

Scientific and Technical Advisory Committee
Request for Proposals – Oregon’s Marine Reserves Assessment

Full Proposals Due: June 11, 2021 before 5:00 PM Pacific Time

Late and/or incomplete applications will not be considered.

Project Duration: August 2021-March 31, 2023

The total available funding (\$132,000) is fixed; no additional funds are available.

SUMMARY

The Scientific and Technical Advisory Committee (STAC) of the Oregon Ocean Policy Advisory Council (OPAC) invites proposals from researchers affiliated with any Oregon institution of higher education listed in ORS 352.002 to conduct the legislatively-mandated assessment of Oregon’s marine reserve system. The main deliverable is a scholarly review of the marine reserves process and outcomes from 2008-2020, which will be detailed in the forthcoming (December 2021) Oregon Department of Fish and Wildlife (ODFW) Synthesis Report.

While the lead principal investigator must be from an Oregon university as outlined above, STAC encourages collaborative, multi-disciplinary teams, which can be from multiple states and institutions to respond to this opportunity. The deadlines listed in the RFP were determined by Oregon’s Legislative Assembly and funding for the assessment (\$132,000) is provided by Oregon Ocean Science Trust Fund, a donor advised fund at the Oregon Community Foundation (OCF), so it is important to note that **no additional funds are available and the deadlines set forth for deliverables cannot be modified or extended**. The university team will be selected through an open, competitive, peer-reviewed process. Proposed background work may begin in August 2021, and ODFW’s Synthesis Report will be available to the selected university in January 2022.

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BACKGROUND/INTRODUCTION

The State of Oregon began considering the use of marine reserves (MR) - areas protected from all extractive activities except those necessary for monitoring and research - as a conservation and management tool almost two decades ago. Following years of discussion at the state level, the MR process accelerated once Gov. Kulongoski issued Executive Order 08-07 in March 2008, which directed the Oregon Department of Fish and Wildlife (ODFW) to work with the Oregon Ocean Policy Advisory Council (OPAC) to implement a public process for nominating and recommending no more than nine MR sites (Legislative Policy and Research Office, 2018). The Scientific and Technical Advisory Committee (STAC), which was established by the state legislature (ORS 196.451) to make recommendations to OPAC, was tasked with providing additional criteria to assess the social, economic, and biological impacts of these MR nominations.

OPAC provided Marine Reserve Policy Recommendations to the Governor and state and local governments in August of 2008, and in November 2008 OPAC recommended six of 20 submitted proposals to move forward in the process (Legislative Policy and Research Office, 2018). House Bill 3013 went into effect in 2009 and directed ODFW to establish, study, and monitor two pilot sites (Otter Rock and Redfish Rocks). Additionally, three other sites (Cape Falcon, Cascade Head, and Cape Perpetua) were recommended for further evaluation and the development of a MR proposal was directed for another site at Cape Arago-Seven Devils. Ultimately, Senate Bill 1510 (2012) mandated the establishment, study, and monitoring of all remaining sites with the exception of Cape Arago-Seven Devils. In total, five MRs and nine adjacent Marine Protected Areas (MPA) were designated, covering ~302 km² total (MRs make up ~1/3 of that total, at 103 km²) (Oregon Department of Fish and Wildlife, n.d.).

SB 1510 also directs STAC to submit a final report regarding MR implementation to the Legislative Assembly by March 2023. This report is to be prepared by an Oregon university and should include an assessment and recommendations as set forth in Section 4(2)(b):

- A. An assessment of social, economic and environmental factors related to the reserves and protected areas; and
- B. Recommendations for administrative actions and legislative proposals related to the reserves and protected areas; and
- C. Any other scientifically based information related to the reserves and protected areas that the public university described in this subsection deems relevant or material.

SCOPE OF WORK

Preamble

The main deliverable is a scholarly review (hereinafter referred to as the Final Report) of the MR process and outcomes to date as detailed in ODFW's Synthesis Report, which will be available in January 2022 (an outline is available in Appendix A). The Final Report must include the assessment and recommendations specified in SB 1510, Section 4(2)(b). While implementation is an ongoing process, the assessment will evaluate the MR process from 2008-2020 (the final year of ODFW data and analyses in the Synthesis Report). Funds for the Final Report should primarily support analyses of existing data and development of policy recommendations rather than the collection of new data. The selected

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university will have access to primary data collected by ODFW and may elect to do re-analyses within the time and budget constraints set forth in this RFP; however, **it is important to note that no additional funds are available and the deadlines set forth below for deliverables cannot be modified or extended.** The information presented in the comprehensive Final Report will help determine adaptive management strategies for Oregon's MR system going forward.

The Final Report should determine:

1. Were MRs and associated MPAs effectively designed and implemented to achieve the goals and objectives set forth in OPAC's 2008 Oregon Marine Reserve Policy Recommendations?
2. Did ODFW successfully execute the legislative mandates (see below) set forth regarding MR implementation? and
3. Recommendations for administrative actions and legislative proposals related to the reserves and protected areas.

Selection and siting of the five MRs was the result of a public process led by OPAC and ODFW, under the direction of an Executive Order issued by the Governor in 2008 and statute passed by the Oregon State Legislature in 2009. ODFW is the primary agency tasked with implementing and monitoring the MR system. The ODFW Marine Reserves Program (MRP) was created by the Legislature in 2009 for this purpose and is currently made up of six full-time employees working within a budget allocated by the State Legislature consisting of State General Funds¹. ODFW's mandates, which derive from Executive Order 08-07 (2008), HB 3013 (2009), SB 1510 (2012), and agency administrative rules, are summarized here (refer to the full text of these documents for additional details):

- Developing and implementing site management plans
- Conducting ecological research (including baseline data collection) and monitoring
- Conducting human dimensions research
- Engaging communities and providing information to the public
- Supporting compliance and enforcement

Additional policy guidance was provided in OPAC's Oregon Marine Reserve Policy Recommendations (2008), and the principles and guidelines set forth in the Policy Recommendations (see Appendix B) are reflected in the Criteria STAC developed to guide the selected university as it prepares the Final Report.

The Criteria, which are binned into seven categories, will be used to assess ODFW's Synthesis Report. Some categories have been subdivided into *Planning/Site Evaluation* and *Program Evaluation* subheadings to differentiate between criteria that focus on planning decisions (generally outside of ODFW's purview) and criteria that fall within ODFW's mandates as described above (Note: all criteria should be addressed). The Synthesis Report should provide most of the information needed to evaluate the Criteria, including *Planning/Site Evaluation* items; however, when needed, the selected university may review external material and/or conduct additional analyses if there is a demonstrable link between the criterion and any additional information sought. All sources must be appropriately cited.

¹ For the 2017-2019 biennium, ODFW MRP received a total of \$1.9 million (\$1.2 M for staff and \$0.7 M for supplies and services) to conduct all programmatic activities, including management plan development, ecological monitoring, human dimensions research, communications and outreach, and enforcement (done by Oregon State Police).

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Criteria

Marine reserve design

1. Were areas of high natural biodiversity identified as part of the planning process? (O1)
2. Do the Marine Reserves protect areas of special natural features? (O1)
 - a. Were special natural features identified as part of the planning process? (O1)
 - b. What special natural features were identified? (O1)
3. Did the design of the Marine Reserves system incorporate community interest? (O3)
4. Were less than 10 sites established as part of the Oregon Marine Reserves? (O3)

Marine reserve baseline assessment

1. Were baseline data obtained at each site prior to closure (IPG7)?
2. What baseline data were obtained at each site? Were methods designed and carried out so that change could be detected (IPG7)?
3. Did the nature of the baseline data differ among sites, and were these differences reflected in the subsequent monitoring decisions (IPG7)?
4. Was the timing of sampling driven by the objectives and sampling designs planned for each site, given information available at the start of the MR process (IPG7)?
5. Were the methods of data collection appropriate for each site, given information available at the start of the MR process, and driven by the planned objectives and sampling designs (IPG7)?

Ecological factors

Planning/Site Evaluation

1. Are the reserves in areas with a strong likelihood of high species, habitat, community, functional, and/or genetic diversity? (O1)
2. Do the Marine Reserves protect representative key habitats? (O2)
 - a. Were key types of marine habitat in multiple locations identified? (O2)
 - b. Are there important key habitats that were not included in the locations chosen? (O2)
3. Do the sites provide a potential for enhanced resilience to human-caused or natural perturbations? (O2)
4. Were ecological size and spacing considerations included in the development of the MR system? (O3)
 - a. Are the Marine Reserves of sufficient size and spacing to detect statistically significant differences between Marine Reserves and control areas? (O3)

Program Evaluation

5. Has species diversity been documented by appropriate quantitative sampling and statistics? (O1)
6. Have appropriate methods been used to sample the abundance of key species? (O1)
7. Have appropriate methods been developed for eventually determining the role of reserves in resilience of nearshore ecosystems? (O2)
 - a. Was the monitoring system designed to pick up specific kinds of perturbations that might be expected? (O2)
8. Has research been conducted by ODFW at the Marine Reserves in alignment with stated goals and objectives in Marine Reserves management plans? (O4)
9. Have existing research efforts addressed the effects of natural (e.g., climate change) and human-induced (e.g., resource use, anthropogenic input) stressors? (O4)
10. Does a database of research exist? If so, can the data be accessed? (O4)
11. Has the Oregon Marine Reserves program adapted their sampling based on lessons learned?

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(O4)

Socioeconomic characteristics

1. Were criteria established to measure significant adverse social and economic impact? (O3)
 - a. Is there evidence (qualitative and/or quantitative) for significant adverse social and economic impacts on ocean users and coastal communities due to the establishment and management of marine reserves? (IPG6)
 - b. Is there evidence (qualitative and/or quantitative) for significant positive social and economic effects on ocean users and coastal communities due to the establishment and management of marine reserves? (IPG6)
2. Are the educational and economic development opportunities compatible with the goal of conserving marine habitats and biodiversity? (IPG4)

Level of Community Engagement

1. Has the public (including ocean users, coastal communities and other stakeholders) been involved in the proposal, selection, regulation, monitoring, compliance and enforcement of marine reserves (PPG1)?
2. Was outreach and public engagement an ongoing part of the MR planning process (PPG2)?
3. Have researchers been accessing the Marine Reserves? (O4)
4. Have research efforts been coordinated among ODFW and external researchers? (O4)
 - a. Has cooperative and collaborative research been conducted in the marine reserves? (IPG3)
5. Have fishing vessels been used as research platforms? (IPG3)
6. Has scientific and other information been made available to the public through outreach and websites (PPG2)?
7. Have the allowable uses of marine reserves been effectively communicated to the public and ocean users? (IPG5)
8. How have educational opportunities (formal and informal) and public engagement associated with marine reserves been encouraged? (IPG4)
9. How have economic opportunities associated with marine reserves been encouraged? (IPG4)

Governance

Planning/Site Evaluation

1. Are the regulations guiding marine reserve use consistent with allowing marine transit, safe harbor, and beach access? (IPG5)

Program Evaluation

2. Have short- and long-term nearshore resource management decisions considered research and monitoring data from the Marine Reserves? (O4)
3. Does each Marine Reserve have a monitoring and evaluation plan or plan component that addresses the Marine Reserves objectives? (O4)
4. Do the Marine Reserves as a system and each Marine Reserve have a management plan with the following:
 - a. SMART (specific, measurable, achievable, relevant, time-oriented) objectives
 - b. standardized ecological and socio-economic monitoring protocols
 - c. compliance/enforcement plan
 - d. Demonstrated long-term funding plan in alignment with objectives (IPG1)
5. Have all Marine Reserves been using ecological and socio-economic monitoring protocols (and generating associated data) that support adaptive management? (IPG3)

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6. Does each Marine Reserve have an adaptive management plan with clear objectives, defined decision-making points, and stakeholder engagement processes? (O5)
 - a. Do the adaptive management plans include time points to assess and consider new scientific information and monitoring data? (O5)
 - b. Do the adaptive management plans have clearly defined timelines and criteria for evaluation? (O5)

Enforcement

1. Does each Marine Reserve have an enforcement plan? (IPG2)
 - a. Does enforcement implementation include clearly defined enforcement procedures, including use monitoring? (IPG2)
 - b. Is enforcement data evaluated on a regular basis, and is the enforcement plan modified as warranted? (IPG2)

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Target audience

The audience for the Final Report includes STAC, Oregon’s Legislative Assembly, and other diverse stakeholders who will provide continued input on adaptive management of MRs.

Required milestones and deliverables

University can begin background work	August 2021
University can check in with STAC regarding questions on content	August-November 2021
ODFW kick-off presentation to selected university (opportunity to check in with ODFW regarding questions)	January 2022
Mandatory university check-in with STAC regarding scope of work questions (may be scheduled with ODFW kick-off presentation)	January 2022
University check-in with STAC (progress report with outline)	April 2022
University submits comprehensive draft assessment report and recommendations for administrative actions/legislative proposals to STAC for review and comment	June 1, 2022
STAC returns draft to university with comments	July 15, 2022
Final Report due to STAC	August 31, 2022

NOTE: The selected university team should anticipate being available and responsive to any inquiries, including but not limited to in-person testimony, that may be generated after the report is submitted to the interim committees on environment and natural resources of the Legislative Assembly no later than October 1, 2022, and before a final report is provided to the Legislative Assembly no later than March 1, 2023.

GENERAL INFORMATION REGARDING PROPOSAL SUBMISSION

Schedule of dates for proposal submission and review process

Questions on RFP submitted	April 26, 2021
Compiled responses to questions available/posted	April 30, 2021
Proposals Due	June 11, 2021
Review Period	June-August, 2021
Tentative Notice of Selection/Funding	August, 2021
Selected University begins work	August, 2021

Note: This timeline is subject to change; any updates will be posted on the Institute for Natural Resources website, <https://inr.oregonstate.edu/oregon-marine-reserves-assessment-rfp>.

Eligibility information

Full proposals may be submitted by faculty of any public institution of higher education listed in [ORS 352.002](#) who do not have a conflict of interest as defined below. The project’s lead Principal Investigator (PI) must also be deemed eligible by their institution to receive extramural funding. While non-academic researchers may be included among the co-principal investigators (co-PIs), awards will be made only through colleges and universities. Proposals may include the involvement of collaborators and researchers who are not Oregon university faculty and who do not have a conflict of interest (collaborators may be with industry, state/regional/federal agencies, tribes, NGOs, and/or other research or academic institutions, including out-of-state institutions).

Conflict of interest

You are NOT eligible if the following apply:

- Current or previous employment with ODFW Marine Reserves Program
- Current or former STAC member
- Current or former OPAC member

You MAY have a conflict of interest if the following applies:

- Relationship with Oregon Department of Fish and Wildlife Marine Resources Program (MRP), including:
 - Employment such as: current employment; other employment arrangement (such as a consulting or an advisory arrangement); previous employment within the last 12 months; being considered for employment; formal or informal re-employment arrangement
 - Any office, governing board membership, or relevant committee chairpersonship
 - Business or professional partnership
 - Past or present association as thesis advisor or thesis student within past 5 years
 - Collaboration on a project or on a book, article, report, or paper within the last 48 months
 - Co-editing of a journal, compendium, or conference proceedings within the last 24 months
- Current or past membership with any entity affiliated with Oregon's marine reserves including but not limited to: Oregon Marine Reserves Partnership and community teams associated with the Oregon marine reserves.
- Interests of the following persons are to be treated as if they were yours: Any affiliation or relationship of your spouse, of your minor child, of your sibling, of your parent, of a relative living in your immediate household or of anyone who is legally your partner that you are aware of, that would be covered by any items above.
- Other relationships, such as close personal friendship, that you think might tend to affect your judgment or be seen as doing so by a reasonable person familiar with the relationship.

If you are unsure if a Conflict of Interest exists, please contact the Scientific and Technical Advisory Committee Chair, Dr. Shelby Walker (shelby.walker@oregonstate.edu; 541-737-6200).

Desired team qualifications

Although the lead PI must be from an Oregon institution, teams may include individuals from institutions/organizations outside the state of Oregon. The collaborative, multidisciplinary team should include combined expertise that encompasses:

- Biophysical scientific disciplines relevant to marine reserves monitoring and research (oceanographic, ecological, biological, etc.)

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- Economics (environmental, natural resources, etc.)
- Other social sciences (sociology, anthropology, etc.)
- Coastal/marine management and policy

Duration of Project

IMPORTANT: There will be **no opportunity** for a no-cost extension. The deadlines listed in the Milestones and Deliverables section above are firm deadlines, **so please do not submit a proposal if your team is unable to commit to these deadlines.**

Funding

A budget of \$132,000 is allocated for the Marine Reserves Assessment process. Although the selected university may elect to do re-analyses within the time and budget constraints set forth in this RFP (as needed and in consultation with STAC), **it is important to note that no additional funds are available.** The source of funding will be the Oregon Ocean Science Trust Fund, a donor advised fund at the Oregon Community Foundation (OCF). Upon selection of the university team, the Oregon Ocean Science Trust will recommend a grant for approval by OCF's board of directors.

PROPOSAL DEVELOPMENT AND SUBMISSION

Proposal Elements: Limit the proposal narrative to 10 pages, including elements C-F below. The title page, references, bios, and budgets **do not count toward the page limit.** Please use 1-inch margins and 12-point Times New Roman font.

A. Title Page should include:

- a. Project Title**
- b. Principal Investigator** (primary contact for the project)
 - i. Title/Position
 - ii. Institution
 - iii. Telephone number
 - iv. Mailing address
 - v. Email address
 - vi. Conflict of interest declaration
- c. Additional Team Members** – name, institution, telephone, email, and conflict of interest declaration
- d. Date of Submittal**

B. Project Approach/Work Plan:

Describe each stage of the proposed work plan and how it links to the deliverables in the Scope of Work. If your work plan proposes additional analyses beyond the requested Final Report and related policy recommendations, give reviewers ample information regarding the following: 1) how you will access or generate the needed data and information needed for the analyses; 2) what methods and tools (e.g., models, special analytical approaches, etc.) you will use; 3) why the methods are appropriate and/or needed, and how they will succeed within the time and funding constraints outlined in this RFP; and 4) the approach that will be used to develop policy recommendations.

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C. Project Timeline:

Using the Milestones and Deliverables Timeline listed in the Scope of Work section as a guide, provide a detailed outline of the proposed team's strategy for successfully completing the Final Report outlined in the Scope of Work Preamble. Identify project tasks, team leader, and support for each element.

D. Overview of Project Team:

Describe how the PI's previous accomplishments are relevant both to leading a multidisciplinary team and to this specific project. Indicate why the proposed team is appropriate for this project and whether individuals, sub-units, or the entire team have worked together on similar projects. Specify the roles and responsibilities of each team member, including who will be involved in day-to-day project activities.

E. References:

Provide those cited in the proposal body

F. Qualifications:

Supply biographical sketches of the PI and co-PIs. Each bio should be no more than two (2) pages and should follow guidelines for NSF biographical sketches. Bios should include information regarding current grants pertinent to this assessment.

G. Budget Form:

Provide a detailed budget and budget justification using the form available. Allowable costs are restricted to salary, other payroll expenses (OPE), and indirect costs (NOTE-indirect costs cannot exceed 15%).

H. Conflict of interest declaration for PI and other team members

Proposal Submission: Proposals should be submitted to Jeff Behan, jeff.behan@oregonstate.edu, by email no later than 5:00pm PDT on June 11, 2021.

EVALUATION PROCESS/CRITERIA FOR SELECTION

Proposals must comply with all submission instructions and proposal guidelines to be considered for funding. Each compliant full proposal will be peer-reviewed by 3-5 external peer reviewers.

External peer reviewers will provide both written comments and a proposal rating using the following criteria. All written peer reviews will then be provided to a review panel (which may consist of external peer reviewers), who will review the proposals and external reviewer scores, and make the final funding recommendation to the STAC, which will provide the recommendation to the OOST.² The source of funding will be the Oregon Ocean Science Trust Fund, a donor advised fund at the Oregon Community Foundation (OCF Upon selection of the university team, the Oregon Ocean Science Trust Fund will recommend grant for approval by OCF's board of directors.

² STAC is a public entity; the recommended proposal will be shared with STAC. The PI names and review scores of proposals not recommended will be shared with STAC.

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Applicants should directly and explicitly address the following criteria within their proposal. Each submittal will be rated under a point system, with a total of 100 points possible. Applicants will be evaluated based on the quality and extent to which they address the criteria; failure to provide applicable information in the proposal will affect the score.

1. **Project Approach** – 45 points total
 - a. **Technical Aspects** – 30 points: To what extent does the proposed work plan adhere to the objectives laid out in the Scope of Work?
 - b. **Collaborative Process** – 15 points: To what extent does the work plan reflect a holistic understanding of the information needs of the Oregon State Legislature and ocean stakeholders in the State of Oregon? To what extent does the work plan describe appropriate methods for collaboration related to completion of the desired project deliverables?
2. **Roles, Responsibilities, and Team Qualifications** – 35 points
To what extent do the PIs and other team members possess the skills, experience, and qualifications to execute the proposed work plan? How suitable is the PI to lead a multidisciplinary assessment process, and will they be involved in the day-to-day project activities? To what extent have individuals or the team addressed similar issues? How well defined are roles within the team?
3. **Feasibility** – 20 points total
 - a. **Practicality** - 10 points: How feasible is the approach given the available data, expertise of the team, and proposed work plan? How realistic is the timeline in terms of completing the proposed work and any other analyses that the team may choose to perform? Can the work outlined be realistically completed within the existing budget and deadlines?
 - b. **Potential Impact** – 10 points: Will the work plan provide the information needed to inform policy, adaptive management, and/or other types of decision-making?

PRINCIPAL POINTS OF CONTACT

PIs preparing proposals for funding should contact the following with questions:

- For general questions about the Request for Proposals, including scope of work, proposal preparation, and the review process, contact the Scientific and Technical Advisory Committee Chair, Dr. Shelby Walker (shelby.walker@oregonstate.edu; 541-737-6200).
- For technical questions regarding application completion and submission, contact Jeff Behan (jeff.behan@oregonstate.edu).
- For questions regarding ODFW's Synthesis Report and associated data, contact ODFW Marine Reserves Program Leader, Ms. Cristen Don (cristen.n.don@state.or.us; 541-272-4268).

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REFERENCES

Legislative Policy and Research Office. (2018). *Marine Reserves* (p. 4) [Background brief]. Retrieved from

<https://www.oregonlegislature.gov/lpro/Publications/Background-Brief-Marine-Reserves-2018.pdf>

Oregon Department of Fish and Wildlife. (n.d.). *An Ocean of Awareness Awaits*.

APPENDIX A - ODFW Synthesis Report Outline (Draft)

Report Cover

Cover Letter

Synthesis Report *(Total length of Chapters 1-7 is to be <100 pages)*

Table of Contents

Acronyms and Abbreviations

Chapter 1. Introduction and Overview

- A. Purpose and How to Use This Report
- B. Oregon's Marine Reserves
- C. ODFW Marine Reserves Program
- D. 2023 Program Evaluation and Report: A Check-In

Chapter 2. Planning and Designation History

- A. Introduction
- B. Early Phases (2000 - 2007)
- C. Governor's Executive Order (2008)
- D. OPAC Policy Guidance (2008)
- E. Public Proposals and Coarse Review (2008)
- F. Legislative Actions and Designation of Pilot Sites (2009)
- G. Site Evaluations and Final Recommendations (2010)
- H. Legislative Actions and Designation of Sites (2012)

Chapter 3. Marine Reserve Snapshots

- A. Introduction
- B. Site Characteristics (by site)
 - 1. - 5. Site name
 - a) Site stats
 - map, start dates, size, depth range, habitats
 - fisheries affected, prior fishing pressure
 - proximate communities of place
 - b) State of knowledge at designation

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- where site was strong/weak meeting planning guidelines (from 2008 and 2010 Agency Analysis)
 - c) Expectations for future ecological changes/conservation outcomes
- C. System Characteristics
1. System stats
 2. Overview of state of knowledge at designation

Chapter 4. ODFW Marine Reserves Program

- A. Introduction
- B. Program structure
 - highlight partners and collaborators
- C. Staff resources and capacity (by biennium)
- D. Budget resources and expenditures (by biennium)
- E. Challenges and lessons learned

Chapter 5. Implementation (individual project sections – 10 pages each)

- A. Introduction
- B. Management
 1. Introduction and mandates
 - reference relevant OPAC objectives, guidelines, principles (and if applicable, any relevant mandates explicitly stated in statute)
 2. Key findings and takeaways
 3. How we got here: study design and/or methods overview
 4. Results and conclusions
 5. Contributions and lessons learned
 6. Moving forward
 - ** Appendices provide supporting and more detailed information, analyses, and documentation
- C. Ecological Monitoring
 1. - 6. (i.e. same outline as above)*
- D. Human Dimensions Research
 1. - 6.*
- E. Communication & Outreach
 1. - 6.*
- F. Community Engagement
 1. - 6.*
- G. Compliance and Enforcement
 1. - 6.*

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Chapter 6. Program Contributions and Lessons Learned

Chapter 7. Moving Forward with a Long-term Conservation and Monitoring Program

- A. Introduction
- B. Management
- C. Ecological Monitoring
- D. Human Dimensions Research
- E. Conclusion

Appendices

- A. ODFW Marine Reserves Program
 - 1. Detailed budget expenditures per biennium
 - 2. Ecological monitoring effort by year vs staff resources by year
- B. Management
 - 1. Site management plans (links to existing documents)
 - 2. References
- C. Ecological Monitoring
 - 1. Monitoring plans (links to documents)
 - 2. Methods development
 - 3. Analyses and site summaries
 - Habitat, fish, invertebrates, algae,
 - a) diversity, abundance, community composition
 - Oceanography
 - natural vs human changes,
 - comparison across reserves
 - 4. Long-term monitoring plans
 - Expectations of detecting long-term change
 - Power analyses
 - Future effort by site
 - Opportunities & Trade-offs
 - 5. Lessons Learned
 - Working in the Nearshore
 - Species / Ecosystem Knowledge / Biodiversity
 - Discontinued Tools
 - Collaborative Research
 - Emerging Ocean Issues

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- Application to Nearshore Management

6. References
- D. Human Dimensions Research
 1. Monitoring plans (links to documents)
 2. Methods development
 3. Analyses
 - state level, coast region, by geographic communities of place, among communities of interest (stakeholders), within the fishing occupational community, qualitative individual stories
 4. References
- E. Communication and Outreach
 1. Communication plan (link to)
 2. Analyses/evaluations
 3. References
- F. Community Engagement
 1. Plan (link to)
 2. Analyses and case studies
 3. References
- G. Compliance and Enforcement
 1. Plans (links to)
 2. Analyses/evaluations
 3. References

Supplemental Information

Provide and/or embed links to supplemental information/documents. Examples:

- Executive Order 08-07, HB 3013, SB 1510, OPAC Policy Recommendations (2008)
- 2009 Program Work Plan, 2013 Program Work Plan
- Ecological journal publications, ODFW reports, collaborator reports
- Human Dimensions journal publications, ODFW reports, collaborator reports
- Outreach/communication product examples

Additional Information is available here:

<https://oregonmarinereserves.com/library/>

APPENDIX B – select portions of OPAC’s Oregon Marine Reserve Policy Recommendations

Marine Reserve Objectives

Objective 1 (O1). Protect areas within Oregon’s Territorial Sea that are important to the natural diversity and abundance of marine organisms, including areas of high biodiversity and special natural features.

Objective 2 (O2). Protect key types of marine habitat in multiple locations along the coast to enhance resilience of nearshore ecosystems to natural and human-caused effects.

Objective 3 (O3). Site fewer than ten marine reserves and design the system in ways that are compatible with the needs of ocean users and coastal communities. These marine reserves, individually or collectively, are to be large enough to allow scientific evaluation of ecological effects, but small enough to avoid significant adverse social and economic impacts on ocean users and coastal communities.

Objective 4 (O4). Use the marine reserves as reference areas for conducting ongoing research and monitoring of reserve condition, effectiveness, and the effects of natural and human-induced stressors. Use the research and monitoring information in support of nearshore resource management and adaptive management of marine reserves.

Objective 5 (O5). Although marine reserves are intended to provide lasting protection, individual sites may, through adaptive management and public process, later be altered, moved, or removed from the system, based on monitoring and re-evaluation at least every five years.

NOTE: This objective was written before SB 1510 was passed (making 2023 the first time regulatory changes can be addressed)

Marine Reserve Planning Principles and Guidelines

NOTE: Only the Planning Principles and Guidelines (two of six total) that were used to develop measurable questions are included below. The two selected were included because they both incorporate elements of planning *and* implementation.

Planning P&G 1 (PPG1). The public, including ocean users, coastal communities and other stakeholders, will be involved in the proposal, selection, regulation, monitoring, compliance and enforcement of marine reserves.

Planning P&G 2 (PPG2). Outreach and public engagement will be an ongoing part of the marine reserves planning and implementation process. Available scientific and other information will be made available to the public through outreach and websites.

Marine Reserve Implementation Principles and Guidelines

Implementation P&G 1 (IPG1). Marine reserves as a system and each individual marine reserve will have a plan that includes clearly defined objectives, monitoring protocols, compliance and enforcement provisions, effective management measures, and a commitment of long-term funding necessary to achieve its goals.

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Implementation P&G 2 (IPG2). Marine reserves will be adequately enforced.

Implementation P&G 3 (IPG3). Marine reserves will be adequately monitored and evaluated in support of adaptive management. Cooperative and collaborative research will be encouraged as well as utilization of fishing vessels as research platforms. These activities will be compatible with the goal of conserving marine habitats and biodiversity.

Implementation P&G 4 (IPG4). Education and economic development opportunities that are compatible with the goal of conserving marine habitats and biodiversity will be encouraged.

Implementation P&G 5 (IPG5). Marine reserves are not intended to prevent marine transit, safe harbor, and beach access.

Implementation P&G 6 (IPG6). Significant adverse social and economic impacts of marine reserves on ocean users and coastal communities will be avoided and positive social and economic effects will be sought.

Implementation P&G 7 (IPG7). Adequate baseline data will be collected at each site prior to excluding extractive activities. The types and adequacy of baseline data, and the timing and methods of data collection will be driven by the research and monitoring objectives and sampling designs employed at each site.

APPENDIX C - Glossary

Adaptive management – a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs *and scientific information*³ (Williams et al., 2009)

Beach access – The public’s right to access and freely use, through perpetual easement, Oregon’s ocean shore including wet sand and dry sand beaches up to the statutory vegetation line as outlined in House Bill 1601 (1967; aka the Beach Bill) and HB 1045 (1969)⁴

Key habitats –

- Rocky⁵ intertidal (EHTL-ELTL)
- Rocky subtidal
 - With canopy forming kelp (ELTL-25 m and greater than 25 m depth)
 - Without canopy forming kelp (ELTL-25 m and greater than 25 m depth)
- Soft bottom subtidal⁶
 - ELTL-25 m
 - Greater than 25 m depth

EHTL - extreme high tide line, ELTL – extreme low tide line. 25 m = 14 fathoms or 82 feet. See individual habitat type definitions in Oregon Marine Reserve Policy Recommendations (2008).

³ The phrase “and scientific information” was added to the original definition from OPAC’s 2008 Oregon Marine Reserve Policy Recommendations. The reference was updated to reflect the most up-to-date information.

⁴ As directed in HB 1601 (Beach Bill), the State Highway Commission surveyed the coastline after its passage and the established survey points (the statutory vegetation line) were approved in 1969 (HB 1045).

⁵ Rocky Substrate: The rock in rocky habitat consists of geologic substrate comprised of:

- Bedrock, or
- Megaclasts (rock > 4 meters in size), or
- Rock fragments, boulders, or cobble which, individually, are greater than 64mm (2.5”) in size, or
- Any combination of the above

The rocks can comprise the substrate surface, rise above the substrate surface, or in some cases be covered with a thin layer of sand or mud (e.g., in the case of surfgrass beds – the surfgrass is anchored on rock but the presence of surfgrass can cause a thin layer of sand to be deposited on the rock, thus obscuring the rock from the view on the surface). Rocky habitat consists of outcrops or deposits of the above-described material either along the shoreline or in submerged areas. The individual rock structures or fragments within a rocky habitat area are often interspersed with gravel or sediment and overlain with biogenic habitat features. This creates a complex mix of substrate characteristics that all contribute to the form and function of the rocky habitat. Thus, a rocky habitat can have non-rock (sand, gravel, biological) components (OPAC, 2019 – Draft).

⁶ Soft bottom subtidal habitat is defined as extending from the lowest reaches of the intertidal west to the outer extent of the Territorial Sea. It includes any substrate that has a grain size <64 mm (2.5”). Subtidal soft bottom habitats are diverse, as a result of distinct organism assemblages that are influenced by differences in substrate type (sand vs. gravel vs. mud), organic content and bottom depth. The Oregon coast primarily is an exposed, high energy environment, so most soft bottom subtidal areas are sandy. Mud can be a more pronounced bottom type in areas receiving less energy from water movement (e.g., isolated and sheltered embayments) and in deeper waters toward the outer edge of the Territorial Sea (ODFW, 2006).

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Key species – Algal, invertebrate, and fish species selected as priority for ecological monitoring and analysis. Key or focal species were selected based on ecological, economic or management importance; further criteria included their likelihood to show a response or change within the marine reserve over time, feedback from scientific experts, and/or feasibility of being able to collect long-term data

Marine transit– the act of passing through or across waters of Oregon’s Territorial Sea

Resilience – the capacity of a system to absorb natural or anthropogenic disturbance while retaining the same function, structure, and feedbacks (Walker & Salt, 2006)

Safe harbor – Sheltering of a vessel (e.g., during a storm) in a natural or artificial location

Significant (regarding social and economic impacts) – The beneficial or adverse impacts of Marine Reserves and Marine Protected Areas on ocean users, coastal communities, and other communities of interest. The significance of these impacts depends on context and intensity. See Oregon’s Territorial Sea Plan⁷ and the Council on Environmental Quality⁸⁹ for additional information.

References

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⁷<https://www.oregonocean.info/index.php/ocean-documents/planning/territorial-sea-plan2/appendicies/1558-otsp-appendix-a-glossary-of-terms/file>

⁸https://www.ecfr.gov/cgi-bin/text-idx?SID=2d5f3e57fd00f4d60159ef142bcfced&mc=true&node=se40.37.1508_127&rgn=div8

⁹<https://ceq.doe.gov/docs/laws-regulations/FR-1973-08-01-38-FR-20550-CEQ-NEPA-Guidelines-revised.pdf>

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