APPENDIX A3: RESEARCH THEMES AND QUESTIONS

PR Economic Workshop (8-11 Sept 2014)

4 June 2014

What are your top research themes/questions?

Responses received by:

Dan Lew (AK), Lew Queirolo (AK), Dan Holland (NW), James Hilger (SW), Steven Stohs (SW), Minlin Pan (PI), MinYang Lee (NE), Kristy Wallmo (S&T), Rebecca Lent (MMC)

Dan Lew (AK)

Research Themes

1. Measuring economic values of protected species
2. Incorporating economic values in protected species policy analyses
3. Issues in communicating protected species economic study results
4. The economic effects of climate change on protected resources

Research Questions

1. How do we bridge the gap between the species values being measured in non-market valuation studies and the values needed in policy analyses?
2. What are the key issues in non-market valuation that are important to answer to improve estimates of public willingness to pay for protected species protection?
3. How can we improve communicating economic information about protected species to stakeholders, analysts, and the public?

Lew Queirolo (AK)

How might we "encourage" treatment of global climate change in Agency CHD assessment? It would appear to be precisely analogous to the mandatory "Energy Supply Impact" requirement we currently must provide. (ii) How may we encourage biologists to more effectively articulate ecosystem benefit flows, so their "uses" and "users" can be identified in an economic context? (3) When literal irreparable harm to an ESA-listed species' critical habitat is threatened by an action, is 'discounting' at ANY positive rate appropriate? Inter-generational transfer arguments, circa 1970s, asserted use of negative discount rates could be justified in certain (extreme) circumstances. Any merit?

Dan Holland (NW)

1. Managing highly uncertain bycatch (role of risk pools, cooperatives, etc.)
2. Bycatch offsets (can higher takes of protected species be allowed in some cases in return for offsets such as habitat protection or remediation)
3. How do we deal with species that are almost certainly going to go extinct regardless of what we do.

James Hilger (SW)

1. Program Evaluation Literature (treatment–control, difference-in-differences, etc).
2. Impact of Information on Consumer Behavior
3. Heterogeneity in Random Utility Models
4. Development of Economics Impact (Contribution) Multipliers and Estimates.

Steven Stohs (SW)

1. Statistical inference for rare event bycatch data, including economic applications
2. Transfer effects due to unilateral regulatory approaches in fisheries with transboundary target and bycatch species
3. Metrics for comparing bycatch impacts across fishing methods (e.g. indexes of bycatch impacts)
4. Measuring regulatory impacts of pr bycatch reduction measures
5. Economic costs and benefits of alternative bycatch reduction regulatory regimes

Minling Pan

1. Top research themes/topics
    - Measure trade-off between conflicting management objectives
    - Measure trade-off under different policy choices
    - Assess the spill-over effect of an area limited regulation to un-regulated areas

2. Top research questions
    - How to measure the conflict management objectives between sea turtle protection vs maximum net return to fishery;
    - How to measure the ecosystem services of the 82 coral species (potential listing) and the trade-off between conflicting servicesHow to measure absolute and relative value between different PR species, such different marine protected resources, and marine vs. land-base PR;

Kristy Wallmo (S&T)

1. Aggregation: How should we we think about aggregating willingness-to-pay estimates for policy purposes? How do we incorporate heterogeneity (spatial, taste parameter, other?) in aggregation?

2. Hypothetical Bias: What is the extent of hypothetical bias in stated preference surveys? To what extent can we validate WTP estimates with RP or other data?

3. PR Management:How does economic research facilitate protected species recovery and what type of research has (the most?) utility toward this end?

Rebecca Lent (MMC)

I am not conducting any research, however, I do have some favorite research questions:

- Estimating the value of marine mammals
- Including marine mammals in NEPA analyses
- Economics of climate change impacts on marine mammals

Denise Johnson (SE) Suggested Workshop Topics and Questions

In preparing the following topics and questions, PRD and SSRG were asked to identify specific PR socioeconomic information or research needs they would like addressed. These needs are included in the list of topics below.

A. Topics:

1. Exploring alternative reminders of alternative expenditures (substitute goods) to improve contingent valuation (willingness to pay) studies of PR. The 1993 NOAA Panel on Contingent Valuation recommended that respondents must be reminded of alternative expenditures (substitute goods) when responding to willingness to pay (WTP) questions. This topic is motivated by a recent doctoral dissertation (Myers 2013) that uses an alternative reminder in assessing the willingness to pay for the Atlantic red knot and also includes additional recommendations to improve CV studies of PR.

2. Potentials for and pitfalls of using ecological footprint accounting in estimating socioeconomic benefits of PR. The Ecological Footprint (EF) has been used as an accounting tool to estimate for a given year, how much of the Earth's biologically productive land and sea area is required to provide for a given human population's (biological) resource consumption and waste assimilation(Ewing et al. 2009, Wikipedia, Hagglund 2013). EF accounting is the comparison of a population's demand for resources (EF) to its available biologically productive land and sea area (biocapacity).

3. Including a food security approach in the estimation of MPA socioeconomic benefits to the surrounding community(ies). Malleret King (2000) uses such an approach to estimate the

impacts of MPAs on surrounding fishing communities in Kenya. It may be particularly useful in estimating benefits of MPAs in the U.S. Caribbean and other island areas.

4. Developing a behavioral model that incorporates costly targeting (i.e. cost of avoiding endangered sea turtles). This is motivated by the cost to the Gulf longline fleet of decreasing their interactions with endangered sea turtles.

5. Developing a mixed methods approach to estimating the combined economic values of corals as species and habitat. This is motivated by the listing of elkhorn and staghorn corals, which have value in and of themselves and as coral-reef habitat for other species.

B. Questions:

1. What is PR economics doing:

- right?
- wrong?
- could do better?

2. Would PRD be better served by PR socioeconomics, rather than PR economics?

3. What can we learn from other federal and state agencies that do PR economics?

Sources:

Ewing B, Goldfinger S, Oursler A, Reed A, Moore D, Wackernagel M. 2009. The Ecological Footprint Atlas 2009. Oakland: Global Footprint Network.

Hagglund L. 2013. A Systems-Based Approach to Ecological Footprint Accounting. Masters Thesis. Geography. Indiana University.

Mallert King D. 2000. A food security approach to marine protected area impacts on surrounding fishing communities: the case of Kisite Marine National Park in Kenya. Doctoral Dissertation. Economics. University of Warwick.

Myers KH. 2013. The Effect of Substitutes on Willingness to Pay for Endangered Species: The Case of the Atlantic Red Knot. Doctoral Dissertation. Marine Studies. University of Delaware.