

1) Advancing Marine Spatial Planning in Washington

Agency Host and Mentor:

Department of Ecology, Brian Lynn and Jennifer Hennessey

Interagency connections:

State Ocean Caucus agencies, particularly:

- Department of Health
- Department of Fish and Wildlife
- Department of Natural Resources
- Governor's office
- Puget Sound Partnership

Specific Tasks and Major Project Components:

- a. Understand, research, track and analyze marine spatial planning policies, principles, and processes at various governmental levels and from various locations such as via case histories or providing links to resources on the state marine spatial planning website. Understand and explore issues, needs, and gaps for Washington and West Coast region.
- b. Assist with follow up on marine spatial planning (MSP) report recommendations for Washington State. Develop partnerships, strategies, and specific proposals including activities such as:
 1. Coordinating with state agencies to advance marine spatial planning policy priorities and activities in Washington such as convening a “practitioners” roundtable regarding tools and processes.
 2. Fostering continued dialogue and partnerships with diverse group of stakeholders on marine spatial planning such as supporting coastal meetings. Where appropriate, assist in advancing marine spatial planning activities and projects.
 3. Coordinating with Ecology staff and the Washington governor's office under West Coast Governors' Agreement on Ocean Health to develop and advance a marine spatial planning framework and activities for the West Coast region. Collaborate with West Coast states, tribes, and other regional partners on advancing common needs while representing Washington's policy positions and needs on regional planning. Specific activities may include participating in National Ocean Council listening sessions; developing grant proposals or summary reports related to achieving the objectives set in Washington's WCGA November 2010 workshop on the Regional Ocean Partnership Funding Program.
- c. Analyze and develop proposed policy responses to various legislative and federal proposals for marine spatial planning, as needed.
- d. Participate in and support State Ocean Caucus interagency meetings, address other ocean and coastal policy issues, and participate in other opportunities and assignments including providing updates to the State Ocean Caucus on West Coast MSP activities.

2) Refining Puget Sound Partnership's Conservation Strategies Using Marine Spatial Planning and Marine Protected Areas

Agency Host and Mentor:

Puget Sound Partnership

- Kenneth Currens, Science Director, as Agency Host and Mentor
- Chris Townsend, Planning and Policy Program Manager, as Policy Advisor

Interagency Connections:

- Department of Ecology
- Department of Fish and Wildlife (WDFW)
- Department of Natural Resources (DNR)
- Governor's office
- United States Geological Survey (USGS)
- National Oceanic and Atmospheric Administration (NOAA)
- Puget Sound Tribes & Northwest Indian Fisheries Commission (NWIFC)

Purpose:

The purpose of this fellowship is to help the Puget Sound Partnership develop the collaborative policy and science framework for implementing a network of marine protected areas (MPAs) in Puget Sound using marine spatial planning (MSP).

Background:

The Puget Sound Partnership has responsibility for developing the *Action Agenda*, a prioritized list of near-term strategies and actions for protecting and restoring the Puget Sound and monitoring the success of those strategies and actions. One priority action of the *2009 Action Agenda* is to “implement a strategic network of marine managed areas and aquatic reserves that contributes to conserving the biological diversity and ecosystem health in marine areas of Puget Sound.” A variety of marine areas in Puget Sound are currently protected, but those protections were implemented without overarching regional policy goals, ecological design, or coordination among managing agencies. This fellowship would provide the Puget Sound Partnership with products needed to coordinate a more strategic, broad-based approach.

Major Project Components and Tasks:

The primary goal is to synthesize the scientific and policy issues and challenges for planning and implementing a network of MPAs in the Puget Sound. The products of this work are important for developing successful, collaborative multi-stakeholder participation used in MSP specifically to identify marine areas that can be protected to conserve biological diversity and ecological functions.

Major tasks are listed below. Not all tasks require equal effort.

1. Synthesize the Scientific and Policy Issues and Challenges for Implementing a Functioning Network of MPAs. This work would include:

- Identify political, legal, and institutional challenges to making changes or additions to existing MPAs to achieve common conservation goals.

- Identify technical challenges (e.g., scope, scale, data, models) building a network of MPAs from existing protected areas.
 - Assessing the degree to which agency coordination, evaluation, or modification of existing MPAs could achieve common conservation goals among MPAs that were not designed with that in mind. For example, state parks regulate certain activities to achieve recreational benefits but these could benefit conservation as well. Alternately, aquatic reserves established by DNR do not address fishing pressures but these could be complemented by actions taken by WDFW.
2. Develop the Framework for Using MSP as a Tool for Developing a MPA Network in Puget Sound. Research and identify scientific and policy elements for comprehensive marine spatial planning that would be necessary for identifying, planning, and implementing effective MPAs. Fellow is expected to become familiar with past and current marine protection efforts in the Puget Sound and with the strengths and weaknesses of marine spatial planning as a tool.
 3. Help Evaluate the Suite of Existing MPAs in Puget Sound. Fellow will help evaluate the effectiveness of the currently protected areas within Puget Sound in addressing the conservation objectives identified within the Action Agenda. This evaluation process would incorporate but would not be limited to the following steps:
 - Reviewing and summarizing the current goals, objectives, and expected outcomes of existing Puget Sound MPAs with a conservation focus.
 - Reviewing and summarizing what is known about the effectiveness of these MPAs in reducing ecosystem pressures and improving the status of the ecosystem and how their success is monitored.
 - Identify the gaps in the current set of MPAs relative to identified needs.
 - Identifying a suite of consistent objectives for MPAs at local and regional scales that are linked to accomplishing Action Agenda goals, focal ecosystem components and targets, and pressures on these ecosystem components.
 4. Recommend improvements in regional monitoring and evaluation of a Puget Sound MPA network to ensure that it meets local and regional objectives. This could include recommendations about indicators, monitoring design and analysis, scope of funding, and governance of decision-making within the Puget Sound Coordinated Ecosystem Monitoring and Assessment Program.

Deliverables include a report synthesizing findings for all tasks and a manuscript for submission to a peer reviewed journal for task 1.

3) Monitoring and Assessing, Educating the Public on Harmful Algal Blooms

Agency Host and Mentor:

Department of Health

Jerrold Davis, Director, Office of Shellfish and Water Protection with support from Jerry Borchert and Rick Porso

Interagency Connections:

- Department of Fish and Wildlife
- Washington Olympic Region Harmful Algal Blooms (ORHAB)
- Washington State Tribes
- NOAA
- Washington Sea Grant University of Washington

Specific Tasks and Major Project Components:

- a. Continue a DSP pilot project to provide real study time phytoplankton monitoring for harmful algal bloom (HAB) species, specifically *Dinophysis* spp. from select sites in Puget Sound and on the Coast. This will provide a broad record of *Dinophysis* distribution in Puget Sound and the coast during a second season and will begin to address the link between *Dinophysis* and accumulation of DSP toxins in shellfish.
- b. Coordinate an interagency information sharing and educational outreach review with state, tribal, academia and local health jurisdictions on the significance and prevalence of emerging marine toxins such as Diarrhetic Shellfish Poisoning (DSP) and or other historical marine toxins in Washington coastal and Puget Sound waterways.
- c. Propose an enhancement to the current Shellfish Biotoxin Program to include an early warning phytoplankton monitoring program. This includes working with the Public Health Lab and NOAA to optimize a rapid quantitative test (qPCR) to detect *Alexandrium catenella* (PSP) cells. This test would be used as a screening tool during the winter months when *Alexandrium* blooms are less frequent and would reduce the use of the mouse bioassay in cases where *Alexandrium* cells were not detected.
- d. Assess long or short-term Diarrhetic Shellfish Poisoning (DSP) -related health impacts. Determine if long-term exposure to DSP toxins cause elevated risk of cancer at some gastro-intestinal cancer sites. Okadaic Acid (component of DSP toxins) is a tumor promote and is associated with elevated cancer rates at some GI sites and DSP toxin exposure (Cordier, 2000). Working with the Cancer Prevention and Control Unit of WDOH, setup a geographic surveillance of GI cancer rates and shellfish consumption in Washington state and calculate an average relative risk and identify potential cancer clusters using SaTScan.
- e. Participate in and develop recommendations for a Washington State policy for management of Diarrhetic Shellfish Poisoning (DSP) and or other marine toxins in Washington coastal and Puget Sound waterways.

4a) Identifying possible policy changes as a result of the Puget Sound Partnership eelgrass targets and possible methods of implementation

Agency Host and Mentor:

Washington Department of Natural Resources

Michal Rechner, Aquatic Resources Assistant Division Manager for Policy and Program Development with assistance from Tom Mumford, PhD, Aquatic Resources Science Advisor

Interagency Connections:

Puget Sound Partnership
Department of Ecology (ECY)
Department of Fish and Wildlife (WDFW)
Department of Natural Resources (DNR)
US Army Corps of Engineers
Puget Sound Tribes

Specific Tasks and Major Project Components:

On February 17, 2011, the Puget Sound Partnership adopted a goal of a 20% increase in acreage as a 2020 target for eelgrass. In order to meet that goal, DNR Aquatics Program is considering various program and policy options for increasing the preservation, restoration and enhancement of eelgrass as well as addressing the stressors that impact eelgrass such as overwater structures, water quality, contamination, etc.

1. Assist DNR Aquatics Program staff to:
 - a. Understand, research, track and analyze eelgrass protection and restoration laws, policies, principles, and processes at various governmental levels and from various locations in Puget Sound
 - b. Understand, research, track and analyze eelgrass stressors and the laws, policies, principles, and processes at various governmental levels and from various locations in Puget Sound that control those stressors, and
 - c. Understand, research, track and analyze other benchmark indicators and targets and how means of achieving these various targets may interact with achieving the eelgrass target.
2. Review existing DNR Aquatics leasing program and policies and procedures related to eelgrass. Analyze other existing and proposed local, state, and federal policy responses needed for eelgrass protection, mitigation, and restoration.
3. Analyze and develop DNR policy options for modifying laws, rules, policies and procedures related to eelgrass protection, mitigation, and restoration, as needed to achieve the restoration goal.
 - a. Present options to DNR scientists, policy staff, and field staff for consideration
 - b. Revise or supplement options to address agency input
4. Identify other local, state, and federal policy responses needed for eelgrass protection, mitigation, and restoration, as needed to achieve the restoration goal

5. Participate in Puget Sound Partnership, and other interagency meetings regarding benchmark indicators, target setting and monitoring, and other opportunities and assignments including providing updates to the DNR scientists and management, the Puget Sound Partnership, and State Caucus.

4b) Researching the existing network of harbor areas across the state, identifying any trends in conflicting uses, the possible need for and pros and cons to changing harbor lines, and methods of avoiding conflicts in the future

Agency Host and Mentor:

Washington Department of Natural Resources

Michal Rechner, Aquatic Resources Assistant Division Manager for Policy and Program Development with assistance from Hugo Flores, Aquatic Resources Planner

Interagency Connections:

Department of Ecology (ECY)

Department of Fish and Wildlife (WDFW)

City and County Governments

Washington Department of Commerce

Puget Sound Tribes

Specific Tasks and Major Project Components:

1. Harbor areas inventory and conditions
 - a. Assess the level of demand for navigation and commerce, and competing or conflicting uses, in each harbor area. Research Interferences with existing navigation by structures, such as docks, breakwaters, floats or anchored or moored vessels that reduce the harbor area usability.
 - b. Assess existence of harbor infrastructure such as roadways, navigation channels, bulkheads, boat ramps, docks, sewage treatment, and vessel waste pumpout facilities.
 - c. Identify areas with high demand for, but having a lack of, appropriate commercial vessel support facilities or sufficiently maintained navigation channel or basin depths.
 - d. Inventory existing water-dependent uses of the harbor areas (commercial-industrial-recreational) and identify potential use conflicts.
2. Harbor areas and local and regional land uses
 - a. Assess the effectiveness of land use zoning to protect important water-dependent uses in appropriate areas within harbors.
 - b. Map existence of Intertidal wetland areas, bays or other offshore or intertidal areas that are used or zoned for residential or other uses that may conflict with harbor areas.

- c. Assess limits on public access to or use of the harbor area and public health and safety issues.
 - d. Inventory local shoreline master programs policies addressing existence of harbor areas that include land use analysis and competing uses for this area.
 - e. Inventory strategic plans develop by Washington Ports identifying their needs for harbor areas into the XXI century.
3. Planning for the future of Harbor areas
- a. Analyze identified harbor area uses, needs, and conflicts
 - b. Assist with identifying policies and plans that may need revision to respond to local and regional needs for waterfront development while meeting statutory goals
 - c. Assist in developing proposals for comprehensive statewide planning of harbor areas as well as specific geographic areas
 - d. Assist with public and stakeholder outreach