

ADAPTING MARINE PROTECTED AREAS TO A CHANGING OCEAN

**MARINE PROTECTED AREAS FEDERAL ADVISORY COMMITTEE RECOMMENDATIONS
SEPTEMBER 2017**

EXECUTIVE SUMMARY

In May 2017, the Marine Protected Areas Federal Advisory Committee (MPA FAC) was charged by the US Departments of Commerce (DOC) and Interior (DOI) to provide actionable recommendations for using an “adaptive management” approach in the nation’s MPAs, with the aim of ensuring that these vital areas continue to thrive and provide benefits to the United States in the face of changing environmental conditions.

DOC and DOI Charge on Adaptive MPA Management in a Changing Ocean

Today’s rapidly changing ocean ecosystems and expanding human uses require that MPA managers have practical tools and strategies to evaluate the effectiveness of existing management measures and to adapt those actions to meet changing threats and conditions. Building from a synthesis of existing adaptive management approaches and policies in US MPAs, the MPA FAC would provide recommendations about: maintaining a cost effective monitoring program; how to know when to act; how to deal with uncertainty; how to engage the public in adaptive management; and, how to align decision-making frameworks with rapidly evolving management needs.

The MPA FAC’s initial response to this charge is summarized below. Additional detail on the rationale, need, and specific recommended agency actions follow in the recommendations on Adaptive Management in MPAs.

MPA Federal Advisory Committee Response

We urge your Departments and their MPA programs to promptly and consistently:

1. Use adaptive management to sustain and optimize America’s MPAs
2. Empower agencies to bolster capacity for adaptive management

RECOMMENDATIONS ON USING ADAPTIVE MANAGEMENT IN MPAs

1. Use Adaptive Management to Sustain and Optimize America's MPAs

MPAs provide lasting protection and enjoyment of natural ecosystems and cultural resources in ecologically, economically, and culturally important ocean places. Practitioners and scientists have demonstrated that, when properly designed using sound science, traditional knowledge and stakeholder input, MPAs promote healthy oceans and the diverse human activities that depend upon them. Additionally, MPAs are most successful when their management is guided by explicit plans based on specific goals and objectives. By tying site objectives to measurable indicators, managers and stakeholders can monitor and evaluate MPA effectiveness and use those results to identify management adjustments where needed.

Widely used in terrestrial protected areas, this process is called “adaptive management.” It can be used to fine-tune management actions to better achieve desired outcomes for the site, or for responding to emerging and often dramatic changes in ocean ecosystem conditions, such as range shifts in ecologically important species, declining health of key resources, or increased impacts from expanding human uses.

Our capacity and willingness to adapt site management strategies in the face of a changing ocean will be crucial to the future success of our nation's MPAs. Knowing whether, when, and how to adapt an MPA's management approach depends on five critical steps:

- a) Create or Update an Outcome-Driven Site Management Plan -- Adaptive management is most effective in MPAs that have an explicit management plan that includes: clearly articulated site goals and objectives; alternative management options and realistic time horizons for achieving those desired outcomes; and measurable, actionable indicators of environmental change relative to those outcomes. MPAs lacking this cohesive framework may require changes to management plans and/or site regulations, which will often involve substantial engagement with local, state and federal agencies, tribes, scientists, and stakeholders.
- b) Conduct Sustained Monitoring and Evaluation -- MPAs should be routinely and consistently monitored and evaluated against indicators of management effectiveness and environmental change. Trends suggesting a significant and lasting deviation from expected conditions should prompt management assessments.
- c) Consider Alternative Management Options -- Alternative management actions should be pursued when those assessments indicate that the initial management measures are not achieving intended outcomes of the site(s) or MPA network. Management options must be informed by a science-based evaluation of potential responses to observed undesirable trends in site conditions and be selected using a transparent and inclusive process engaging diverse members of the MPA community, including managers, tribes, users, and stakeholders.

Adaptive management of individual MPAs is specifically designed to help sites and MPA networks achieve their unique goals and objectives in dynamic and increasingly changing ocean environments within their existing legal and policy mandates.

Consequently, it is not an appropriate tool for pursuing broader ocean policy outcomes better suited to a more comprehensive planning process.

- d) Execute Management Decisions -- If new approaches are deemed necessary to achieve site objectives, MPA managers should promptly implement alternative actions to address emerging threats and environmental changes.
- e) Ensure Continuous Adaptation -- MPAs should be evaluated regularly on an ongoing basis, through routine monitoring, evaluation, assessment, and management action.

2. Empower Agencies to Bolster Capacity for Adaptive Management

Guidance published by the Department of the Interior provides instructive and useful ways to incorporate adaptive management into decision-making.ⁱ In the past, the National Park Service has directed managers to consider adaptive management to promote science-based decisions, help deal with uncertainty and promote learning.ⁱⁱ The structured adaptive management process outlined above is a documented tool for anticipating, tracking, and responding to changing conditions in protected areas.

Although many MPAs have the legal authority -- and in some cases, the requirement -- to adjust management approaches when needed ⁱⁱⁱ, this formal process has not been widely implemented around the US, either as a routine part of site management or as a more urgent response to rapidly changing environmental conditions. This gap results, in large part, from a lack of institutional policies, procedures, and capacities for implementing adaptive management measures. Developing this crucial ability will require innovative approaches coupled with clear and sustained commitment to use them by federal, state, territorial, and tribal MPA agencies. To that end, we outline below three key recommended steps to ensure effective adaptive management in federal MPAs:

- a) Engage in Outreach and Raise Awareness -- Ocean ecosystems are becoming increasingly complex and unpredictable, varying in unexpected ways from place to place and over time. Most MPAs have not been designed or managed for such dynamic scenarios. As a result, many sites may need to create a shared understanding within their communities (i.e. managers, tribes, users, stakeholders, scientists) of the scope, nature, and implications of growing ecological uncertainty – and of the need to adapt ineffective strategies, coupled with agreed-upon thresholds for management action. Raising stakeholder awareness and trust may require new and dedicated outreach efforts.
- b) Develop Nimble and Transparent Planning Processes -- MPA managers and communities need to jointly create a responsive decision-making process that can quickly identify emerging threats and implement appropriate and timely management actions to address them. Creating this institutional and societal capability -- currently lacking in many MPAs -- may require enhancing authorities and engaging interested parties and decision-makers in new and challenging ways.
- c) Dedicate Resources and Sustain Agency Commitment -- Effective adaptive management (i.e. monitoring, evaluation, and public planning) can be resource-intensive and requires

dedicated staff, funds, time, and effort that must be routinely incorporated into MPA work plans and budgets. Equally important will be the managing agency's continued commitment to act quickly and decisively to address emerging threats to its MPAs.

CONCLUSIONS

The United States has built and sustains an enviable national system of MPAs. These societally critical areas, many of which are federally managed or supported by Departments of Commerce and Interior, provide invaluable economic and environmental benefits, all while protecting some of our most precious natural and cultural resources.^{iv}

However, traditional and largely static approaches to managing these increasingly dynamic sites are not an effective match to our changing and often unpredictable ocean. Expanding human uses and changing environmental conditions pose real and growing threats to the very ecological and cultural qualities that these MPAs were created to conserve. It is for this reason that we, the MPA FAC, strongly urge your Departments to direct your MPA programs to immediately begin building the awareness, intention, and capacity to use the adaptive management approach outlined here. The future of America's MPAs may rest on our collective resolve to fully embrace this proven approach.

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APPENDIX 2. ENDNOTES

ⁱ Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2007. Adaptive Management: The U.S. Department of the Interior Technical Guide. See also Williams, B. K., and E. D. Brown. 2012. Adaptive Management: The U.S. Department of the Interior Applications Guide.

ⁱⁱ DOI/NPS Director’s Order 100 – Resource Stewardship in the 20th Century.

ⁱⁱⁱ Neary, J., C. Wahle and L. Wenzel, 2017. An analysis of legal authorities for adaptive management in US marine protected areas. Background report for MPA FAC charge on adaptive management.

^{iv} Executive Order 13158, Marine Protected Areas. 2000. White House Council on Environmental Quality.