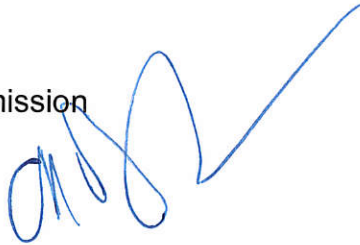


Memorandum

Date: January 10, 2018

To: Valerie Termini
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director



Subject: **Management Review of Baseline Information for North Coast Marine Protected Areas**

Overview:

On June 6, 2012, the Fish and Game Commission (Commission) adopted regulations for 20 new and revised north coast marine protected areas (MPAs) and seven special closures that were implemented December 19, 2012. The north coast is part of a statewide network of 124 MPAs designed to meet the goals of the Marine Life Protection Act (MLPA), including protecting marine populations, habitats and ecosystems, improving sustainable human use of our ocean, and protecting marine natural heritage. The north coast MPAs encompass approximately 103 square nautical miles or 13 percent of California's jurisdictional waters (0-3 nautical miles from shore) between the California–Oregon border and Alder Creek in Mendocino County, including state waters surrounding offshore rocks. The MLPA requires monitoring, research, and evaluation to facilitate adaptive management of the network. The purpose of this memorandum is to transmit the Department of Fish and Wildlife's (Department) management review of the baseline information collected within the north coast following MPA implementation to the Commission.

The Statewide MPA Monitoring Program takes a two-phase approach to monitoring: regional baseline monitoring (Phase 1) and statewide long-term monitoring (Phase 2). The north coast is the last of four coastal regions to complete Phase 1. Eleven regional projects were funded to monitor, both inside and outside MPAs, a broad range of species, ecosystems, human uses, oceanographic patterns, and traditional ecological knowledge as part of understanding the historical and current ocean conditions in the region. Most projects collected two to three years of data from 2014 and 2016, although several projects integrated longer historical datasets as well. Baseline monitoring establishes a regional benchmark of the ecological and socioeconomic conditions at or near the time of MPA implementation, and serves as an important set of data against which future MPA performance can be measured.

To help inform management recommendations following MPA implementation, the Department, Ocean Science Trust (OST), and the Ocean Protection Council (OPC) worked collaboratively to produce the "State of the California North Coast" report as was done in the central, north central, and south coast regions. The report provides a summary of baseline monitoring and related information during the first five years of MPA implementation in the region (<http://oceanspaces.org/north-coast-state-region>).

The report and other baseline information was shared with constituents throughout the north coast during community gathering events in November 2017 (Attachments).

Scientific Learning from Baseline Monitoring:

Baseline monitoring results indicate the north coast MPAs contain a variety of representative marine habitats and ecosystems with distinct biological communities, which contribute to achieving the ecological goals of the MLPA. Environmental conditions in the region can fluctuate from year to year, however several notably large-scale and unexpected events occurred during the baseline monitoring period. Based on analyzing 26 years of oceanographic data, the years 2014-2016 were marked by unprecedented warm conditions, driven in part by a large mass of unusually warm ocean water known as the North Pacific Marine Heatwave. In addition, the 2015-2016 El Niño event rivaled sea surface temperature anomalies recorded during the 1982-1983 and 1997-1998 El Niño events. Combined, these events led to an unprecedented and persistent harmful algal bloom that directly affected Dungeness crab and bivalve fisheries. Beginning in 2013, another unexpected event likely connected in part to the unusually warm water conditions was a widespread mass die-off of sea stars caused by a wasting syndrome extending from the Gulf of Alaska to Baja California. In the north coast, this event was documented especially during the winter of 2014, not only in nearshore intertidal and subtidal ecosystems, but also in deeper offshore ecosystems. Surveys from shallow rocky ecosystems conducted during the baseline period found sparse bull kelp forests and substantially increased purple and red sea urchins compared to surveys prior to the baseline period. Researchers continue to examine how events such as the North Pacific Marine Heatwave and sea star wasting syndrome have shaped these types of ecological changes.

Recreational and commercial fishermen reported the loss of some traditional fishing grounds, and having to travel longer distances to fish, due to MPAs. Despite this, an analysis of landings and revenue reported on landing receipts and Commercial Passenger Fishing Vessel (CPFV) logbooks showed fishing continues to be an integral part of the regional ocean economy. Researchers from Humboldt State University conducted in-person interviews with 163 commercial fishermen and 15 CPFV operators to gather baseline information following MPA implementation. While 73% of commercial fishermen interviewed stated that MPAs directly affected their fishing operations, 66% reported no change to recent fishing income following MPA implementation. Similarly, a large number of CPFV operators reported no change, or a slight increase, in income before and after MPA implementation.

Management Recommendations:

California's MPAs were designed, and now managed, to the extent possible, as a statewide network. Management of the network is informed by lessons learned and best management practices from statewide, regional, and local scales. While regulatory changes based on baseline monitoring data are not recommended at this time, opportunities exist to improve the MPA Management Program through four focal areas: monitoring and research, enforcement and compliance, outreach and education, and policy and permitting. Based on experience gained over the last five

years managing the north coast MPAs and input from core partners, Tribes and Tribal governments, and stakeholders, the Department recommends the following:

Monitoring and Research

- Continue building the partnership-based MPA Management and MPA Monitoring Programs to leverage cost-effective/sustainable long-term MPA monitoring practices, and collect sufficient information to evaluate the efficacy of the statewide MPA network relative to the MLPA goals.
- Continue the development of a Statewide MPA Monitoring Action Plan that draws from regional baseline monitoring, incorporates additional expert input and analyses, peer review and public input to identify long-term monitoring priorities and strategies.
- Improve approaches for communicating monitoring information and results to broad audiences about the efficacy of the MPA network relative to MLPA goals.
- Explore how MPA science and management can align with other management efforts such as fisheries, water quality, and climate change.

Enforcement and Compliance

- Use available technology to make regulatory activities more efficient and effective; including identifying high priority enforcement areas (e.g. Pyramid Point State Marine Conservation Area had 58 percent of the recorded north coast violations from January 2013 – July 2017).
- Maintain and enhance cooperative interagency MPA enforcement efforts.
- Continue exploring new and emerging technology for increased MPA enforcement efficiency; identify metrics to collect in the field to better track MPA compliance.
- Change or adopt regulations as needed to simplify or clarify specific language to improve compliance.

Outreach and Education

- Continue working with partners to improve public awareness, understanding, and compliance of California's MPA network through outreach, education, communication, and interpretation activities (e.g. 195 regulatory and interpretive signs installed coastwide, including 38 in the north coast).
- Continue communicating directly with the public on a regular basis, and developing outreach materials and resources focused on compliance (e.g., over 200,000 MPA regulatory guidebooks and informative brochures distributed statewide; approximately 38,000 guidebooks and 25,000 brochures distributed in the north coast).
- Continue working with partners on educational programs that support MPA goals, and reach out to various age groups and cultural backgrounds in communities inland and along the coast (e.g. Parks Online Resources for Teachers and Students program in partnership with State Parks brings MPA messaging into K-12 classrooms, teacher toolboxes).

Policy and Permitting

- Continue to provide expertise to inform the Commission's policies, adaptive management, and regulatory decision-making processes.
- Continue planning with the MPA Statewide Leadership Team to increase

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coordination between permitting agencies to improve governance.

- Implement an ecological impact assessment tool that was developed to evaluate potential cumulative ecological impacts of projects proposed within MPAs prior to issuing a scientific collecting permit.

Adaptive management, as defined by the MLPA is an ongoing process which seeks to improve management by learning from program actions such as monitoring, evaluation, and other management actions that affect the MPA network (Fish and Game Code, § 2852[a]). For example, to improve MPA compliance and enforceability across the MPA network, the Commission recently took action to amend regulations to clarify regulatory language, correct existing errors, and update allowable activities within MPAs. The Department will continue to use the best available science to make well-informed adaptive management recommendations into the future.

Should you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager, at (916) 449-6459.

Attachments:

1. North Coast State of the Region Report
2. Summary of Key Outreach Activities and Products from North Coast Marine Protected Area Baseline Monitoring

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