

Moving towards regional coastal and marine spatial planning (CMSP) in the Northeast

A summary of four place-based case studies for the Northeast Regional Ocean Council (NROC)

Prof. Heather Leslie and her 17 students at Brown University researched four case studies of place-based ocean management (Florida Keys National Marine Sanctuary, California's Central Coast Marine Life Protection Act process, Massachusetts Ocean Plan and Australia's Great Barrier Reef Management Plan Review), to glean lessons relevant to NROC's developing engagement in coastal and marine spatial planning and regional ocean governance. Management plans and other case-specific documentation were the primary sources of information for this analysis.

While the four cases differed in terms of objectives, mandates and motivating factors, geographic scale, and the decision support tools and management strategies employed, four common lessons emerged:

1. Stakeholder and partner engagement can take diverse forms, but the most successful are those which are most attuned to the local sociopolitical environment.
2. Decision support tools can help integrate existing data, identify critical gaps in knowledge, assess cumulative impacts, and evaluate tradeoffs among different human activities and values.
3. Coastal and marine spatial planning and implementation is necessarily an iterative process, and recognition of the time frames required to observe results is critical.
4. A clear mandate and funding are vital to the success of coastal and marine spatial planning.

To learn more about related ongoing research, please contact Prof. Leslie at Heather.Leslie@brown.edu or 401 863 6277.



Lessons learned

1. Stakeholder and partner engagement

During the Massachusetts Ocean Planning process, EEA and its public-private partner, the Massachusetts Ocean Partnership, engaged with stakeholders in diverse and open fora, including web-based tools, 'dock' visits, and public meetings. *For more information on the Massachusetts process and engagement tools, see <http://www.massoceanpartnership.org/>*

2. Decision support tools

A wide array of tools, requiring varying technical capacity and levels of data, are available to assist in marine spatial planning efforts. In the central California MLPA process, for example, the interactive, web-based software, MarineMap (<http://marinemap.org/>), enabled planners, scientists, and stakeholders to visualize how differing ecological and social criteria influenced marine protected area network design and to evaluate the likely impacts of different designs. *For a database and examples of relevant decision support tools, see www.ebmtools.org*

3. An iterative process

While scientists have documented increases in species targeted by fisheries in as little as three years following implementation, biological effects of marine reserves in Australia and Florida are still emerging decades after initial management measures were put in place, and often followed iterative interventions based on adaptive management principles. Fewer data are available on social and institutional outcomes, but these too will likely emerge on varying time scales. *For an overview of outcomes associated with marine reserves and other types of zones utilized in coastal and marine spatial planning, see PISCO 2007 (<http://www.piscoweb.org/publications/outreach-materials/science-of-marine-reserves>).*

4. Importance of mandate and funding

In each case, a clear legislative or regulatory mandate enabled the planning process and helped to ensure a reliable funding stream. But the institutional and fiscal models are diverse, including public-private partnerships in California and Massachusetts, and federally dominated funding in Australia and Florida. *For an analysis of these issues specific to New England, see Gancos, Leslie, et al., in review, available by request from Prof. Leslie.*



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BROWN

Regional Coastal and Marine Spatial Planning Case Study Abstracts

Prepared for the Northeast Regional Ocean Council (NROC)

Australia's Great Barrier Reef

The history of management on Australia's Great Barrier Reef offers countless instances of trial, error and revision. Lessons from this adaptive process, which have successfully fostered ecological and socioeconomic wellbeing, make the Great Barrier Reef a useful case study for place-based marine management efforts elsewhere. The greatest management strengths of the Great Barrier Reef Marine Park (GBRMP) are its adaptability, implementation of effective decision support tools, stakeholder involvement, and transparent communication between different sectors of management, including stakeholders. The Great Barrier Reef Marine Park Authority (GBRMPA) established a 25-year plan, which has guided initial management of the Park since 1994. This plan is reviewed every 5 years, using the best scientific and cultural information available. Data from these sources inform powerful decision support software for reserve selection and tradeoff analyses. Stakeholder groups meet at least once a year, if not multiple times, to discuss possible management changes in response to new research and technology—all organized by the GBRMPA. GBRMPA keeps the Australian public well informed of changes in park regulations and zoning with pamphlets and an easily navigable, well-organized GBRMPA website. Since management efforts began, fish stocks have recovered and coral ecosystems have stabilized while tourism and fisheries have remained powerful economic forces. Communication with and among stakeholders, and continual review of the management plan reduce user conflicts and present an acceptable standard to all stakeholders. **We conclude that the NROC would benefit from emulating this effort by engaging as many stakeholders from the start as possible, incorporating their input throughout the management process, and taking advantage of the best science and decision support tools available.**

California Marine Life Protection Act, Central Coast Planning Process

In 1999, the California Fish and Game Commission passed the Marine Life Protection Act, calling for the development of a comprehensive network of marine protected areas. In 2004, the Marine Life Protection Act Initiative was approved to aid in the realization of the network design based on the best available scientific information. This case study analyzes the planning, implementation and monitoring of the Central Coast Region's Marine Protected Area (MPA) array through its network development process. **Features of this case study may serve useful in the planning of MPA arrays and/or similar protection units in other regional ecosystem based management efforts, like NROC's. Such features include: high stakeholder involvement in the protected area development process, state and federal enforcement collaboration, an adaptive management development process that breaks regions down into manageable units and builds upon the lessons learned from previous development efforts, collaborative monitoring, and use of map-based decision support tools.**

Florida Keys National Marine Sanctuary

The Florida Keys National Marine Sanctuary encompasses 18,000 square miles off the coast of Florida and is one of the largest marine sanctuaries in the world. Established in 1990, the last twenty years have provided a wealth of lessons about effective strategies for marine spatial planning, reserve implementation, and enforcement and monitoring. Some aspects of the sanctuary process have been successful, such as the management council of local and federal representatives, while others, like the initial planning and implementation stage, encourage careful reflection on how not to repeat history's mistakes. **The success that the Sanctuary has ultimately achieved has been due to sustained stakeholder engagement and the contributions of ongoing natural and social science within the region. Perhaps the most important lessons to be learned from the Sanctuary are the consequences of establishing a reserve with insufficient knowledge of its ecological and social context.** The initial sanctuary design was poorly conceived and as a result, even with the benefits of a strong federal mandate, sufficient funding, and widespread public support, it took years to undo the mistakes of the initial plan. Modern conservation efforts must be careful to balance urgency with necessary preliminary information gathering.

Massachusetts Ocean Planning Effort

The Massachusetts Ocean Management Plan aims to use science and social science tools to create an adaptive management structure that balances and maximizes diverse interests in Massachusetts's state waters. The ecological and socioeconomic effects of this plan remain to be seen, as the state is just entering the implementation phase. However, **NROC can learn a great deal from the Massachusetts Ocean Task Force planning process and the final product, the Massachusetts Ocean Management Plan.** The local relevancy and the highly adaptive nature of the plan make the plan an excellent model for NROC. NROC should study Massachusetts's commitment to stakeholder engagement, in particular, which made the plan more palatable to interested parties. Unique tools such as web-based mapping and both virtual and physical stakeholder input forums informed a truly democratic planning process. Additionally, the state worked with the Massachusetts Ocean Partnership Fund, which proved to be a very effective private-public partnership model. NROC can also learn from the concessions Massachusetts made to garner the support of various stakeholder groups and industries, like the recreational and commercial fisheries sectors. In particular, the exclusion of fisheries from the plan presents a serious future jurisdictional issue for the state. Hopefully NROC can find a way to engage the fisheries stakeholder groups in the planning process and incorporate fisheries management into a regional plan.

These case studies were conducted by J. Adler, D. Dean, E. Gomez, K. Lane, J. Leibovic, B. Martin, C. Mattison, L. Reimitz, L. Richter, C. Scanlan, N. Sinbinga, J. Teixeira, K. Urquidi, E. Van Arsdale, S. Woolford, & C. Zaleski, students in Prof. Heather Leslie's Marine Conservation Science & Policy (ENVS 1455) course in Spring 2010. Prof. Leslie acknowledges their dedication and enthusiasm, as well as that of the course TA, T. Gancos.

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