



Incorporating Ecosystem Service Values into U.S. Marine Management: Challenges and Opportunities

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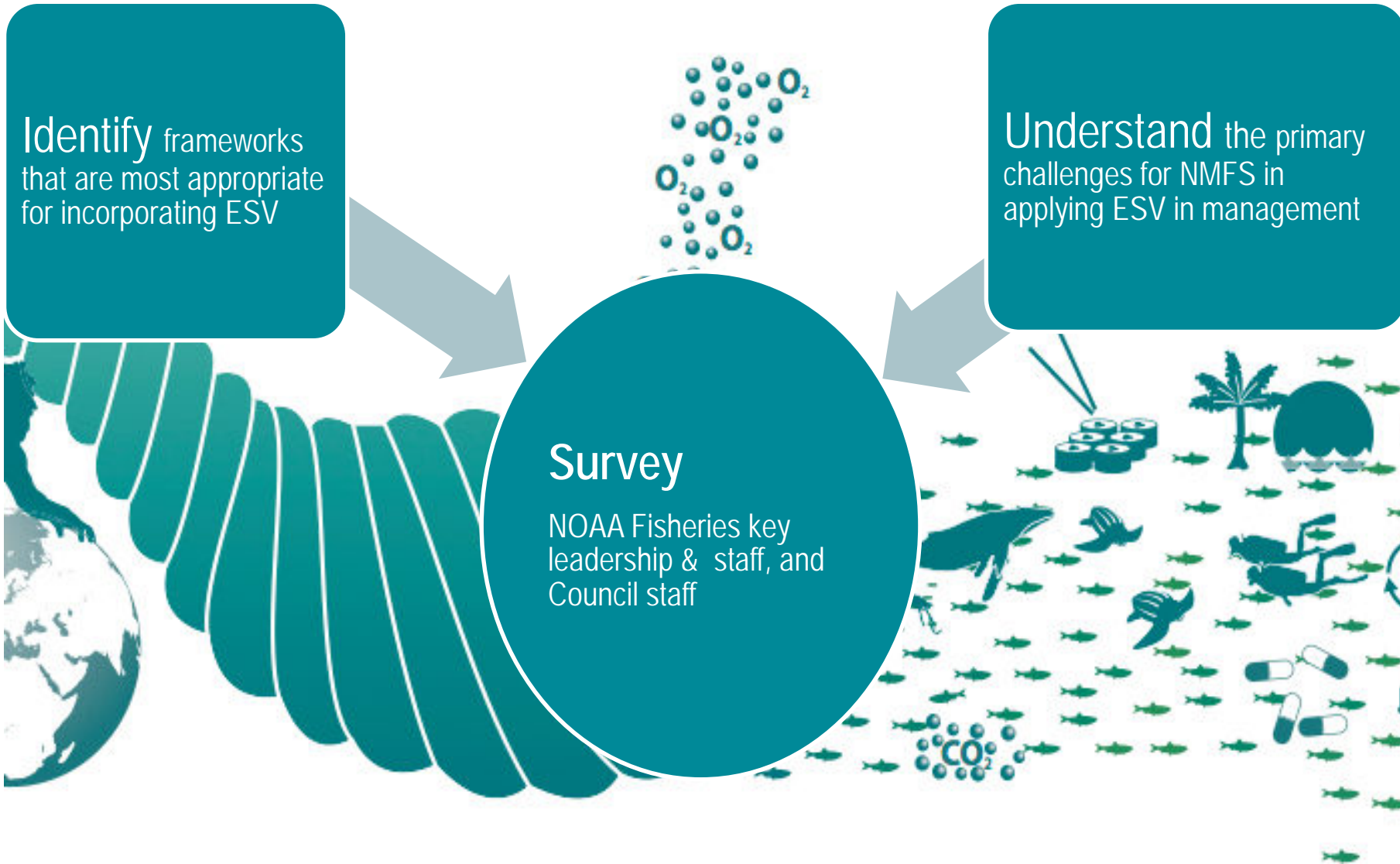
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Understanding Where We Are

- High level directives and policy documents related to Ecosystem Service Values (ESV)
 - Incorporating Ecosystem Services into Federal Decision Making (2015) & others direct agencies to promote consideration of ecosystem services
- ESV Final Report to NOAA (2016)
 - The agency should determine and recognize:
 - 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

How to Move ESV Forward in NOAA Fisheries?

- In 2017 NOAA Fisheries established an agency wide working group on Ecosystem Services Valuation WG
 - Economists working in policy/management arena and research
 - Representation from multiple U.S. regions
- WG has undertaken two primary projects
 - Marine Ecosystem Service Valuation “Best Practices”
 - Understanding how best to integrate ESV into marine management



Survey: Ecosystem Service Values and NOAA Fisheries

- Draft Instrument Development
 - In review from Working Group
 - Contacts from each NOAA Fisheries management region and HQ will provide feedback on draft instrument
- Respondent Universe
 - NOAA Fisheries leadership
 - Key staff among Offices at NOAA Fisheries
 - Staff working in topic areas where ESV may be appropriate
 - Fishery Management Council Staff
- Survey will be implemented online
- Implementation in FY 19

Survey: Ecosystem Service Values and NOAA Fisheries

- Preferences for types of marine ecosystem services relevant to NOAA Fisheries
- Familiarity and experience with the concept of ESV
- Decision-making contexts that are best-suited for incorporating ESV
- Challenges to using ESV
- Respondent characteristics

Preferences for ESV

QX. In your opinion how important is it to have economic values for the ecosystem services below (check one box)?

Food provision (e.g. finfish, shellfish, plants)

Medicine or pharmaceuticals provision

Provision of a carbon sink (i.e. carbon sequestration)

Shoreline protection (e.g. erosion control and storm buffer)

Provision of critical habitat for marine plants and animals

Recreational boating opportunities (e.g. kayaking, sailing, motor-boating)

Recreational fishing opportunities

Recreational wildlife watching opportunities

Recreational opportunities such as scuba diving, snorkeling, spear-fishing

Recreational opportunities such as swimming, surfing, and paddle boarding

Provision of cultural, spiritual or religious benefits

Provision of existence benefits (e.g. knowing that something exists even if they aren't seen or used)

Provision of aesthetic or inspirational benefits

Scale:

Very important

Somewhat important

Not very important

Not important at all

Unsure

Experience with ESV

QX. Have you been involved in a decision-making process that, at any time in the process, used or discussed the use of ecosystem service values? (check one box)

- Yes
- No

QX. In your latest involvement in the use or discussion of ecosystem service values, which of the following apply? (check all that apply)

- Ecosystem service values were used in analyses supporting a proposed regulatory action or change to a regulation
- Ecosystem service values were used in analyses supporting a management framework (such as Ecosystem Based Management, Coastal and Marine Spatial Planning, Integrated Ecosystem Assessment, etc...)
- Ecosystem service values were discussed for context but not used in the analysis
- Other (please briefly explain the circumstances in which ecosystem service values were used)

QX. Are you aware of instances where ecosystem service values have been used or discussed in support of decision-making, even if you were not involved in the process? (check one box)

- Yes
- No

Decision-making contexts for ESV

ESV is often associated with the use of management frameworks such as ecosystem-based management, ecosystem-based fisheries management, integrated ecological assessments, or other approaches that take a holistic, systems-level approach to policy and management questions. For the next few questions, we will refer to these approaches as EBM approaches.

QX. In general, how familiar are you with EBM approaches? (check one box)

- Very familiar
- Somewhat familiar
- Familiar
- Not very familiar
- Not familiar at all

QX. How much experience do you have working on or with EBM approaches? (check one box)

- A lot
- Some
- A little
- None
- Don't know

QX. In your opinion, how well are EBM approaches being used in NOAA? (check one box)

- Very well
- Somewhat well
- Not very well
- Not at all well
- Don't know/not applicable

QX. In the near-term future, do you think EBM approaches will be used more, less, or about the same as they are currently? (check one box)

- Less than currently
- About the same as currently
- More than currently

QX. In the near-term future, do you think EBM approaches should be used more, less, or about the same as they are currently? (check one box)

- Less than currently
- About the same as currently
- More than currently

Decision-making contexts for ESV

QX. In your opinion, how would having ecosystem service values available improve decision-making related to each of the following? (check one box)

Decision-making related to...
changes to catch quotas
changes to sector allocations
temporary closures of area marine areas
long-term closures of marine areas
LNG operations
other mining operations
dam removals
ESA decisions
Essential Fish Habitat designation
Coastal and Marine Spatial Planning
Integrated Ecosystem Assessments
Ecosystem-based Management
Management Strategy Evaluations

Scale:

ESV does/would significantly improve decision-making

ESV does/would improve decision-making

ESV has limited utility for decision-making

Unsure

Challenges

QX. Please indicate your level of agreement with each of the following statements (check one box):

The science underlying the valuation of marine ecosystem services is too uncertain to use the values in management.

Using marine ecosystem service values is an appropriate way to include human preferences in decision-making.

Estimating the value of marine ecosystem services is too expensive to make the undertaking worthwhile for management.

Including marine ecosystem service values is best done on a case-by-case basis.

Marine ecosystem service values should be included to the greatest extent possible when making decisions about the marine environment.

NOAA Fisheries stakeholders are skeptical of using marine ecosystem service values in management.

We currently do not know enough about physical/biological/ecological relationships within ecosystems to be able to estimate most ecosystem service values.

Completing the currently required analyses is all that is necessary to ensure good stewardship of marine resources and habitat.

Time and resource constraints are a large impediment to systematically using marine ecosystem service values in management.

It is unethical to put an economic value on ecological or biological components of ecosystems.

Using marine ecosystem service values is a good way to evaluate trade-offs associated with alternative management scenarios.

Scale:

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Unsure

Respondent Characteristics

QX. Which of the following do you do for your work at NOAA or the Fishery Management Council?

(check all that apply)

- Research: biology or ecology
- Research: physical oceanography
- Research: economic
- Research: anthropology or sociology
- Management/policy analysis: fisheries
- Management/policy analysis: protected species
- Management/policy analysis: coastal or marine habitat
- Coordination/planning
- Stakeholder facilitation
- Other (please specify)

QX. In which region of the U.S. do you work? (check all that apply)

- Northeast
- Mid-Atlantic
- Southeast
- Gulf Coast
- West Coast
- Pacific Islands
- Alaska
- Other _____

QX. How many years have you worked in your current position? _____

QX. What is the highest educational level you have attained? (check one box)

- Some high school
- High school graduate
- Some college
- Associate's or Technical Degree
- College graduate
- Graduate Degree

Thank you for taking the time to complete this survey – your responses are appreciated. Please make any additional comments in the box below.

Next steps

- Complete development of draft survey instrument and circulate to key contacts in each region for feedback
- Conduct several in-person interviews to test instrument
- Revise and field in FY19



Thank you!