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The EBM Toolbox: How can we find hotspots for marine ecosystem services?

Editor's note: The goal of The EBM Toolbox is to promote awareness of tools for facilitating EBM and MSP processes. It is brought to you by the EBM Tools Network, a voluntary alliance of tool users, developers, and training providers.

Several months ago, an EBM Tools Network member asked a question about how a project in Abu Dhabi could map marine ecosystem service hotspots. Mapping marine ecosystem service hotspots involves mapping relevant marine ecosystem services, then assimilating results for individual ecosystem services in an ecologically and politically justifiable manner. Neither of these tasks is trivial for various reasons: 1) the spatial data needed to map ecosystem services is severely limited, 2) ecosystem services are very heterogeneous, making them difficult to compare (e.g., some can be easily quantified in monetary terms while others cannot), and 3) developing societal consensus on how to weight diverse ecosystem services is extremely difficult.

EBM Tools Network members shared several resources – targeted at both marine and terrestrial/coastal environments – relevant for aspects of this work. Two of the most promising and approachable applicable tools for marine environments include:

- **InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs):** The tool suggested most frequently for conducting this work is InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs), which has models specifically tailored to marine environments (e.g., fisheries, aquaculture, offshore wind, etc.)
- **Mapping Ocean Wealth (MOW):** A tool that may prove useful to projects wishing to map marine ecosystem service hotspots is Mapping Ocean Wealth (MOW). MOW models and maps ecosystem services (e.g., recreation and tourism, natural coastal protection, coral reef fisheries, and carbon storage and sequestration) under varying conditions and at multiple scales in coastal and marine environments. Maps and models are available for Australia, the Caribbean, the Gulf of California, Indonesia, Micronesia, and the Atlantic Coast of the US.

Other resources that practitioners might find useful for this work include:

- A compendium of [tools that can be used to map marine ecosystem services](#)
- Methods and case studies of [marine ecosystem service mapping and valuation](#)
- A [new report that provides context](#) for the usability and appropriate application of a range of marine and terrestrial ecosystem services mapping tools
- A [short description of the process and gaps in mapping marine ecosystem services](#), as well as some potentially relevant datasets
- A review of [how a number of researchers have defined "ecosystem services hotspots"](#)
- And a paper that examines the [spatial distribution of provision levels of aggregated ecosystem services](#) in the European North Atlantic.

If you are interested in seeing the full compilation of resources and tools suggested by the EBM Tools Network, which includes additional ideas for bringing the values of diverse ecosystem services together, please send a note to the EBM Tools Network Coordinator at ebmtools@naturereserve.org.

Ask the EBM Tools Network

If you have a question about tools and resources for coastal and marine conservation and management that you would like to ask the EBM Tools Network, join their free discussion list at https://list.openchannels.org/mailman/listinfo/ebmtools_discuss and post your question to ebmtools_discuss@list.openchannels.org.

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