United States Department of Agriculture

# W-3133 recommendations for future USDA research on ecosystem valuation

Presentation to the W-3133 annual meetings

*Benefits and Costs of Natural Resources Policies Affecting Ecosystem Services on Public and Private*

Carlsbad, California

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# What is the value of ecosystem improvements arising from USDA conservation efforts?

This question begs other questions like:

- How would you measure such a thing?
- How do you aggregate environmental benefits?
- Are necessary tools available?
- Is answering this question feasible?



# Some examples of recent interest in addressing this question

In 2014, the National Science and Technology Council established the Ecosystem Services Working Group

In 2015, OMB issued a memorandum stating that monetary (when feasible) or nonmonetary measures of ecosystems must be incorporated into Federal decision-making

C-FARE/USDA-OCE sponsored the 2015 workshop: Economic Valuation of Conservation-based Ecosystem Services

In 2016, C-FARE/USDA-OCE sponsored research teams assigned to value some USDA ecosystem service impacts (Lisa Wainger well be discussing efforts)

Currently, NIFA is exploring the feasibility of a program of research to support valuation research.



# The questionnaire only scratches the surface

The bottom-line question is:

*What are the values of conservation policy's impact on ecosystem services?*

We may posit that:

Providing objective answers depends on the availability and quality of relevant biophysical and economic models and data



- We invited 300+ researchers/analysts/etc (W3133 members/friends and others) to participate
- As of 1PM on 16/Feb/2017We received 96 responses

HOPEFULLY, ALL of YOU GOT AND RESPONDED TO THIS INVITATION??

… if not, it isn't too late:
http://w3133.wquestions.org/



There were eight questions on valuation issues, including two questions on current estimation capabilities

- Respondents were asked to choose one of three responses and ranked the strength of their agreement with their response: Strongly agree, agree, tepidly agree



# Question 1: The State of the Art

| Answers | Strong Agree | Agree | Tepidly Agree | Total |
|---|---|---|---|---|
| major issues to be resolved | 8 | 2 | 1 | 11 |
| with sufficient care numbers can be produced – but it is "not easily used off the shelf " | 23 | 28 | 5 | 57 |
| valuation can generate useful estimates | 12 | 11 | 4 | 28 |

- Most (57) agree that – *with sufficient care* – numbers can be produced
- Many (28) are more positive (they don't agree with *not easily used off the shelf)*
- Some (11) are pessimistic – "numbers generated by valuation methodologies *will not be robust"*

In general: agreement is not tepid, with a fair amount of "strong agreement"

# Question 2: Methodological Concerns

| Answers | Strong Agree | Agree | Tepidly Agree | Total |
|---|---|---|---|---|
| studies must meet high standards in design, etc. | 7 | 8 | 1 | 17 |
| most useful studies strive to meet high standards in design (less than perfect okay, but ... ) | 20 | 41 | 4 | 67 |
| focus on generating reasonable estimates and avoid a focus on technical accuracy | 2 | 8 | 1 | 12 |

- As with Q1, the middle answer is most preferred (*less than perfect okay, but…)*
- Some (12) advocate concur with *avoid a focus on technical accuracy*
- Some (17) agree on the need for high standards -- *a council is needed to develop a rigorous protocol*



## **Question 3:** Using stated preference

| Answers | Strong Agree | Agree | Tepidly Agree | Total |
|---|---|---|---|---|
| far from settled | 7 | 7 | 2 | 17 |
| provide useful information so long as careful attention to issues | 41 | 18 | 4 | 65 |
| better to have possibly biased estimates than to have no estimates | 5 | 8 | 1 | 14 |

- Similar to Q2! But stronger agreement.
- Over 40% (41) **strongly** agree that *Stated preference methods can provide useful information, so long as careful attention is given to issues likely to bias results*.



## **Question 4:** Using national recreation surveys

| Answers | Strong Agree | Agree | Tepidly Agree | Total |
|---|---|---|---|---|
| resources are better spent elsewhere. | 2 | 0 | 1 | 3 |
| questions needs to be changed, and design improved | 14 | 18 | 5 | 39 |
| with modest changes they can continue to be cost-effective | 16 | 15 | 12 | 46 |

- Few would defund these surveys
- Many (46) are fairly happy with the surveys (about 1/3 are tepid)
- But many (39) think they need improvement



## **Question 5:** Coverage of existing studies for program analyses

| Answers | Water | Wildlife | Other |
|---|---|---|---|
| Few applicable to ecosystem services affected by agriculture are available | 5 | 25 | 20 |
| A number of benefit estimates exists but there are large gaps | 69 | 61 | 54 |
| We have a rich though not complete set of benefits estimates | 16 | 4 | 4 |

- For all three categories, most believe *estimates exist, but there are large gaps*
- Better suite of water estimates than wildlife (which is better than other)



## **Question 6:** The use of benefit relevant indicators

| Answers | Water | Wildlife | Other |
|---|---|---|---|
| It is not wise to use BRIs | 11 | 12 | 13 |
| BRIs are useful but should be validated | 68 | 67 | 58 |
| For purposes of ecosystem service valuation, rough indicators are often sufficient | 10 | 10 | 11 |

- For all 3 categories , most think BRIs are useful – but need validation
- Some (around 10) don't much like BRIs (for any caterogy)
- About as many think *rough indicators* are sufficient.

## **Question 7:** Non-marginal vs marginal estimates

| Answers | Water | Wildlife | Other |
|---|---|---|---|
| Easier to estimate **non-marginal** values | 17 | 21 | 14 |
| Equally difficult | 37 | 33 | 33 |
| Easier to estimate **marginal** values | 35 | 36 | 34 |

- Fairly diffuse – more think marginal values easier to estimate than non-marginal values, but many say equally difficult

## **Question 8:** Biophysical models vs. economic models

| Answers | Water | Wildlife | Other |
|---|---|---|---|
| greater uncertainty in **economic** valuation models | 30 | 24 | 20 |
| Equally uncertain | 47 | 47 | 42 |
| greater uncertainty in **bio-physical** models | 16 | 22 | 22 |

- Most see each type of modeling as equally difficult
- Somewhat more see greater issues with economic modeling
- Somewhat more faith in water based biophysical models than in wildlife (or other)

# **Question 9s:** Valuation Journal

| Answers | % agree |
|---|---|
| Current journals do adequate job of publishing valuation studies | 18% |
| current journals should publish more ecosystem service valuation studies | 53% |
| There is a great need for a valuation journal | 53% |
| Most researchers will **not** be interested in submitting to valuation journal | 13% |
| Initial skepticism, bit over time will be seen as valuable | 44% |
| Many researchers **will** be interested in submitting to a valuation journal | 50% |

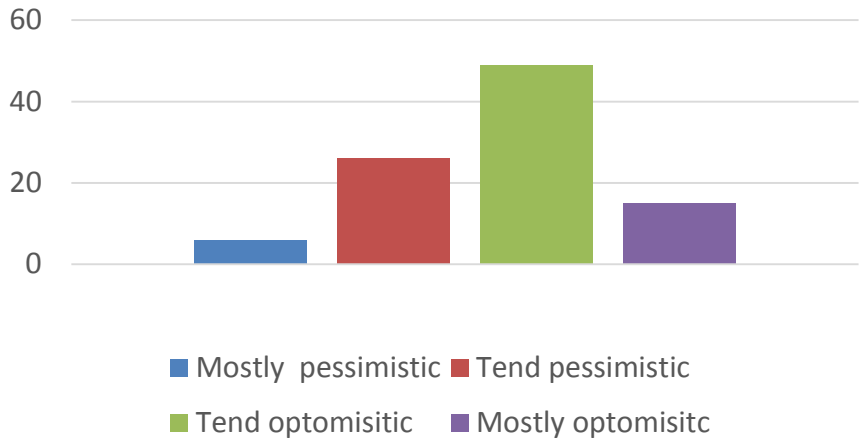
- > 80% not much happy with current journals
- Over half think current journals should to more, and over half think there is a **great** need for a valuation journal (need to check correlation!)
- Few think there will be not interest in such a journal:
  - About half think there skepticism will fade,
  - about half think researchers will be in interested in submitting (these are NOT mutually exclusive answers)



**Types of respondents:**

| Work for | |
|---|---|
| Academia | 56 |
| Government | 29 |
| NGO | 2 |
| Business / consultancy | 3 |
| Other | 1 |

**Answering pattern (by # of respondents) for Q1 to Q6**



# Gleanings from the questionnaire

Not surprising? Most people are “in between” – they don’t give the doom and gloom answer, nor the everything is coming up roses.

Broad support for a valuation journal, or for current journals to publish more valuation studies

And FEEL FREE to download the response data from http://w3133.wquestions.org



# Comments/suggestions/questions?

- Is there a need for a *council* – to develop a set of rigorous protocols for vetting research proposals and/or estimates
- How does one assemble a interdisciplinary research team?
- Can a single study provide value estimates of most ecosystem services?
- What methods might analysts use to get 'big picture' estimates?
- How does one evaluate research proposals?
- ???