

**Material for Breakout Session D:  
Social/Psychological Methods for Ecosystem Values Assessments  
SAB Workshop, December 13-14, 2005  
Science for Valuation of EPA's Ecological Protection Decisions and Programs  
Ronald Reagan Building, Washington, DC**

**Session Leaders:**

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

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

**Contents:**

Brief overview of social-psychological methods prepared by a sub-group of the C-VPES that represents initial ideas about what roles these methods might play in ecosystem values assessments. Material is intended to stimulate discussion among members of the Committee and participants at the workshop.

**Outline of session contents**

For the purposes of EPA policy and decision making the values of ecosystems and ecosystem services are based at least in part on the judgments of stakeholders and citizens.

Social/psychological methods are proven scientific means for determining people's value-relevant perceptions and judgments about a wide array of objects, events and conditions.

Valuations and benefit assessments based on judgments by relevant samples of stakeholders and/or citizens provide an appropriate basis for EPA policy and decision making, along with economic (monetary) and bio-ecological assessments.

*Social/psychological methods are characterized by:*

- 1) An emphasis on descriptive rather than prescriptive models and reliance on empirically based theories of human values, judgments and decision making;
- 2) Acknowledgment of the important effects of the assessment contexts (e.g., representation/framing of assessment targets, mode of preference expression, perceived intentions/goals of the assessors) and the associated constraints on validity and generalizability of any assessment results;
- 3) Recognition of the effects of human predispositions, interpretations and cognitive limitations (e.g., bounded rationality, mental models, emotional/affective responses) on the outcome of any value assessment;
- 4) Use of a wide range of overt expressions of value (narratives, lexicographic scales, ratings, choices, actions);
- 5) Assessments over multiple value dimensions (e.g., biocentric, utilitarian, aesthetic, ethical) expressed in qualitative (lexical) or quantitative metrics that need not be commensurate;
- 6) Segregation of different value proponents into coherent sub-sets based on a priori social-demographic characteristics (e.g., young-old, rural-urban, eastern-western) or on

- observed patterns of expressed values (e.g., current versus future, utilization versus preservation, biocentric versus anthropocentric orientations);
- 7) Resolution of conflicts between different value dimensions and/or value proponents by explicit communication and negotiation among decision makers and stakeholders.

### **Candidate methods for ecosystem values assessments**

**Surveys:** Standardized, formal questionnaires may be conducted by mail, telephone, internet or face-to-face interview. Assessment targets are most often represented by verbal descriptions or labels, but photographs, videos or computer visualizations can be used where appropriate. Questions may be presented as multiple distinct items each focused on one aspect of an assessment target or as multi-dimensional scenarios conjoining several aspects. Response formats range from binary choices to rankings or ratings on various value scales to open-ended narratives.

*Example: Sheilds et al (2002): multi-item questionnaire, USDA Forest Service, GPRA*

*Example: Kneeshaw et al (2004): conjoint survey, wildfire risk management options*

*Example: Ribe et al (2002): perceptual survey, forest management options*

**Focus groups:** Small groups of relevant stakeholders are engaged in facilitated discussion and deliberation on selected/focused topics relevant to the assessment target. Typically open-ended narratives are collected and subjected to qualitative analyses to identify and possibly to ascertain levels of consensus on relevant issues, perspectives and positions represented by the participants.

*Example: Winter et al (2002): wildfire risk management options*

**Narrative interviews:** Individuals nominally representing possible stakeholder perspectives are asked to comment on broadly defined topics with little direction from the interviewer/assessor. Open-ended narratives are collected and subjected to qualitative analyses to explore and articulate the breadth and depth of expressed understandings and concerns relevant to the assessment target. Included in this category are various ethnographic methods.

*Example: Brandenburg & Carroll (1995): forest management in a local watershed*

**Behavioral observation/behavior trace:** Changes in the patterns of movements and activities of users or visitors are observed and correlated with changes in aspects of an environmental setting that are relevant to the assessment target. Behavior may be observed directly or recorded by cameras, counters or other automated surveillance technology. Alternatively, persisting traces of visitation or use, such as written registration lists, vegetation disturbance, soil compaction or erosion, or campfire rings may be inventoried and analyzed to indicate patterns of behavior.

*Example: Daniel & Gimblett (2000): travel patterns in a National Park*

**Interactive games:** Patterns of responses are observed in interactions with simulated (hypothetical) environments and analyzed to infer preferences and values relevant to changing features of the environments. Environmental changes may be programmed by the investigator and/or selected or initiated by the respondent. Applications of interactive games to environmental values assessment are still in the experimental stage.

*Example: Bishop & Rohrmann (2003): responses sub-urban park designs*

## Example References

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