Perhaps there should be a general introductory paragraph covering all of section 7.4, followed by subsections 7.4.1, .2, .3, .4, and .5.

Page 154, line 20. “species” should be “workshops”.

Page 154, line 25. What does “remaining areas that incorporated fragmentation” mean?

Page 155, lines 16 to page 156, line 12. Since NatureServe methodology is covered in detail elsewhere in the report, perhaps it does not need so much detail here.

Page 162, line 21. I got confused by these paragraphs that begin with topics, not complete sentences. Shouldn't “Valuation of Water Quality and Quantity” be underlined, to correspond with “Valuation of Species Conservation and Ecological Systems Conservation” on page 160 and “Valuation of Recreation and Amenities” on page 163?

I also was confused with the different approaches to discussing “Valuation of Species Conservation and Ecological Systems Conservation” and “Valuation of Recreation and Amenities” vs. “Valuation of Water Quality and Quantity”. The latter simply lists two values associated with water quality and quantity, while the other two subsections are more general discussions.

Page 162, line 24 to page 163, line 3. What about water quality? Why does this subsection only discuss studies of valuing water quantity?

Page 164 and 165. Couldn't sections 7.5 and 7.6 be consolidated into one section, i.e., "Summary and Lessons Learned"? The lessons learned really constitute part of the summary.

Page 165, lines 19-21. Ecological processes occur and can be studied at all scales. For the purpose of valuing ecosystem services, it may be true that a regional scale is the most logical. However, the regions (e.g., a watershed) that are most appropriate and convenient for analyzing ecosystem services probably do not often correspond with the political regions (e.g., the Chicago area) that most often would be a focus for such partnerships. Thus, there is a potential disconnect here between what actually happens (groups in a particular political region come together) vs. what makes most sense ecologically.

C. Valuation for Site-Specific Decisions (Part 2, Section 6, pp. 109-145)-

Comments from Bill Ascher

Part 2, Sections 6.3 and 6.4: There is considerable redundancy in the introductory materials of these sections.

p. 119, line 5: the term "intrinsic" is vague here; should it be "existence value"?

p. 120, line 12: the term "While" needs to be replaced with "However,".

p. 131, line 17: The NRDAP acronym is introduced without definition.

p. 137, line 7: Here again there is a near-condemnation of stated preference approaches as if they were the only ones subject to error.

Comment from Terry Daniel

This section is very well written. I hardly recognize it. Do we have a bone fide English major in our midst? I would suggest that the current section 6.4, stating recommendations that will later be restated and illustrated might better be consolidated into a table (just listing the recommendations) and then the representation of recommendations with case-study illustrations in section 6.5 would not seem so redundant.

Figure 7 is quite intricate and potentially important to the report, but there is not enough description and discussion of the features of the figure/model for most readers to get the full message. A little more help in interpreting the figure would be useful.

In a repeat of one of my pet themes, I would suggest that conceptual model recommended be referred to as an "ecological-social value model" rather than an ecological-economic model (e.g., on p 118-line 18, p 122-line 3, p 123-line 3, p 124-line 13, p 134-line 27,), to more explicitly refer to and reinforce our expanded concept of value assessment. Similarly, on p 129-line 2 & 3, "...economists and other social scientists to estimate values will likely ..." In this context, some of us are working to find a better label for "Social-Psychological or "attitude" methods" (non-monetary is not an alternative).

P 133-line 10 – 23 is repeated verbatim on p 137-line 3-17. The list of methods on p 133-line 27-29 is too generic to provide much guidance to EPA analysts. Perhaps fewer methods could be mentioned, but with more description of how they might be used in this context.

The draft does not commit to where the “boxes” describing the case studies will appear, but it seems clear that they need to appear early in the session so that the context of the examples presented is understood. Otherwise, the cases are used quite effectively to illustrate the main points of site-specific value assessments.

P 117-line 14, format for Recommendation 3

P 136-line15 “input-output models”... This term was introduced by someone who might not know what he is talking about (not to name names, but his initials are TD), so someone with the requisite knowledge of economic taxonomies should confirm that this is the correct term for the analysis cited.

Comments from Rick Freeman

p. 117, Recommendation #3 c): First, I don't understand the inclusion of "Bayesian" here. How does Bayes help to "sort, weight, etc."? And second, shouldn't the list of approaches include economic methods, social-psychological, etc? Don't focus just on MAUT.

p. 128 +: This seems to be more about Recommendation #4 on p. 117 then on Recommendation #3 c).

p. 109, line 21/p. 110, line 17: Wilson (2005) is not in the reference list. Is this Wilson (2004)?

p. 135, line 8: Jonathan Roughgarden (2001) is not in the reference list.

Comments from Dennis Grossman

The title should better reflect the specific types of sites that are a focus of this section. There are many of us who would not translate “Site Specific” to remediation of remediation and redevelopment of previously contaminated sites. Title suggestions are: Valuation Decisions for Historically Contaminated Sites or Valuation Decisions for Superfund Sites.

This is a very well written section that provides pragmatic advice to the Agency.

Comments from Lou Pitelka

I have not finished reading this section.

My one comment is that “ecological” needs to be changed to “ecosystem” whenever it is used with “service” or “services” in order to be consistent with the rest of our report. On page 114, both terms, “ecological services” and “ecosystem services”, are used, implying that they are different.

Comments from Paul Risser

Page	Line	Comment
110	25	Is it really that early focus can result in more ecological service or is that early focus can more completely identify potential ecological services that can be exploited or developed in the remediation and restoration phases?
113		Community involvement in the site characterization step is not entirely clear. Is the involvement designed to assist in actually characterizing the site, to help identify possible uses, to identify important ecological services or to predict the benefits based on the site characterization?
115	20 31	Not entirely clear what is meant by "those outside" Yes, it is important align decisions and actions with what matters most to people affected and/or involved, but the goal of a comprehensive approach is designed to capture ecological services that are inherently important whether or not people believe they matter.
117	20	The "double counting" issue may be a red herring in the sense that the technique should measure the production function, not all the intermediate steps. For example, hydroelectric dams provide multiple services but they are not "double counted" because valuation is done on the production functions such as electricity production, recreation, flood control, etc.
122	8	If we use Figure 7, we will need to provide labels and a description or rationale for the boxes, especially those whose depiction is isolated, e.g. ecological element.