

May 27, 2016

The Honorable Dr. Kathryn Sullivan
Administrator
National Oceanic and Atmospheric Administration
Herbert C. Hoover Building, Room 6811
14th Street & Constitution Avenue, NW
Washington, DC 20230

Dear Dr. Sullivan:

On behalf of the NOAA Science Advisory Board (SAB), I am pleased to transmit to you the report, “An Assessment of the Use and Potential Use of Ecosystem Service Valuation within NOAA”. The SAB approved this report at its April 28-29, 2016 meeting.

NOAA requested the SAB’s Ecosystem Sciences and Management Working Group (ESMWG) to conduct a review of its use of Ecosystem Service Valuation (ESV). The ESMWG reviewed the use of ESV in NOAA using a number of methods including semi-structured interviews with NOAA staff, literature reviews of NOAA documents that describe the decision-making contexts within which ESV might play a role, scientific literature describing ESV methods, applications and use by federal agencies, as well as extant federal guidance.

The report identifies a number of findings and recommendations; some key findings and recommendations include:

- The practical impact of recent federal mandates to incorporate ecosystem services information “where appropriate and practicable” is reduced by individual agency and line office decision-making contexts which, as currently established, often restrict the role of ESV.
 - Constraints in the capacity to conduct ESV imply that the direct relevance of these estimates—or the capacity to use ecosystem service valuation to meet line office mandates—will be an important determining factor in the use of ESV.
 - There is a need to clarify exactly when and how ESV is relevant to specific decisions made by NOAA, including how the scale of ESV matches the scale at which decisions are made. This requires a move away from general, vague mandates to “consider ecosystem services.”
 - There is a need to reconcile management mandates with ESV—such that ESV has an impact on decisions.
 - Ideally, ESV should be implemented in a way that is organic and central to NOAA’s mission and the context of agency decisions, and that helps inform and enhance decision-making. Given the constraints facing the agency, however (e.g., current structure of the line offices, decision-making contexts, resource constraints, lack of social science capacity), there is a concern that ESV will be conducted *pro forma* in order to meet new mandates.
- NOAA has the capacity to conduct high-quality ESV, particularly in a few targeted areas (e.g., fisheries). However, NOAA currently lacks the internal capacity (particularly in social science) to apply high-quality ecosystem service valuation broadly across the Agency, and to significantly expand applications of ESV.

- Although there is increasing discussion of ESV across the agency, a large proportion of direct applications are to recreational and commercial fisheries.
- The frequent highlighting of individual ESV success stories across the agency can obscure the fact that comprehensive ESV (outside of a few targeted services) is rarely implemented.
- Reliance on “one-off,” isolated studies of individual ecosystem services—while useful to inform (or highlight the value of) NOAA activities in specific cases—is unlikely to have a meaningful influence on the way NOAA approaches its mission.
- Greater attention is needed to the assessment of the validity of different methods for ESV, as related to the need for accuracy in different decision contexts. The *perceived* validity of some methods within the agency does not reconcile with the *objective* validity of these methods as evaluated by the scientific community. The distinction between perceived and objective validity/accuracy is particularly relevant for methods such as stated preference valuation, different methods for benefit transfer, and the use of off-the-shelf decision-support tools.
- There is a need to better distinguish measures that may be interpreted as appropriate measures of economic value, versus other economic or monetary measures (e.g., jobs, economic impacts) that do not reflect economic values.
- There is a concern that too much emphasis is placed on off-the-shelf decision support tools that rely on some of the least accurate methods for ESV, particularly with regard for economic aspects of valuation.
 - Given current practice in these tools, even the best developed should be used when more accurate methods are infeasible, and when inaccurate estimates of value are acceptable.
 - Care is needed to distinguish tools and methods that generate valid and consistent measures of ecosystem service value, versus methods that generate monetary and non-monetary metrics that are not meaningful as economic value measures.
- Valid and accurate ESV requires the direct involvement of natural science and economic experts from the outset, to ensure that integrated methods are applied from initial scoping through data collection and analysis.
 - Valuation is about human behavior (trade-offs / responses). It is important to incorporate the human behavioral responses as part of the overall context of the ecosystem services assessment and decision-making approach.
 - The construction of the “ecological production function” in various contexts (EBFM, IEA, policy analysis, etc.) is among the most challenging issues limiting the application of economic analysis including valuation.
- It is often reported that accurate measurement of ESV can inform and improve decision making. A corollary to this statement is that in certain cases incorrect or suboptimal decisions may be made if ESV is not used. Without incorporation of the most significant market and non-market values into decision making it is possible to select options or policies that are not the best for society.
 - In general there is a risk of making the incorrect decision regarding investments (e.g., restoration investments), policy decisions or regulatory actions if significant ecosystem service values are excluded.
- Among the most important steps that can be taken by the agency is development of careful and clear recognition—across the whole of NOAA—of:
 - Whether and how ESV is relevant to different types of decision contexts that occur at different spatial and temporal scales,
 - How ESV can be integrated as an organic and core part of NOAA’s mission, and in what areas this makes sense,

- The types of methods suitable to measuring different types of values, and the true advantages and disadvantages of these methods,
- What additional capacity—at a minimum—is required to address new mandates for ecosystem services research within the agency?

The SAB encourages NOAA to provide a response, as you deem appropriate, at the first opportunity. Please let me know if you have any questions, comments or concerns.

Sincerely,



Lynn Scarlett
Chair, NOAA Science Advisory Board
Managing Director for Public Policy, The Nature Conservancy

Attachment

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