

Socioeconomic Research & Monitoring in OCNMS Ecosystem Services and Proposals to Measure them

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Research • Education • Conservation • Stewardship

Ecosystems Services: Florida Example

Definition. An Ecosystem Service is an attribute of the natural system that people care about.

Ecosystem Service	Attributes that people care about	Measures of Value of Service
1. Recreational Opportunities Snorkelers, SCUBA Divers, Glass-bottom boat riders, Sight fishing	Water clarity	1. Value to the Economy: Spending and associated Sales/output, income and Employment 2. Economic value: consumer's And producer's surplus 3. Preference rankings (non Economic value)
2. Opportunity to harvest and consume fish species. Commercial and consumptive Recreational fishing	Large number and variety of fish, Abundant and safe seafood, Intact, functioning, and resilient Habitat for quick species recovery	1. Value to Economy: Revenue and income received by fishermen and associated value added in wholesaling, processing, retail, and restaurants and associated increase in income and jobs. 2. Economic Value: Consumer's and producer's Surplus of harvested fish. 3. Preference rankings (non-economic value)



Proposals for Socioeconomic Studies in Washington that might be a benefit to OCNMS for measuring Ecosystem Services

1. Surfrider proposal to replicate Oregon study on non-consumptive recreation in Washington

Study proposes to:

- a. Estimate total use (number of participants, trips and person-days by activity).
- b. Estimate spatial use (Ecotrust Ocean Map tool).
- c. Value to Economy: Spending and associated impact on local and regional economy in terms of sales/output, income and employment.
- d. Economic value: Consumer's surplus.



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Economic value: Use of the Random Utility Model (RUM) to estimate the value of attributes of the natural system and thus ecosystem services.

RUM relates people's spatial site choices to do activities based on the cost of accessing the site and the natural attributes of the sites.



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Surfrider Proposal: Issues that need to be addressed to make the study useful for OCNMS

- 1. Will sample sizes allow for reliable estimates of total and spatial use by activity inside OCNMS?**
- 2. Will sample sizes allow for estimation of the RUMs for different activities?**
- 3. Are there available attributes data in spatial specificity that can match up with use data?**



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Surfrider Proposal: Problem with RUM. Not likely to have attributes data and even if did, they may be correlated and present the problem of not being able to statistically estimate relationships.

Alternative Approach: Stated Preferences Choice Model

- 1. A survey with choices of bundles of attributes of different levels of quantity/quality at different costs.**
- 2. People simply choose their most preferred alternative as they do in real markets.**
- 3. Statistical design is used to solve problem of correlation between attributes and extrapolation across all attributes and levels of attributes.**



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2. Washington's Working Coast

Purpose: “ *In these challenging economic times, communities up and down the coast need to develop more detailed understanding of the contributions of marine resource-based jobs and to seek collaborative ways to sustain and expand them.*”

Study proposes to “*Develop a portrait, at the county level, of the marine resource-based economy.*”

- **Jobs and relative importance to local, regional and state economies.**
- **Threats to marine resource-based jobs (changes in environmental conditions, market competition, and fluctuations in demand).**



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- **Opportunity for new enterprises, jobs created, and enhanced efficiency to make coastal communities more sustainable.**
- **Cluster analysis of marine trades. (promote particular places as advantageous locations for certain types of businesses).**
- **Compilation of scientific research, historic studies, and socio-economic analyses (Annotated bibliography).**
- **Economic Summit of Region's Marine Resource-based Industry Leaders.**
- **Implementation through contracts with Washington State Universities.**



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Washington's Working Coast

Issues that need to be addressed to make the study useful for OCNMS

Commercial fisheries

- 1. What is the current ability to use existing data for spatial catch estimation?**
- 2. Is the spatial resolution good enough so that a good estimate of how much is caught within the boundaries of the OCNMS?**
- 3. Does the currently collected data on catch include where the fish is landed (port where landed and home port)?**
- 4. Are their costs-and-earnings studies available for the various fisheries?**



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5. Is their information on how fish move through market channels (e.g. wholesale, processing, retail, restaurant and exported) and how value is increased at each market channel? (Pacific States Marine Fisheries, Fishery Economic Assessment Model).

Recreational fisheries

- 1. What is the current availability of spatial recreational use data (trips or person-days)?**
- 2. Is the spatial resolution good enough so that a good estimate of the amount of activity that takes place inside OCNMS?**
- 3. Does the current data provide point of access?**
- 4. Does the current data provide residence and/or point of where started trip?**



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- 5. What is the geographic scope of the sample? (want to be able to distinguish between residents and visitors to the area)**
- 6. Are there plans for new surveys?**
- 7. How will the tribes be treated in this study? Marine resource-based uses are important to the economic development of the tribes.**
- 8. Cannot use National ocean Economics Project (NOEP) Ocean Economy data. This data does not establish the relationship between ocean resource use and the economy.**



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What can ONMS contribute to these studies?

- **ONMS can do the Value to the economy estimation using the IMPLAN Input-output Model.**
- **The output is the total sales/output, value added, income and employment generated in local and regional economies for each use (e.g. commercial fisheries, recreational fisheries, other recreational activities)**
- **We can also help in survey sample and questionnaire design.**

