Regional Priorities for Social Science Research on Marine Protected Areas:

Pacific Coast

Final Workshop Report

NATIONAL
Marine Protected Areas
CENTER

Monterey Marriott, Monterey, California
August 9-11, 2005

The Social Science Research Strategy for Marine Protected Areas identifies priority areas of social science inquiry that are fundamental to the planning, management, and evaluation of marine protected areas. It also recommends practical ways to address these priorities through research, assessment, capacity building, and leveraged funding.

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http://www.mpa.gov/virtual_library/Publications/ssr_strategy.pdf

Regional Priorities for Social Science Research on Marine Protected Areas: The National Marine Protected Areas Center is building on the National Social Science Research Strategy for Marine Protected Areas by holding regional workshops with the goal of identifying region-specific research priorities that address local MPA-related information needs. This report on the workshop held in the Pacific Coast region is the fourth in the series.

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National Marine Protected Areas Center Science Institute. (2005). *Regional Priorities for Social Science Research on Marine Protected Areas: Pacific Coast, Final Workshop Report*. National Marine Protected Areas Center Science Institute, Santa Cruz, California, 105pp.

Reports from three other regional workshops are available:

National Marine Protected Areas Center Science Institute. (2003). *Regional Priorities for Social Science Research on Marine Protected Areas: U.S. Caribbean and South Florida, Final Workshop Report.* National Marine Protected Areas Center Science Institute, Santa Cruz, California, 67pp.

http://www.mpa.gov/information_tools/pdf/caribbean.pdf

National Marine Protected Areas Center Science Institute. (2003). *Regional Priorities for Social Science Research on Marine Protected Areas: South Atlantic, Final Workshop Report.* National Marine Protected Areas Center Science Institute, Santa Cruz, California, 88pp.

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National Marine Protected Areas Center Science Institute. (2004). *Regional Priorities for Social Science Research on Marine Protected Areas: U.S. Pacific Islands, Final Workshop Report.* National Marine Protected Areas Center Science Institute, Santa Cruz, California, 101pp.

http://www.mpa.gov/information_tools/pdf/pacific_islands.pdf

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NATIONAL Marine Protected Areas CENTER

For more information about the MPA Center Science Institute please visit www.mpa.gov

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I. Introduction

This document is the result of the fourth workshop in a series of workshops being held around the country to identify regional research and data needs related to the human dimensions of marine protected areas (MPAs). This workshop covered the U.S. Pacific Coast including the states of California, Oregon, Washington, and Alaska. Representatives from Canada and Mexico were also invited to participate, but only those from Canada were able to attend.

The workshop was held at the Monterey Marriott, Monterey, California, from August 9-11, 2004, and included 34 participants from federal and state agencies, academic institutions, regional governing bodies and non-profit organizations.

II. Workshop Goals: Crafting a Regional Research Plan

The National Marine Protected Areas (MPA) Center was established in late 2000 by the National Oceanic and Atmospheric Administration (NOAA), in partnership with the Department of the Interior. The mission of the MPA Center is to facilitate the effective use of science, technology, training and information in the planning, management, and evaluation of the nation's system of MPAs.

In an effort to strengthen the nation's understanding of the human context of MPAs, the MPA Center Science Institute developed a report called the *Social Science Research Strategy for Marine Protected Areas*. This report is a conceptual piece that reflects, at the national level, the growing interest in the application of social science information in the planning, management, and evaluation of MPAs. The strategy identifies the following six priority research themes that encompass a broad range of disciplines and address pressing social science needs for MPAs:

- **Governance, institutions, and processes:** This theme covers the structure and function of the formal and informal institutions (federal, tribal, state, local, and non-governmental) involved in the management of marine protected areas. Component topics include the jurisdictional structure and the roles, responsibilities, and relationships among the bodies involved in MPA management; the nature and level of public activity and the models that guide public involvement in MPA design, management, and evaluation; the structure and functioning of the specific mechanisms and underlying legislation for MPAs; and, the organizational culture of the institutions that influences decision making in MPA processes.

- **Use patterns:** This theme addresses the ways stakeholders use resources in and around marine protected areas. It includes the spatial and temporal dimensions of consumptive and non-consumptive uses, user demographics, intensity and compatibility of uses, and the wider sociopolitical and economic context within which human activities are embedded.

- **Attitudes, perceptions, and beliefs:** This area of inquiry refers to the underlying cultural models and systems of meaning that inform human behavior and their role in structuring the relationship between people, the marine environment, and MPAs. The theme covers environmental ethics, or the moral status and value of the marine resources and their role in defining the relationship between humans and MPAs; aesthetics and the culturally constructed concepts of beauty; and, traditional and local ecological knowledge, or the worldviews, knowledge, resource management systems, and relationships local, tribal, and indigenous people have developed with the marine environment.

- **Economics:** This theme deals with economic conditions and trends associated with marine protected areas. Subjects of interest include, but are not limited to, use and non-use values of non-market goods

and ecological services, costs and benefits of MPA alternatives, and the economic impacts associated with marine protected areas.

- **Communities:** This theme refers to the socioeconomic and cultural characteristics of the geopolitical and identity-based communities associated with MPAs. Topics include social networks and modes of communication within communities as they relate to decision making and the management of MPAs; the social and political capital of communities; and, the community's role in MPA management.

- **Cultural heritage and resources:** This theme encompasses the socioeconomic and cultural dimensions of maritime heritage associated with MPAs. Maritime heritage includes not only the material culture related to historical and traditional uses of marine resources (lighthouses, wrecks), but also the meanings, values, and knowledge systems associated with the current practices of living cultures that have a maritime orientation.

Recognizing the need for more detailed, locally-oriented research plans, the MPA Center Science Institute designed a series of workshops to prioritize social science information needs at the regional and local level, and through the workshops, develop regional social science research plans to address those needs. Workshop results include:

- A list of priority social science research projects for each region.
- Tools for building regional capacity through the identification of potential partners and funding resources to promote and establish coordination within the region among agencies, social scientists, and stakeholders.

These results are intended to inform MPA managers, agency decision-makers, researchers, funding sources, and affected stakeholder groups about priorities for social science research. These workshops are also designed to stimulate and encourage collaboration and coordination among agencies, social scientists, and stakeholders within the region.

III. Workshop Process

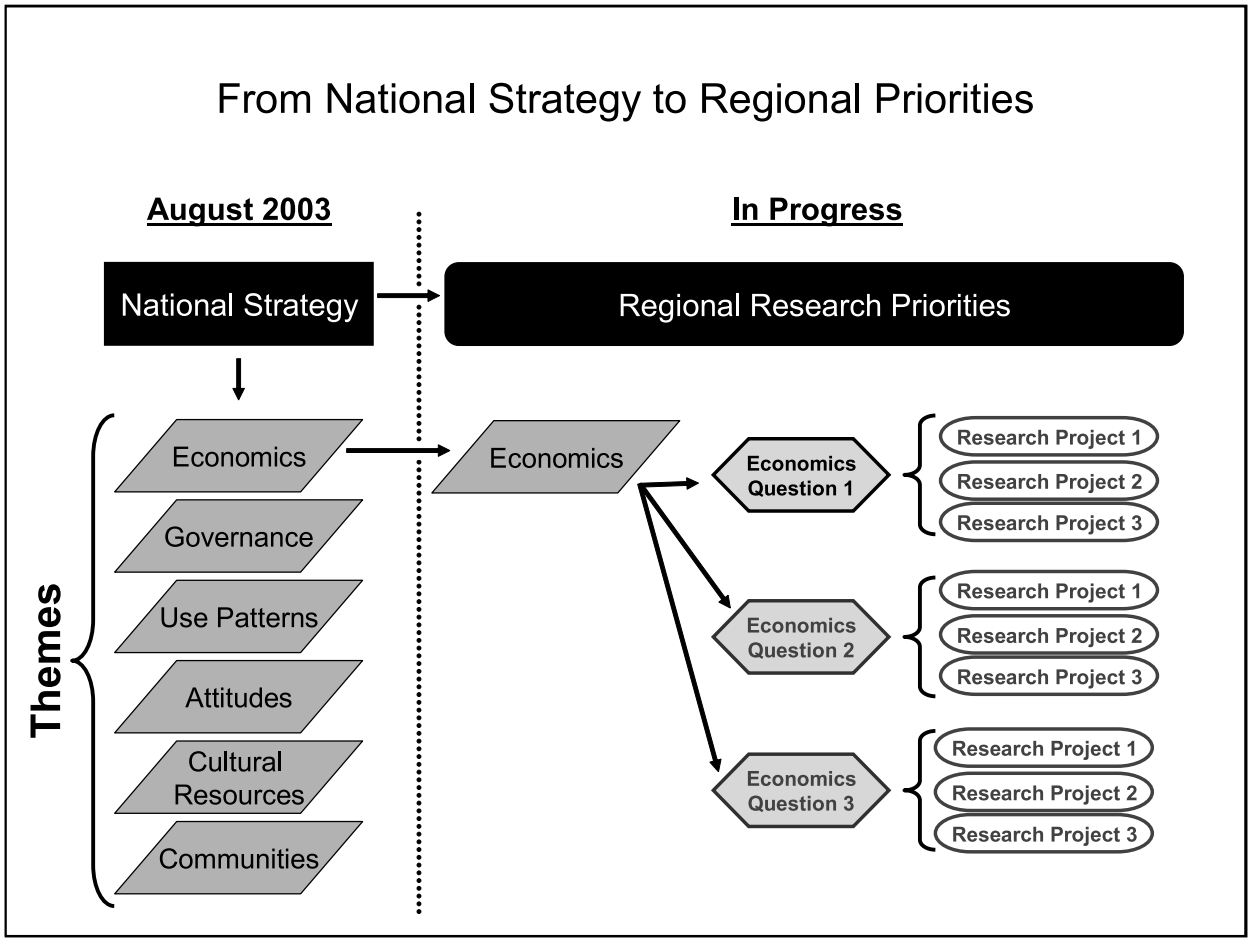
The MPA Center Science Institute developed the following process for each regional workshop:

WHEN	ACTION	WHO
Pre-Workshop	Compile the following background documents: summary of existing social science research efforts in the region; list of regional MPA-related resources and institutions; and, overview of the regulatory framework pertaining to each region.	MPA Center
	Coordinate workshop logistics: develop worksheet templates, budget, invitations, etc.	MPA Center
At Workshop	Identify priority information needs (research questions) for each relevant research theme, across each phase of the MPA cycle.	Workshop participants
	Determine strategies (research projects) to address each information need.	Workshop participants
	Develop project details for high priority projects.	Workshop participants
	Discuss methods for building and strengthening the regional capacity.	Workshop participants and MPA Center
Post Workshop	Compile and post/publish/distribute report.	MPA Center

In preparation for each workshop, the MPA Center Science Institute compiles the following background documents for each region: a summary of existing social science research efforts (see Appendix C); a list of research institutions and information resources (see Appendix D); and a regional regulatory framework with a list of statutes and regulations related to MPAs (see Appendix E). The summary of current and existing research is presented during the workshop to encourage discussion about the MPA-related social science research that has been conducted in the region, and to stimulate thought and discussion on the information gaps and priority research needs. The list of local institutions and resources, which identifies potential partners and funding sources for the implementation of proposed social science projects, provides a basis for the discussion on building the regional capacity. Finally, the regulatory framework serves to illustrate the MPA policy structure within which the region functions, and highlight those mandates that address the need for research on the human dimensions of marine environments.

During the workshop, participants address the six thematic priorities outlined in the *Social Science Research Strategy for Marine Protected Areas* as they pertain to regional research and information needs. Figure 1 illustrates the transition from the broad national thematic priorities, to the identification of regional research priorities.

Figure 1: Identification of regional social science research priorities



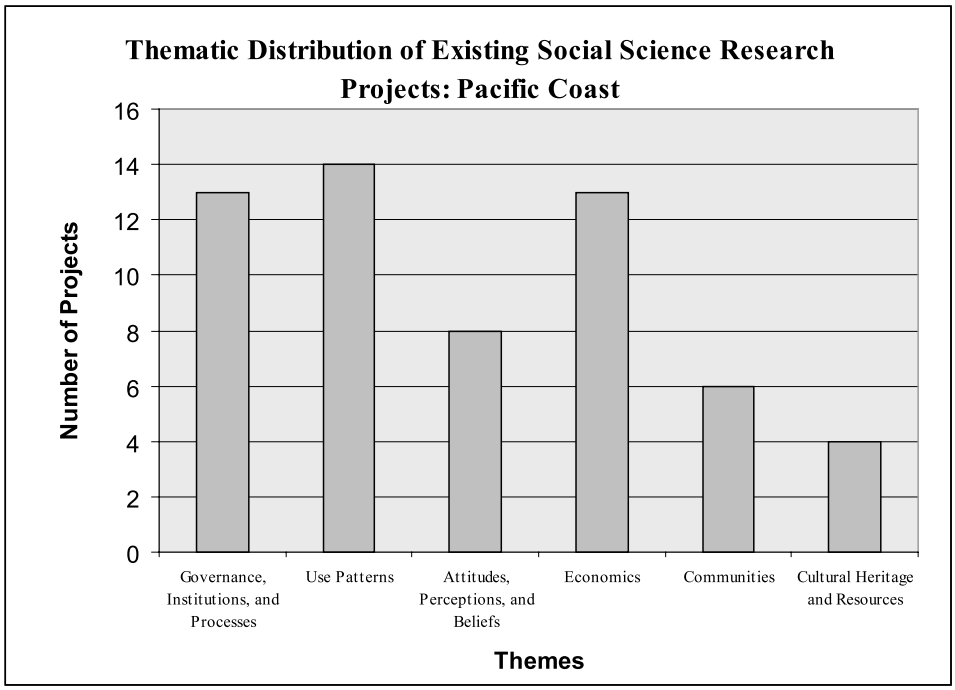
Workshop participants generate an initial list of priority needs and issues in the form of research questions for each theme (see Appendix B), ultimately choosing the twelve most pressing questions. Specific research projects are then developed to address the priority research questions (see Appendix A). These research projects are developed in detail and include information such as geographic coverage, applicability to MPA policy cycles (planning, management, and/or evaluation), expected outcomes/outputs, challenges, estimated duration, estimated cost, potential partners, and linkages with existing social and natural science efforts.

IV. Summary of Existing Social Science Research in the Region

Prior to the Pacific Coast workshop, the MPA Center Science Institute compiled a list of existing social science research efforts that relate to MPAs in the Pacific Coast region in order to stimulate discussion on information gaps and research needs. Whenever possible, the principal investigators of the projects were contacted to ensure the recording of complete and accurate information. During the workshop, participants assisted in identifying additional, extant research efforts and were invited to send information about these projects after the workshop. The summary that follows and the list contained in Appendix C represent the results of this process and are not meant to serve as a comprehensive literature and materials review of all social science efforts related to marine environments on the Pacific Coast. Of the 58 projects and publications identified for the Pacific Coast region, 42 pertain directly to MPAs and 16 cover related topics such as marine ecosystem management, participatory research, tourism, coastal communities, and fishermen's knowledge and behavior.

Figure 2 summarizes the distribution of the existing research within the region among the six themes addressed in the *Social Science Research Strategy for Marine Protected Areas* (see Appendix C for a summary of these projects). The existing efforts in this region address each of the six thematic areas. While there is a great deal of overlap between the themes, the three areas of inquiry that have the highest concentration of research efforts include use patterns; governance, institutions, and processes; and, economics. Fishermen and fishing communities on the Pacific Coast have received the most attention. Two prominent, cross-cutting issues addressed by the extant research include the need to develop better methods for measuring use activities and calculating socioeconomic impacts and values; and, the importance of participatory mechanisms and the incorporation of local knowledge for MPA siting and planning.

Figure 2: Summary of existing social science research efforts by theme

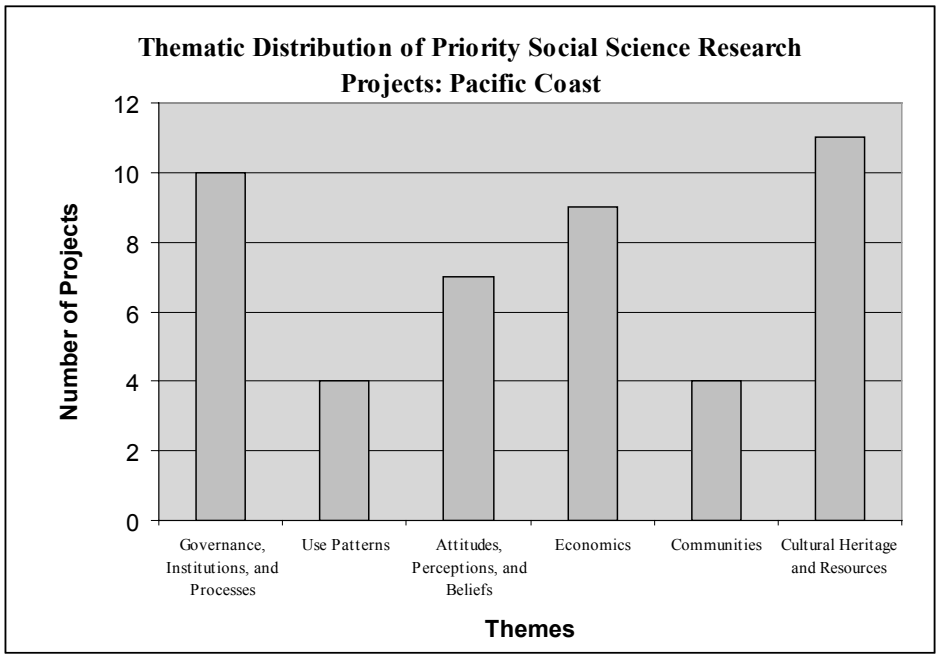


NOTE: *Some projects cover more than one theme. Of the total 58 extant research projects in the region 50 are completed and 8 are in progress.*

V. Priority Research Questions and Projects

At the Pacific Coast workshop, participants identified 12 priority social science research questions and designed 45 projects to address the information needs related to these questions. Figure 3 summarizes the distribution of these projects by the broad research themes laid out in the national *Social Science Research Strategy for Marine Protected Areas*.

Figure 3: Summary of priority social science research projects



Most of the research questions and projects cross numerous thematic boundaries as a result of incorporating diverse theoretical and methodological approaches to address complex socioeconomic and cultural phenomena. The cross-fertilization of ideas throughout the workshop resulted in the development of creative projects that span disciplinary boundaries and perspectives. The following points summarize key topics that emerged from the workshop. These topics are reflected in the composition of individual projects.

Lessons Learned: There was a great deal of concern among participants for learning from the successes and failures of other MPA processes through background research, literature reviews, and evaluations of existing efforts and processes. The case study approach is commonly found among the projects generated during the workshop. Participants also emphasized the need for conducting the background studies necessary to determine the social science methods and tools that exist, how they have been applied in MPA contexts, and their successes and limitations.

Attitudes, Perceptions, and Beliefs: Workshop participants assigned considerable importance to gathering baseline information on attitudes, perceptions, and beliefs about MPAs in order to establish the baseline for measuring trends and assessing the perceived effectiveness of MPAs and the processes through which they are established. The importance of employing methods for measuring attitudes, perceptions, and beliefs emerged often in discussions of governance themes, use patterns, and cultural heritage and resources, but was also noted to be important in each of the other thematic areas including economics.

Cultural Heritage and Resources: The cultural heritage and resources theme was given considerable attention during the workshop and generated projects that move far beyond the characterization and inventorying of material culture. Projects related to cultural heritage and resources emphasize the connection between living cultures, identities, practices, places, and material resources. They demonstrate in a very profound manner the linkages between the social science research themes and the need for interdisciplinary cooperation.

Methodological Rigor: There was strong interest in standardization of measures and reporting formats in order to avoid "reinventing the wheel" and promote replicability. An emphasis on developing indicators for various socioeconomic phenomena reflected a similar concern for standardization.

Methodological Creativity: The emphasis on methodological standardization was balanced by a concern for developing new tools and cutting edge methodologies that move beyond the standard boundaries of science, and include participatory methods and alternative epistemologies. Participants expressed a keen awareness of the needs of tribal and traditional cultures, their relationships with the environment, and their systems of knowledge and resource management. Many projects are built in recognition of the need to incorporate lessons learned from traditional, tribal, and indigenous perspectives.

Disciplinary Diversity: The diversity of researchers and disciplines represented at the workshop made for interesting discussions concerning the methods that are most appropriate for the investigation of the thematic areas. The economics theme, for example, emerged as being relevant to a variety of social science methodologies and not simply those associated with the discipline of economics. Among participants were those who favored employing qualitative approaches to economic phenomena and those who promoted quantification and modeling.

Integration: Despite the disciplinary differences that evinced, at times, methodological favoritism, participants demonstrated a heightened awareness of the need to promote more effective integration of methodological approaches and science disciplines in order to better understand the complexity of issues related to MPAs, and ecosystem-based management in general. Integration was conceptualized along a number of axes including: social science vs. natural science; quantitative vs. qualitative methods; science vs. other epistemologies such as local knowledge and traditional knowledge; and, the importance of participatory methods.

Communication and Cooperation: A recurrent issue of paramount concern that is reflected in many of the research projects developed during the workshop is the need to find ways of bridging communication barriers among and between the various governance institutions and agencies across international, federal, state, territorial, tribal, and local jurisdictional boundaries; as well as the myriad stakeholders and constituent groups. Participants were interested in developing more effective governance structures and processes through cooperation and the integration of diverse sets of goals and objectives.

Stakeholders: Many projects reflect the participants' concern for improving our understanding of stakeholders and participatory research and management models. There was a general recognition among participants, across all project types and themes, that stakeholder input and participation is critical for the success of management efforts and the conduct of social science research on MPAs.

Following is a list of all questions and projects by theme.

Governance, Institutions, and Processes

How do we develop the infrastructure or policy-making structure to design effective MPAs across boundaries (geographic and political) and across various government and user groups?

- Comparative evaluation of multiple MPA initiatives across political borders in the Gulf of Georgia-Puget Sound region.
- Using existing study of Washington State MPAs analyze approaches to improving effectiveness through multi-agency cooperation.
- An analysis and evaluation of California's experience in ocean governance to serve as 'lessons learned' for the West Coast.

How do we design MPAs to ensure compliance?

- Marine protected area compliance on the West Coast: Patterns and regulatory and enforcement recommendations.
- Investigating the effects of information sharing and stakeholder involvement on compliance with MPA regulations and stewardship of MPA resources.
- Does early involvement of stakeholders/users in regulatory design enhance compliance? Hypothesis testing in two urchin fisheries.
- Comparative evaluation of measures of compliance with MPA regimes.
- Tools for effective compliance: A literature review and case studies.

How do we develop governance structures that involve indigenous people and include treaty and indigenous rights?

- Symposium/forum for regional, tribal and indigenous peoples to discuss tribal involvement in MPA network development.
- Seed money for tribes for profiling socioeconomic patterns, marine resources in need of protection, and impediments for participation.

Use Patterns

How to integrate quantitative and qualitative analysis of use patterns with biophysical research that characterizes ecosystem stress to inform management?

- How can biophysical data and existing use data be integrated for Alaska marine environments to better explain current fisheries and to predict the impacts of climate change?
- Integrating socio-economic and biophysical data: Defining indicators, their scope and frequency of measurements for MPA management in the Channel Islands and Monterey Bay National Marine Sanctuaries.
- Integrating primary, secondary and expert opinion to understand relationships between use patterns and biophysical indicators.
- Evaluation of the frequency at which social and ecological data will be collected to understand the influencing factors on an MPA's ecological and social systems.

Attitudes, Perceptions, and Beliefs

How can we foster collaboration between natural and social scientists, scientists and stakeholders, and scientists and policymakers?

- Facilitate collaboration between natural and social scientists in MPA development and management.
- Conduct a critical review of participatory collaboration, including criteria for success and conditions and incentives conducive to success.
- Participatory MPA monitoring manual and training program.

How can we use attitudes, perceptions, and beliefs research to evaluate the management of MPAs?

- Barriers and strategies for integrating biophysical and social science to inform MPA planning, management and evaluation.

- Evaluating the effectiveness of MPA education and outreach.
- What is the baseline of attitudes, perceptions, and beliefs of visitors and other human users, including managers, and how can we develop monitoring protocols for future management strategies?
- How can managers influence appropriate human-wildlife interactions?

Economics

What economic and social indicators, market and non-market, measure distribution of costs/benefits of MPAs at different spatial scales?

- Collecting costs, earnings, employment for marine sectors.
- What are the socio-cultural influences of MPA implementation upon communities proximal to the Southern Strait of Georgia and Puget Sound areas?
- Measures of intensity of coastal and marine uses.
- Eliciting user group input regarding spatial distribution of marine activities.
- Recreational Fisheries Information Network (RecFIN) add-on to determine spatial distribution of recreational fishing activity.

What are the economic effects of current and proposed uses of marine resources?

- How will aquaculture affect the future value/use of MPAs for fisheries management goals?
- Forecast the economic effects and how MPAs would affect the trajectory of uses and visa versa.
- Inventory proposed marine/coastal resources and uses for alternative energy and determine the impact on current uses.
- Inventory of current marine/coastal resources and uses.

Communities

How do MPAs affect local and regional power relations within and across communities and vice versa?

- Multiple case studies of existing power relations in communities undergoing the process of proposing or establishing an MPA.
- Power transfer from traditional legal systems in marine protection and its effect on incentives for sustainability goals of MPAs in the Pacific Northwest.
- Case studies of existing MPAs to determine the effects of MPAs on power relationships.
- Power dynamics within community-based MPAs: a longitudinal study.

Cultural Heritage and Resources

How should we integrate customary and local knowledge as well as historical, archaeological, linguistic and ethnographic data into developing and managing successful MPAs?

- Mapping the coupled social ecological space to identify critical domains of proposed or existing marine protected areas.
- Regional scale integration of knowledge of long term human relationships with Salish Sea ecosystems.
- Documenting stewardship and tenure systems of Pacific Northwest tribes.
- Marine protected area management and sustainable tribal and traditional societies: Case studies from the west coast.
- MPA social science handbook.

Develop a framework for measuring, analyzing, and evaluating social, cultural, economic, and ecological values and tradeoffs for different MPAs.

- A case study review of techniques used in MPA development for incorporating social, cultural, economic and ecological values and trade-offs.
- Survey of available and applied tools for analyzing and evaluating trade-offs among social, cultural, economic, and ecological values in the planning, management, and evaluation of MPAs.

How to define and establish visitor use capacity, including carrying capacity for cultural resources?

- Develop empirical database that allows selection of quantifiable indicators and standards of visitor experience quality and resource (cultural and natural) integrity.
- Regional zoning: A new approach to analyze regional carrying capacities in an effort to rationalize zoning of disjunct MPAs.
- Replicating the Channel Islands datum installation monitoring program and shipwreck trail project.
- Quantitative visitor management: Applications of logistic models to marine protected areas in Puget Sound and the Southern Gulf of Georgia.

VI. Building Regional Capacity

The last session at the workshop consisted of a discussion on building the regional capacity to conduct social science research and incorporate it into the planning, management, and evaluation of MPAs. Participants exchanged thoughts on how to 'get the word out' about the research priorities associated with the human dimensions of MPAs, and the identification of potential funding sources. Following is a brief synopsis of the main points discussed at the workshop.

A. Getting the Word Out

The workshop participants discussed a variety of means for calling attention to the need for a concerted effort to bolster social science research on MPAs. They pointed out the importance of promoting the human dimensions research among academic and applied researchers, as well as the government agencies responsible for managing MPAs. Participants felt that outreach efforts must instill a heightened sense of urgency among planners and researchers for the collection of sound socioeconomic and cultural data, especially in light of the rapidly evolving MPA processes on the Pacific Coast. As a starting point, participants urged that they use the momentum generated by the workshop to propel further interest in the social science of MPAs among colleagues, students, managers, and policy makers. An important objective is to promote the incorporation of social science research into the budget and strategic planning processes of federal and state agencies that manage MPAs. The institutionalization of social science needs is a high priority. One suggestion called for the group to write a letter to NOAA administrators expressing support for the workshop, its success in bringing researchers together, and its value in promoting the integration of social science into the planning and management of MPAs. Other suggestions included:

- Co-authoring an article that highlights the results of the workshop (for MPA News or peer-reviewed journal such as Tourism in Marine Environments).
- Generating a mass email statement or 'manifesto' that addresses the human dimensions of MPAs and calls for increased application of social science methods.
- Providing formal presentations on the lessons from the workshop to participants in specific MPA planning processes such as the Marine Life Protection Act Initiative in California.
- Developing panel presentations and symposia for professional, interdisciplinary meetings that highlight the importance of integrating social and natural sciences (American Fisheries Society, Coastal Society, Society for Human Ecology, Society for Conservation Biology, Society for Natural Resources Conservation).
- Building on the relationships and ideas formed by the workshop to develop more specific and fundable research projects and agendas that meet regional needs.
- Establishing an MPA Foundation to act as a clearinghouse for information and to fund priority research on MPA.
- Working more closely with managers through training and outreach programs to raise awareness of the human dimensions of MPAs and coastal management in general.

- Conducting more outreach among stakeholders in order to create public support for more research.
- Linking social science research results with formal education and outreach programs among students, planners, and managers.

B. Funding Sources

Workshop participants also discussed how to generate and leverage funds for research on priority social science information needs. They developed a list of potential funding sources that include government offices and agencies, public and private grant programs, regional organizations and initiatives, and non-government foundations, industries, and donors. Participants stressed the importance of building social science agendas into the planning processes of government and non-government organizations. Research needs should be identified and funded not only through piece-meal efforts, but through dedicated programs that become established in annual operating plans.

Potential Funding Sources

- Federal:
  - National Oceanic and Atmospheric Administration (NOAA) Programs: National Marine Protected Areas Center; National Marine Sanctuary Program; National Center for Coastal Ocean Science – new Human Dimensions Program; National Marine Fisheries Service (Saltonstall-Kennedy Grant Program; fishing community research).
  - Sea Grant Programs
  - US Fish and Wildlife Service
  - National Park Service
  - US Environmental Protection Agency: Science to Achieve Results grant program
  - Minerals Management Service
  - US Geological Survey: Science Impact Program
  - Preserve America grant program
  - National Science Foundation
  - Social Sciences and Humanities Research Council (Canada)
- Regional:
  - Pacific Salmon Commission
  - Commission for Environmental Cooperation
  - Pacific States Marine Fisheries Commission
  - Georgia Basin Ecosystem Initiative (Canadian federal and provincial partners)
  - North Pacific Research Board
- State/local:
  - California Ocean Protection Council
  - Puget Sound Action Team (Washington state)
  - State and county offices of economic development
- Non-governmental:
  - National Marine Sanctuary Foundation
  - National Fish and Wildlife Foundation
  - Packard Foundation
  - Environmental Advocates (Ecotrust, Environmental Defense)
  - Gordon and Betty Moore Foundation
  - MacArthur Foundation
  - Individual donors/investors (Paul Allen)

- Industry:
  - Sustainable extraction industries (fishing, energy)
  - User sectors (sportfishing, diving, tourism)

VII. WORKSHOP PARTICIPANTS

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Appendix A. Proposed Priority Research Projects

Governance, Institutions, and Processes

This theme covers the structure and function of the formal and informal institutions (federal, tribal, state, local and non-governmental) involved in the management of marine protected areas. Component topics include the jurisdictional structure and the roles, responsibilities, and relationships among the bodies involved in MPA management; the nature and level of public activity and the models that guide public involvement in MPA design, management, and evaluation; the structure and functioning of the specific mechanisms and underlying legislation for MPAs; and, the organizational culture of the institutions that influences decision making in MPA processes.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we develop the infrastructure or policy-making structure to design effective MPAs across boundaries (geographic and							
Comparative evaluation of multiple MPA initiatives across political borders in the Gulf of Georgia-Puget Sound region.	Jurisdiction of Gulf of Georgia-Puget Sound region is shared by two states, their subdivisions (state, provincial, counties, districts municipalities), and large number of tribal and First Nations governments exercising aboriginal and Treaty rights. Similarly, numerous MPA initiatives have independently arisen, engaging different combinations of government actors in different ways. This project will compare the consensus-building process of these initiatives, and the extent to which they have built political and public support for the establishment of MPAs as an exercise in developing criteria for measuring success in building effective inter-governmental processes of MPA design and implementation. Comparative experience is useful in designing the process for bringing governments together to design and eventually manage MPAs. This project will also suggest criteria for evaluating the political/governance dimensions of the 'success' of MPAs, which is essential for continuing to learn from experience as more MPAs are established.		•	•	•	•	1. Detailed narratives of MPA initiatives in the Gulf-Puget Sound region focusing on trans-jurisdictional participation, conflicts, and processes of cooperation and resolution. 2. Critical comparison of initiatives in terms of inter-governmental cooperation and other appropriate criteria of success. 3. Recommendations – lessons learned for future inter-governmental process of establishing MPAs.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
political) and across various government and user groups?												
Qualitative character of the research. Need to define appropriate criteria of success, particularly to the extent that the initiatives under study are continuing and have not yet resulted in creating many MPAs. Thus, success must be measured in terms of multi-agency cooperation and commitment to establishing and managing MPAs but may not be able to address whether the MPA is effective in protecting ecosystems.			•				•				1. University of British Columbia: Faculties of Law, Fisheries 2. University of Washington, School of Marine Affairs 3. University of Victoria (British Columbia), Aboriginal Government Program	This project broadly overlaps with attitudes, perceptions, and beliefs (of government staff); governance (compliance, enforcement); and communities (power relations with respect to small governments such as counties and tribes.

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we develop the infrastructure or policy-making structure to design effective MPAs across boundaries (geographic and							
Using existing study of Washington State MPAs analyze approaches to improving effectiveness through multi-agency cooperation.	MPAs often are designated by a single agency in an environment where no single agency has the authority to manage all human activities. In this paradigm multi-agency cooperation is necessary to meet conservation and sustainable use objectives. This project will look at a range of MPA types designated through various authorities for a variety of objectives. Objectives will be matched to mandated agency. Then tools to build cooperative management with the goal to meet MPA objectives will be investigated. The project will build on existing literature on the status of MPAs in Washington State (Steve Murray circa 1999). World Conservation Union (IUCN) categories could also be used to develop a generic set of objectives for the range of MPA types. The range of MPAs described in Murray will form the basis for developing a range of cooperative management tools and recommend strategies for the various agencies to approach other authorities that can aid making the MPAs more effective. The investigation could look at activities at specific points in MPA cycle, i.e. building cooperative arrangements at the planning or management stages.		•	•	•		1. Strategies to engage multi-agencies and encourage cooperation in MPA management.
An analysis and evaluation of California's experience in ocean governance to serve as 'lessons learned' for the West Coast	California was the first state to pass ocean legislation following the Oceans Commission report. The key ingredient of this process is the establishment of a network of marine reserves, a type of MPA, under the Marine Life Protection Act. This project will describe and investigate the California process in order to examine and evaluate the structures that set up the legislation and the goals and standards set as a result of the process. Analysis will incorporate concepts and theories from such fields as public and marine affairs, political science (institutional and regime theory), and organizational behavior. Determine whether California's governance is unique or whether the experience is transferable to other states. The project will elaborate the lessons learned in establishment of an infrastructure to design effective MPAs.	•		•	•	•	1. Possible applicability of California's experience to other states. 2. Refinement of California's concepts and processes. 3. Will serve as a first stage assessment of expected outcomes of California's ocean legislation.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
political) and across various government and user groups? (Continued)												
		•				•						
1. The process is in the early stages of development. 2. Selection of appropriate evaluation framework from the social science literature.			•					•			1. West Coast research institutes 2. Management agencies in California and other West Coast states 3. West Coast industry leaders	California's program is based on 'sound scientific research'. The project would link to research on stakeholder involvement, the role of scientists, and linking science and stakeholders.

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we design MPAs to ensure compliance?							
Marine protected area compliance on the West Coast: Patterns and regulatory and enforcement recommendations.	This project concerns a comparative consideration of responses to MPA-related regulations and enforcement activities. Compliance and non-compliance of interest encompasses forms of illegal behavior such as illegal fishing, illegal dumping, and illegal touristic and recreational access in MPAs and in areas that may be governed as MPAs. Analysis will draw on the most promising of concepts, tools, and strategies in the professional and academic fields of criminology and enforcement. Study areas will be selected from Puget Sound (Washington), the Farallon Islands (California), Coos Bay (Oregon) and Southeast Alaska.		•	•	•		1. Measures of incidence of compliance to MPA regulations. 2. Identification of non-compliance strategies. 3. Recommendations for the design of regulations likely to lead to compliance.
Investigating the effects of information sharing and stakeholder involvement on compliance with MPA regulations and stewardship of MPA resources.	Groups of MPA stakeholders will be involved in differing levels of information sharing and involvement in the planning of MPA regulations and enforcement. Treatment groups will be provided with one time educational material about the resources and regulations or voluntary guideline; with the same sort of educational material on a longer term basis; involved in an information sharing process in which they are asked what they know about the resources and their suggestions for protection; or actually involved in planning and implementation. All treatment will be paired with comparable control groups. An appropriate measure of compliance will be applied consistently to all treatment and control groups. To the extent feasible each treatment will be applied to more than one type of audience (e.g. local residents, transient tourist, and commercial users). Analysis will include comparisons across audiences and will be controlled for differences between MPAs. This will provide guidance for the design of the most effective information sharing strategies for MPA compliance and stewardship.	•			•		1. A valid comparison of the effectiveness of various methods of sharing information with respect to levels of compliance across audiences. 2. Provides direction for future research involving other types of audiences and other types of MPAs.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
The chief challenge will be to select the concepts and methods of modern criminology and use these in the MPA application.			•						•		West Coast universities, natural resource agencies, and marine community leaders.	
1. Human subjects institutional review board review. 2. Maintaining the independence of the treatment groups in a community context. 3. Lack of an established measure of compliance and the need to develop a plausible measure for the purposes of the study. 4. Will not capture longer term effects of information sharing or possible decay of these effects over time.			•				•				1. MPA administering agencies 2. Schools, local organization, commercial user associations 3. Academic agencies	Development of effective measures of compliance with MPA regulations/ guidelines; measures of the ecological success of MPAs; current research in education, marketing and communication; addressing the underlying issue of the relationship between thought and behavior; the connection between the development of an environmental aesthetic, an environmental ethic, and good stewardship practices.

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we design MPAs to ensure compliance? (Continued)							
Does early involvement of stakeholders/users in regulatory design enhance compliance? Hypothesis testing in two urchin fisheries.	This project tests the hypothesis that early involvement of user groups (fishermen in this case) in designing rules and regulations leads to increased levels of compliance with the resulting regime. The project will compare the southern California urchin fishery regulations created using a bottom-up approach that resulted in limiting the urchin fishery to 3 days/week, with the top-down regulatory approach to restoration of urchin fisheries in Washington's Puget Sound. In the latter case, Washington Department of Fish and Wildlife believes compliance has been poor. Research is especially relevant to understanding the time/stage at which user groups should be involved in planning for MPAs (and other marine management arrangements) to enhance compliance.		•	•	•		1. Increase the understanding of the link between user involvement in design and compliance levels. 2. Answer a critical question regarding the relationship of compliance to top-down vs. bottom-up processes of MPA creation.
Comparative evaluation of measures of compliance with MPA regimes.	Evaluating alternative means of enhancing compliance with MPA regimes depends on agreement on reliable measures of compliance that are valid and applicable across many different kinds of MPAs. This project will apply multiple independent measures of compliance to a representative cross-section sample of existing MPAs within one sub-region in which there are many different types of MPAs to ascertain the extent to which different measures of compliance agree, and the extent to which the measured levels of compliance, with different kinds of regimes, are consistent with local stakeholders' claims and perceptions.		•	•		•	1. Research-based recommendations for the preferred measures of compliance to be used in future evaluations of MPAs. 2. Preliminary evaluation of the success (in terms of compliance) of various MPA regimes within one region. 3. Proposed directions for future research on the effectiveness of different compliance regimes in other sub-regions and regions.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
May be difficult to compare due to differences in the regulatory context within which each case arose. Santa Barbara/ southern California urchin fishermen aimed to keep the price of the product high by reducing harvest. In Puget Sound, fishery restrictions arose after near collapse the urchin fishery 20 years ago and efforts on the part of the regulators to restore the fishery.			•				•				1. Dan Rothaus of Washington Department of Fish and Wildlife has extensive data on the Puget Sound case. This may make the project doable in 1 year, but may take 18-24 months. 2. California Department of Fish and Game 3. Urchin fishermen 4. Marine affairs, political scientists in research institutes in California and Washington	Compliance projects should all investigate other literature on compliance and link to enforcement, fisheries biologists, and managers to obtain an understanding of the dynamics of the urchin fishery.
This research may require institutional review board review, depending on the types of measures proposed. This research may be sensitive to stakeholders and MPA managers. The researchers must be diplomatic and include stakeholders and managers in developing the final research design.			•				•				1. Federal, state, and tribal MPA managers and regulators are essential partners. 2. Private conservancies, such as The Nature Conservancy and local entities such as the San Juan Preservation Trust and People for Puget Sound (in the Puget Sound region). 3. Private boat operators including charter boats, whale watching and tour boats, and marina managers may be important collaborators in data gathering. 4. Shore-line land owners who have direct visual observation opportunities.	Observation and enumeration of fish and other wildlife in MPAs to determine population trends involves many of the same methodological challenges.

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we design MPAs to ensure compliance? (Continued)							
Tools for effective compliance: A literature review and case studies.	This project examines, analyzes, and evaluates the tools currently used for effective compliance. It will include a literature review of studies of compliance relevant to MPA design, monitoring, and enforcement and will include literature on enforcement problems, mechanisms and indicators. It will also include a comparison of soft approaches (self governance, self-imposed, voluntary, education) and hard approaches (apprehension and incarceration, fines, penalties, confiscation of boats/equipment) to determine what works under what circumstances.		•	•	•	•	1. Improved understanding of necessary tools of compliance and enforcement, and the appropriate settings for each. 2. Contribute to the literature on compliance and enforcement, and fill in the big gap in the application to MPAs.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
Hard topic to study because of covert illegal behaviors.			•					•			1. Coast Guard 2. Military bases along Pacific Coast 3. National Marine Fisheries Service 4. State enforcement agencies 5. Port authorities 6. Department of Homeland Security 7. International Network for Environmental Enforcement (Durwood Zaelke) 8. TRAFFIC wildlife trade monitoring network 9. Criminologists and political scientists	

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we develop governance structures that involve indigenous people and include treaty and indigenous rights?							
Symposium/Forum for regional, tribal and indigenous peoples to discuss tribal involvement in MPA network development.	This project involves developing background materials/synthesis papers including existing government policies working with tribes & Treaties to determine what is working and what are the problems (National Association of Tribal Historic Preservation Officers study, and others); legal frameworks for agencies working with tribes and indigenous peoples; and traditional and contemporary governance structures for marine management and the social, cultural, ecological values associate with them (marine tenure systems, formal and informal social and cultural governance systems). The project will also review examples of existing governance systems that respect or disregard indigenous peoples in resource management: Environmental Protection Agency (Environmental Protection Agency), Marine Mammal Protection Act (MMPA), British Columbia Gwaii Haanas, New Zealand Maori rights, Australia Great Barrier Reef marine park (Innes, Rigsby, etc.); and locally managed marine area networks (LMMA) in the South Pacific (see MPA social science document, and google LMMA).		•	•	•		1. Increased indigenous participation and involvement in MPA processes, and in social science research for MPAs. 2. Building collaborative processes. 3. Research capacity building.

Challenges	Estimated Duration					Estimated Cost ($K)					Potential Partners	Linkages
	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500		
1. Ensuring appropriate people invited and willing to attend and manage the symposium. 2. Funding participation: Convince funders of value of this symposium to increase the likelihood of creating effective MPAs in marine areas with extensive indigenous and tribal rights and interests. 3. Tribal interests are usually local; expectations may be regional. 4. Participants will have different expectations for outcomes: anti-MPAs, research money, resource protections, asserting tribal rights, creating MPAs, etc.			•					•			Alaska Department of Fish and Game Subsistence Division; Alaskan Native Science Commission; Northwest Indian Fisheries Commission; all individual tribes down the coast; tribal colleges; MMPA Commissions (The Alaska Sea Otter and Steller Sea Lion Commission, Eskimo Walrus Commission, Nanook Commission, Alaska Native Harbor Seal Commission); Alaska Eskimo Whaling Commission; Goose Management Commission; Alaska Federation Of Natives; Columbia River Inter-Tribal Fish Commission; Aboriginal Fisheries Strategy (British Columbia); Council of Haida Nation; National Science Foundation (Arctic Social Science within Polar Programs); International Arctic Social Science Association; Rasmussen Foundation; MMPA agencies (US Fish and Wildlife Service, National Marine Fisheries Service); Environmental Protection Agency; State agencies; private foundations; Alaska Native corporations.	

Governance, Institutions, and Processes

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do we develop governance structures that involve indigenous people and include treaty and indigenous rights? (Continued)							
Seed money for tribes for profiling socioeconomic patterns, marine resources in need of protection, and impediments for participation.	Provide funding for tribes to document tribal socioeconomic patterns within their coastal communities; patterns of marine use within their areas of interest; marine resource protection needs; and, institutional and other impediments to tribal participation and/or control of marine resource management. This type of research and information can be incorporated into and help fashion MPA development and management. A co-managed MPA arrangement could benefit from the information obtained through the funded projects. Tribal groups will be better prepared to participate. The project could provide criteria for evaluation of the co-managed MPAs from a tribal perspective.		•	•	•	•	1. Profiles of socioeconomic patterns of use. 2. Maps of areas of interest for given tribes. 3. Descriptions of resources of interest for given tribes. 4. Inventory of impediments for effective tribal participation in resource management.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
1. Small tribes may not have staff and expertise to effectively access competitive funds. Demand for the funds will be greater than the supply. 2. Reported information may not be comparable across regions. 3. Identification of key people within tribes is difficult.			•						•		See symposium list for previous project.	1. National Marine Fisheries Service Fishing Community Profiling Project. 2. Linked to research at various federal agencies that is born out of the environmental justice executive order.

Use Patterns

This theme addresses the ways stakeholders use resources in and around marine protected areas. It includes the spatial and temporal dimensions of consumptive and non-consumptive uses, user demographics, intensity and compatibility of uses, and the wider sociopolitical and economic context within which human activities are embedded.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to integrate quantitative and qualitative analysis of use patterns with biophysical research that characterizes ecosystem							
How can biophysical data and existing use data be integrated for Alaska marine environments to better explain current fisheries and to predict the impacts of climate change?	Extensive environmental and biophysical monitoring has been ongoing in Alaska and research has been conducted to determine the impact of biophysical factors on fish populations. This project will attempt to extend this research to better understand the relationship between the data collected on the environment and commercial and recreational fisheries. This research will build upon past research and will include a model of spatially explicit fishing effort and a model of how fishers will adapt to a changing environment. Existing research on climate change will be utilized to attempt to predict how fisheries will evolve with climate change. MPA development in Alaska has thus far considered biophysical characteristics of proposed area closures as well as fishing effort. MPAs should be managed and evaluated in the light of how fishers change their behavior in light of a changing environment. Conditions in and out of MPAs will be critical to the fishing pressures that MPAs will face	•		•	•	•	1. Research that models fishing effort as a function of biophysical characteristics. 2. Electronic maps that allow users to observe the biophysical characteristics and over lay these characteristics with existing fisheries. 3. Predictions of future fishing effort as a function of changing climate. 4. Recommendations to natural scientists on how data can best be collected and organized for social science purposes.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
stress to inform management?												
To be useful, this project must be designed to incorporate new data and changing understandings and predictions of climate change. Spatial and temporal scale of data will have to be coordinated, which will be very challenging given the differences of data.			•						•		1. Alaska Fisheries Science Center 2. Pacific Marine Environmental Laboratory 3. University of Washington, University of Alaska	The essence of this project is attempting to take a large amount of currently available biophysical data and integrate it into our modeling of fisher behavior, particularly in regards to predictions of future activity.

Use Patterns

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to integrate quantitative and qualitative analysis of use patterns with biophysical research that characterizes ecosystem							
Integrating socio-economic and biophysical data: Defining indicators, their scope and frequency of measurements for MPA management in the Channel Islands and Monterey Bay National Marine Sanctuaries.	Identify available data sets on direct human uses, biophysical attributes (species, communities, and habitat type), nearshore land uses, and other factors that may influence human use and ecological health. Identify management issues that can be addressed using indicators; conduct gap analysis by hold expert workshop to identify data needs and gaps; and, determine methods for filling gaps. Integrate data and conduct analysis by identifying indicators (determining the explanatory power of variables); using statistical methods (latent variable analysis, cluster analysis); determining suites of indicators to describe processes, impacts, and outcomes; testing the impact of spatial scope on the explanatory power of indicators; and testing the impact of frequency of measurement on explanatory power of indicators. Test across sites (i.e., Channel Islands National Marine Sanctuary, Monterey Bay National Marine Sanctuary) and management issues and apply the above framework to identify and test indicators for use and management problems that differ between and within sites.		•	•	•	•	1. An identified suite of indicators with guidance on frequency and spatial scope of collection. 2. Developed method of identifying indicators and their collection protocols. 3. Method to evaluate changing effectiveness of indicators. 4. Determining cost-effectiveness of potential indicators.
Integrating primary, secondary and expert opinion to understand relationships between use patterns and biophysical indicators.	Description: Identify criteria by which to develop an effective information system that contributes to short-term and long-term understanding of the relationship between uses and biophysical systems. Expert opinions include scientists, agency experts, resource managers, resource users, and others with local knowledge. Develop a framework that allows evaluation of information regardless of the source and puts information in a broader context. Introduce innovation and creative approach to the information analysis to identify and clarify relationships between uses and biophysical characteristics. Methods could include individual interviews, small and large discussion groups, etc. Approach would need to be reflective of selection interview participants and leaders. Collect relevant primary and secondary data, identify data gaps, and evaluate data quality through the process. Determine the utility of expert opinion in identifying sources, evaluating quality and identifying gaps, and how best to fill the gaps.		•				1. A transparent process that is transferable. 2. Conceptual models as guidance for different contexts. 3. Demonstrate a range of alternative strategies that are available to maximize use information sources. 4. Conduct pilot projects to assess effectiveness of the different conceptual models in capturing relevant information and fostering institutionalizing interdisciplinary collaboration and integration of user group information.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
stress to inform management? (Continued)												
A. Filling the data gaps. B. Need for repeated evaluation (to understand the change of indicators).					•					•	1. Federal agencies with data (i.e., National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Environmental Protection Agency, National Park Service, Minerals Management Service, etc) 2. State agencies 3. Academics	
1. Information accessibility. 2. Quality of information. 3. Resistance of the disciplines to collaborative integration of new sources of data. 4. Establishing a common language across disciplines and between technical and non-technical experts. 5. Engaging local stakeholders in meaningful participation.					•				•			

Use Patterns

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to integrate quantitative and qualitative analysis of use patterns with biophysical research that characterizes ecosystem							
Evaluation of the frequency at which social and ecological data will be collected to understand the influencing factors on an MPA's ecological and social systems.	Identify all influencing factors on MPAs. Find a secondary location with similar biological attributes and social influences and uses that would be used as a control. Use a variety of methods to collect data on social and ecological influencers as a means of determining a suite(s) of indicators to be monitored on an on-going basis. Break down the influencers into ones that are hypothesized to have the need to be collected on differing frequencies. For example, daily, weekly, monthly, annually. Collect these different types of data beginning at the daily frequency rate. After 6 months of gathering data at this frequency, analyze and reassess to determine most appropriate frequency for monitoring.		•	•	•	•	Better understanding of data gathering frequencies.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
stress to inform management? (Continued)												
Money and time.					•			•			1. Academia, graduate students 2. Government agencies	Social and ecological sciences

Attitudes, Perceptions, and Beliefs

This area of inquiry refers to the underlying cultural models and systems of meaning that inform human behavior and their role in structuring the relationship between people, the marine environment, and MPAs. The theme covers environmental ethics, or the moral status and value of the marine resources and their role in defining the relationship between humans and MPAs; aesthetics, and the culturally constructed concepts of beauty; and, traditional and local ecological knowledge, or the worldviews, knowledge, resource management systems, and relationships local, tribal, and indigenous people have developed with the marine environment.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How can we foster collaboration between natural and social scientists, scientists and stakeholders, and scientists and							
Facilitate collaboration between natural and social scientists in MPA development and management.	A major aim of this project is to identify MPAs or other projects which represent exemplary examples of social and natural scientists successfully collaborate. Part of this project will be to determine the definition of success. We will examine case studies and describe these case studies. The project will then develop a mechanism for dispersing the results.		•	•	•	•	1. Survey of MPA management organizations. 2. Summary of success stories. 3. Suggested framework for managers to better facilitate collaboration, including an on-going (yearly) survey of what managers have done to achieve this goal.
Conduct a critical review of participatory collaboration, including criteria for success and conditions and incentives conducive to success.	Review literature (national parks and other areas where protected areas engage scientists, decision-makers, and stakeholders). Identify collaborative projects where scientists have worked with policy makers, stakeholders or in interdisciplinary research teams to identify replicable elements of success. Guidelines for replicating successful efforts create environments in which to foster additional collaborative benefits.		•	•	•	•	1. Increased quality of the research conducted in a participatory framework. 2. Increased confidence and understanding of the scientific explanations and results. 3. Extends the stewarding role across groups.
Participatory MPA monitoring manual and training program.	Develop a manual and training program for the design and implementation of participatory monitoring and evaluation for all stages of MPA design, implementation, and evaluation. Implement a pilot project using a draft manual and training guide that is utilized in various MPA sites along the West Coast. Evaluate effectiveness of the manual and training guide in order to revise the materials. Distribute revised manual and training guide widely while maintaining implementation site projects. Encourage agencies to adopt this program by hosting workshops whereby experiences are shared and revisions to manuals drafted. Develop a central repository of data collected through participatory monitoring.		•	•	•	•	1. A manual and training program for participatory monitoring of MPAs. 2. Better understanding the potential of such methods in the area. 3. Agency adoption of these methods that will complement scientific methods.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
policymakers?												
There is the potential that large stakeholders would not participate. Beyond initial efforts, there is the possibility that suggestions won't be implemented. A regular report by participating agencies on their actions to facilitate interdisciplinary work would be one tool to address this problem.				•					•		1. National Marine Fisheries Service 2. Other federal management agencies (National Park Service) 3. Private NGOs and donors 4. State government agencies	
1. Creating incentives for consumptive users to engage in participatory research. 2. Overcoming perceptions of bias in the participatory context.												Channel Islands Marine Reserves Monitoring Studies
1. Institutionalized resistance to non-scientific monitoring of MPAs. 2. Maintaining high data quality. 3. Cultural sensitivities.					•			•			1. Community members near MPAs 2. Academics, agency officials, NGOs	Data collected through this effort could complement currently collected scientific data.

Attitudes, Perceptions, and Beliefs

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How can we use attitudes, perceptions, and beliefs research to evaluate the management of MPAs?							
Barriers and strategies for integrating biophysical and social science to inform MPA planning, management and evaluation.	Survey of attitudes, perceptions, and beliefs (APBs) of the MPA community (including policy, management and science staff of federal, state, local and tribal agencies) related to institutional, methodological, and other barriers to integrating social and biophysical science to inform MPA planning, management and evaluation. APBs assessed may include perceptions of the availability and effectiveness of institutional mechanisms for collaboration across the biophysical and social sciences; attitudes toward the value of collaboration; and, beliefs about the effectiveness of alternative strategies for fostering collaboration. Survey could be combined with focus groups or a workshop designed to develop and implement strategies to overcome barriers identified.		•	•	•	•	1. Understand APB's of MPA community related to institutional, methodological and other barriers to integrating social and biophysical science to inform MPA planning, management and evaluation. 2. Develop and implement strategies for overcoming barriers identified, resulting in more effective use of biophysical and social science to set and achieve MPA cultural, social, and ecological values in the face of conflict among them.
Evaluating the effectiveness of MPA education and outreach.	This project will deal with the macro-evaluation of both informational and experiential education and outreach in MPA contexts. It will assess the effectiveness of knowledge transfer in affecting behaviors which reflect compliance and stewardship in diverse user groups. It will achieve multiple goals that include: determining educational needs for the purpose of developing effective education and outreach programs; understanding the linkages between knowledge, skills, attitudes, perceptions, and beliefs for the design of appropriate educational programming; assessing and monitoring the outcomes of education and outreach on the attitudes, perceptions, beliefs, and behaviors of diverse user groups; and applying this information to existing and developing MPA education and outreach programming.		•	•	•	•	1. Baseline information on attitudes, perceptions, and beliefs of diverse user communities. 2. Understand the role of APB research in determining educational needs, designing programs, and achieving continuous assessment of outcomes. 3. Provide tools for adaptive management of MPAs under changing user contexts such as demographics, policies, and other emerging factors.

Challenges	Estimated Duration					Estimated Cost ($K)					Potential Partners	Linkages
	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500		
Developing strategies for overcoming barriers to collaboration requires the very sort of collaboration the strategies would aim to foster.		•			•				•		1. National Oceanic and Atmospheric Administration: Coastal Services Center, MPA Center, National Centers for Coastal Ocean Science 2. MPA Community	
					•					•	1. Olympic Coast National Marine Sanctuary (Case Study 1) 2. Channel Islands (Case Study 2) 3. University of Alaska Anchorage, Resilience and Adaptive Management Group 4. National Park Service-Cooperative Ecosystem Studies Unit (Pacific Northwest)	Marine Sanctuaries Education and Outreach Programs

Attitudes, Perceptions, and Beliefs

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How can we use attitudes, perceptions, and beliefs research to evaluate the management of MPAs? (Continued)							
What is the baseline of APBs of visitors and other human users, including managers, and how can we develop protocols for monitoring for future management strategies?	Development of survey research techniques that measure attitudinal components that defines fundamental APBs toward MPAs and their mission. Design specific survey instruments to assess managers, visitors, local residents, nonuser groups, and others with special legal relationships including First Nation peoples. Allows managers to understand the larger existing cultural context in which the MPA managers execute their mission and how those APBs evolve to meet management needs. Evaluation of management outcomes against baseline data will inform the context of adaptive management strategies over time.		•	•	•	•	1. Statistical baseline describing key components of APBs for relevant groups. 2. Statistical segmentation of visitors into groups that correlate with a need for changing management decisions and planning. 3. Opportunity to innovate unique management strategies based upon new insights of values and uses.
How can managers influence appropriate human-wildlife interactions?	While interactions may on one hand be a way to encourage people to support wildlife and protection, these encounters also can have negative effects on wildlife. These interactions could be non-consumptive and organized like whale watching or more consumptive such as sport fishing or clam digging, or even unorganized such as random encounters during wilderness experiences. Preliminary research is indicating that it may not only be humans that are seeking out or having increased numbers of wildlife encounters; wildlife may also be seeking out human encounters as means of attaining handouts as alternate food sources or other unknown reasons. This project will examine the types of experiences that humans seek with wildlife, while at the same time wildlife scientists will study the behavior, health, and habitat of the wildlife to determine if factors specific to wildlife are resulting in increased encounters. By using cluster or consensus analysis we will identify different user groups/segments that have different ABPs towards wildlife encounters. This information will be used to develop management actions specific to each segment. Then we will conduct follow-up APB research (and other if appropriate) in 6 month intervals for two years to determine the effectiveness of management measures employed.		•		•	•	1. Increased support for MPAs through visitor appreciation of wildlife. 2. Decrease risk to wildlife and humans. 3. Framework to define what is appropriate and inappropriate wildlife-human interactions.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
1. Logistical difficulties associated with known probability sampling. 2. Lack of institutional archival facilities over long term for monitoring and evaluation. 3. Willingness of managers to utilize APB assessments to support adaptive management processes					•					•	1. Universities including graduate students. 2. NGOs in partnership with state and federal agencies with broad stakeholder responsibilities. 3. Community-based organizations affiliated through locale, or interests.	National Marine Sanctuaries
We don't know what an appropriate interaction with wildlife is - not even natural sciences have a lot of information around this. Requires working with ecological scientists collaboratively, also with First Nations, communities, and visitors to develop understanding of the issue and potential solutions.				•						•	1. Biological-ecosystem and social science academia 2. All levels of government-internationally 3. Industries 4. First Nations 5. Communities 6. Visitors	Links with natural science and depending on issue may link with industry (such as marine wildlife viewing industry).

Economics

This theme deals with economic conditions and trends associated with marine protected areas. Subjects of interest include, but are not limited to, use and non-use values of non-market goods and ecological services, costs and benefits of MPA alternatives, and the economic impacts associated with marine protected areas.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
What economic and social indicators, market and non-market, measure distribution of costs/benefits of MPAs at different							
Collecting costs, earnings, employment for marine sectors.	Collect costs, earnings, employment information for marine related sectors including-extractive (fishery measures of effort, establish a baseline for catch/unit effort; minerals – output, return on investment, net value, etc); service, tourist, and recreation (measuring visitation level, revenues by tourism and recreation related businesses).		•	•	•	•	1. Information system that allows identification of trends, problems, and opportunities. 2. Comparison of data across geographic and functional areas. 3. Comprehensive economic data on commercial fishing to allow assessment of economic impact of MPAs on fishing. 4. Ability to quantify economic impacts of a variety of MPA scenarios.
What are the sociocultural influences of MPA implementation upon communities proximal to the Southern Strait of Georgia and Puget Sound areas?	The purpose of this study is to examine how an MPA straddling the U.S. and Canadian border in the Pacific region would contribute to maintaining and enhancing quality of life in communities within the study area. Success of MPA establishment in an area depends in large part on community perception of the costs and benefits of MPA establishment. Recognizing that this marine ecosystem encompasses U.S. and Canadian waters, this study will use appropriate and participatory social science methods to monitor and compare quality of life including indicators such as, but not limited to: leisure opportunities and satisfaction; literacy related to MPA science and management; cultural identity; and, aesthetic satisfaction.	•		•	•	•	1. Documentation of community support and opposition to proposed MPAs in the study region. 2. Development of strategies for perceived negative social impacts. 3. Development of strategies for enhancing positive social impacts. 4. Comparative analysis of sociocultural influences of U.S. and Canadian governance structures.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
spatial scales?												
1. Data availability: no fishing data; accessibility of detailed industry data prevented by state and Federal government (confidentiality). 2. Spatial resolution of data too coarse to be useful. 3. Linking economic data to ecological data.					•					•	Industry, government, academics	National Ocean Economics Program; Morro Bay ecosystem management project; Moss Landing study; Alaska Fisheries Science Center, Northwest Fisheries Science Center; Alaska Department of Fish and Game; California Department of Fish and Game; National Marine Fisheries Service: Stock assessments; Observer Program; water quality data; intensity of use along shore; coastal watershed database; land use cover
1. Managing and coordinating research across an international boundary. 2. Obtaining compliance of communities who may be opposed to MPA development.					•			•			1. Canada: Parks Canada, British Columbia Parks, Department of Fisheries and Oceans, universities 2. U.S: National Oceanic and Atmospheric Administration and other agencies managing MPAs in the area (Washington State), universities	1. Management of industrial input to prevent/reduce pollution and sustain economic and other social goals. 2. Government and NGO efforts to create MPAs. 3. First Nations interests related to resource protection. 4. Council for Environmental Cooperation effort to establish a corridor of MPAs in the region.

Economics

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
What economic and social indicators, market and non-market, measure distribution of costs/benefits of MPAs at different							
Measures of intensity of coastal and marine uses.	Conduct random-digit dial telephone survey of West Coast households to determine the extent of participation in marine-related activities. Characterize participation in different ways (e.g. number of days, number of trips) to provide different measures of intensity. Characterize participation by respondent zipcode of residence and location of activity to determine extent to which use is local vs. non-local. May be useful in planning to estimate the size, scope, and location of potentially affected marine activities. Determine the number, location, and other characteristics of potentially affected user groups.		•	•			1. Provide big-picture estimates of aggregate participation in marine-related activities. 2. Identify which activities predominate in different locations and major areas of residence of participants in each activity. 3. Can serve as starting point for more detailed surveys of localized areas.
Eliciting user group input regarding spatial distribution of marine activities	Develop processes that facilitate ability of marine resource users to provide information regarding the spatial distribution of their activities at a scale at which they are comfortable. Help determine which marine uses are likely to be affected by specific MPA siting alternatives and the extent to which they will be affected.		•	•			Maps of the spatial distribution of marine activities potentially affected by MPAs.
Recreational Fisheries Information Network (RecFIN) add-on to determine spatial distribution of recreational fishing activity.	Anglers intercepted by RecFIN samplers are sometimes asked about the location of catch. Provide funding to RecFIN to augment sampler hours to ensure that location questions are asked on a more consistent basis. Help determine how specific MPA siting alternatives are likely to affect marine sport fishing.		•	•	•	•	Maps depicting spatial distribution of recreational fishing effort and catch by mode (charter, private boat) and target species.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
spatial scales? (Continued)												
Difficult to define location of activities in fine scale in a telephone survey.		•						•			Contractor familiar with telephone surveys of resource users.	1. Recreational Fisheries Information Network (RecFIN) 2. National Marine Fisheries Service headquarters has contractor who conducts random digit dial telephone surveys as part of the Marine Recreational Fishery Statistics Survey.
1. Identifying knowledgeable individuals to participate in the process. 2. Methods may be more amenable to providing information on relative distribution of activity rather than absolute numbers.											Sea Grant	Carrie Pomeroy and Flaxen Conway used similar methods for squid and groundfish fisheries.

Economics

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
What are the economic effects of current and proposed uses of marine resources?							
How will aquaculture affect the future value/use of MPAs for fisheries management goals?	Aquaculture has two potentially substantial impacts on MPAs: market impacts on commercial fisheries and the direct environmental impacts of aquaculture in neighboring waters. Both of these topics should be studied but here we focus attention on estimating likely economic effects on commercial fisheries of future growth in aquaculture. MPA management involves complex tradeoffs of different uses, including commercial fisheries. The economic value of commercial fisheries is likely to change in the future, as it has for Alaskan wild salmon.		•	•	•		1. Predictions of growth in aquaculture and its likely effects on managed commercial fisheries on the Pacific Coast. 2. Spatially explicit predictions of changes in market conditions and likely impacts on commercial fisheries in and around MPAs.
Forecast the economic effects and how MPAs would affect the trajectory of uses and visa versa.	Using the results of the inventory projects, describe the baseline economic state of a subject area then develop models to explore different MPA scenarios. The idea is to describe the change due to MPA development. This would involve the development of spatial overlays that identify areas of conflicting and non-conflicting uses from the aspect of economic value. Use probabilistic models to deal with uncertainties, much like modeling of oil potentials. Look at both direct and indirect interactions such as effects of accommodation between MPAs and aquaculture on the value of wild fisheries.		•	•		•	1. More certainty on the economic impact of MPAs. 2. Narrowing the scope of uses for which more detailed economic analysis is required. 3. Uncovering ways that MPAs can aid sustainable development.
Inventory proposed marine/coastal resources and uses for alternative energy and determine the impact on current uses.	This study will develop a Geographic Information Systems (GIS) database of proposed resources/uses for alternative energy. It will then determine how these proposed uses may impact current uses. The study will assess these potential conflicts. This assessment will aid in determining use conflicts in the establishment of MPAs.		•	•	•	•	1. Value of marine use assessment of potential conflicts. 2. GIS spatial inventory.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
There is a great deal of uncertainty in forecasting any changes in markets. In this case we are attempting to predict the relationship between several interrelated markets, so it will be challenging to develop accurate predictions for many fisheries.			•					•			1. National Marine Fisheries Service, Alaska Fisheries Science Center and Alaska Regional Office 2. North Pacific Fisheries Management Council 3. University of Alaska, Anchorage 4. University of Rhode Island	People at all of the above organizations are working to anticipate how the expansion of aquaculture around the world will affect U.S. commercial fisheries. Their research should be explicitly integrated into the MPA planning and management process.
1. To determine change in economic values due to MPA development. 2. To strive for quantitative approach but realize the necessity of qualitative outcomes. 3. Multidisciplinary needs. 4. Consulting with agencies responsible for economic use development.					•			•			Academics working on predictive economic modeling.	Depends on the outcomes of inventory projects
All potential uses have not been identified, but the energy law requires the Department of Energy to take a spatial resource inventory.			•						•		1. Minerals Management Service 2. Department of Energy 3. National Ocean Partnership Program	Links to the Department of Energy work as well as the Minerals Management Service future research. DOE will determine resources and the Minerals Management Service will assess use conflicts.

Economics

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
What are the economic effects of current and proposed uses of marine resources? (Continued)							
Inventory of current marine/coastal resources and uses.	The project goal is to establish baseline inventories of resources to determine current values and stocks at a point in time (possibly look at time series data over 10 years). Resources include stocks of living and non-living resources, market and non-market value. The project will coordinate the framework with potential uses so that the outcome can be used as a foundation for trajectory forecasts. The format would be mapped and compatible to assist MPA processes identify where current resources and values exist. Baseline economic values and stocks will provide MPA planning with a map of current resources. Map of resource values could inform MPA choices and management.		•	•	•		1. Baseline information on suite of marine resource stocks and values. 2. Foundation for comparing current values with trajectory of proposed new uses and the basis for understanding how the trajectory of values might change with new uses. 3. A better informed citizenry about the value of market and non-market marine resources.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
1. Information on market values is found in many places. 2. Research methods for valuing non-market resources are imprecise and need standard set of protocols and reporting framework. 3. Whether to do a multi-year study or a snapshot. 4. Linkages are weak in understanding the relationship between ecosystem function and services.			•						•		1. Federal: Department of the Interior, Minerals Management Service; National Marine Fisheries Service. 2. State resource agencies and parks departments. 3. Industry associations that use and produce marine resources. 4. Data compilers such as consulting firms, National Ocean Economics Program.	1. National Ocean Economics Program 2. Determining what should count as a marine resource. 3. Determining how to value MPAs. 4. Understanding ecosystem services, functions, and values.

Communities

This theme refers to the socioeconomic and cultural characteristics of the geopolitical and identity-based communities associated with MPAs. Topics include social networks and modes of communication within communities as they relate to decision making and the management of MPAs; the social and political capital of communities; and, the community's role in MPA management.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do MPAs affect local and regional power relations within and across communities and vice versa?							
Multiple case studies of existing power relations in communities undergoing the process of proposing or establishing an MPA.	Comparative case studies, using multidisciplinary tools to describe power relations in top-down, bottom up, and hybrid MPA proposal processes, including examining past efforts within those communities. This process would allow for a better understanding of how existing power relations prior to the establishment of an MPA can facilitate or hinder effective MPA planning and the success of the MPA. The study could result in a baseline that could be useful in evaluating and projecting the effects of MPAs on the power relations of communities.		•	•		•	1. A baseline of community power relations in communities planning MPAs that would inform both managers and stakeholders. 2. An improved understanding of the effect of these power relations on the structure and function of MPAs. 3. The potential to evaluate the (unintended) effects of MPAs on community power relations.
Power transfer from traditional legal systems in marine protection and its effect on incentives for sustainability goals of MPAs in the Pacific Northwest.	Comparative case studies of traditional law relating to resource management of marine species, including: reef netting in the San Juan and Gulf Islands archipelago, whale hunting among Makah and other Pacific Coast tribes, and salmon dip netting at Celilo Falls. The project will provide useful insights for creating an effective incentive structure for the future management of MPAs in traditional use areas. It will create a role for tribal groups in MPA planning and promote compliance by respecting tribal laws and values.		•	•	•		1. Better understanding of traditional resource law based on actual situations. 2. Increased tribal participation in MPA planning and implementation. 3. MPA regimes that incorporate historical and current values of both tribal and non-tribal people affected.

Challenges	Estimated Duration					Estimated Cost ($K)					Potential Partners	Linkages
	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500		
1. A huge number of variables and methods for measuring power relations. 2. Variables that are challenging to quantify. 3. Large differences in definitions of MPAs. 4. Attempting to define hierarchy and forms of power in a social context. 5. Nebulous funding. 6. Potential survey bias, e.g. differing interpretations of "power". 7. Potential resistance from staff and resource managers and community members.					•				•		1. Northwest Straits Commission (and local Marine Resource Committees) 2. Local communities and community organizations 3. Academic community, graduate students 4. Federal (National Oceanic and Atmospheric Administration) 5. Traditional comparative community studies (Pacific States Marine Fisheries Commission)	Natural and social science evaluation of MPA efficacy. As a component in the evaluation of existing MPAs. Social impact assessments (National Environmental Protection Agency).
1. Demonstration effect of new legal regime and loss of practical working knowledge of traditional resource law. 2. Cultural sensitivity. 3. Protection of "traditional ecological knowledge". 4. Perception of bias by other resource users. 5. Inter-tribal conflicts.			•				•				1. Tribal colleges and the academic community (legal scholars) 2. National Park Service 3. Tribal Fisheries Commissions	Fisheries economics (tenure systems and property rights studies); sustainability studies; ethnographic studies; historical/paleo-ecology; non-tribal conflicting legal systems; potential correlations between tribal systems and non-tribal customary marine tenure systems (e.g. Maine lobster).

Communities

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do MPAs affect local and regional power relations within and across communities and vice versa? (Continued)							
Case studies of existing MPAs to determine the effects of MPAs on power relationships.	This project examines case studies of existing MPAs to reveal the nature of power relations in Pacific coastal communities. It is built on the assumption that there is a diversity of power relations within Pacific coast communities, and that the affect of MPA establishment on power relations within coastal communities will vary with the nature of the subject community. Site selection will be based on the use of World Conservation Union (IUCN) categories to group similar MPAs providing insight to the specific effects of the range of MPA management possibilities . The project will focus on existing MPAs within jurisdictions of similar political structures, i.e. British common law, and will employ an ecoregional approach overlaid with a social framework. MPAs will be rated according to their "success" in meeting the management objectives (to better understand the effect on power relations). The project will also feature the characterization of communities involved. This will necessitate defining the communities at various levels (local, regional, and global) and power relationships pertaining to each; developing standard methods for describing power relations; and, profiling communities in a consistent way (i.e. demographics, economic structures, marine stakeholders). The study will compare communities before and after the establishment of an MPA in terms of level of participation, power and decision making structures, and changes in power relations over a range of time scales.		•	•	•	•	1. An MPA changes power relations within and among communities. 2. Different types of MPAs change the power relations in different ways. 3. External influence may be a factor of equal or greater significance. 4. A relationship between MPAs deemed "successful" and a community that has stable (but not static) power relations.

Challenges	Estimated Duration					Estimated Cost ($K)					Potential Partners	Linkages
	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500		
1. External forces (that have nothing to do with the MPA) that may interfere with the power relations within in a community that are difficult to quantify due to lack of data. 2. Difficult to acquire the necessary anecdotal or historic information on power relations when the MPA was established.		•				•					Government agencies that collect/archive demographic and economic data	

Communities

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How do MPAs affect local and regional power relations within and across communities and vice versa? (Continued)							
Power dynamics within community-based MPAs: A longitudinal study.	This study will describe the evolution of power relation before and after community-based MPA implementation. It will employ a multi-case, longitudinal design. Possible sites are the San Juan Islands and the Edmunds Underwater Park. Research will inform future MPAs as well as evaluate existing MPA systems.		•	•	•	•	1. The development of an operational definition of power relevant to MPA implementation (considering measurability, construct validity, reliability). 2. Improved understanding of impacts of community-based MPA for power relationships. 3. Develop an ability to anticipate likely outcomes for community-based MPA implementation.

Challenges	Estimated Duration					Estimated Cost ($K)					Potential Partners	Linkages
	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500		
1. Funding 2. Lack of relevant cases that are at various implementation states. 3. Difficulty of studying cases over time. 4. Establishing cause and effect. 5. Isolating the variables of interest from other confounding variables (e.g., context and other processes). 6. Operationalizing variables of interest and determining appropriate methods. 7. Tracking individuals and institutions over time.				•					•		National Oceanic and Atmospheric Administration Universities States, NGOs, community groups	Linkage to ongoing debates and research surrounding the effectiveness of community-based conservation globally. Is community-based conservation one of the last options?

Cultural Heritage and Resources

This theme encompasses the socioeconomic and cultural dimensions of maritime heritage associated with MPAs. Maritime heritage includes not only the material culture related to historical and traditional uses of marine resources (lighthouses, wrecks), but also the meanings, values, and knowledge systems associated with the current practices of living cultures that have a maritime orientation.

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How should we integrate customary & local knowledge as well as historical, archaeological, linguistic and ethnographic data							
Mapping the coupled social ecological space (cSES) to identify critical domains of proposed or existing marine protected areas.	This project will utilize existing data to synthesize and compile information to construct a GIS supported series of interactive maps which are available to diverse users through a Graphical User Inferface (GUI). The maps will indicate areas where multiple values co-locate in space and operate synergistically, antagonistically, or neutrally. Such information is critical for managers to determine a) where resources should be focused, b) where data gaps exist, c) where synergies can be optimized and, d) where antagonisms can be mitigated. The cSES will also enable the monitoring of changes in biophysical variables such as NPP or denudation, and the resulting feedbacks to use patterns, attitudes, values, economic viability, etc. These cSES maps will operate on a flexible framework such that data may be added as appropriate. This will enable a time series to be developed that spans historic and contemporary periods. Ultimately, elucidating dynamics within these time-series will enable managers to anticipate emergent patterns such that management can be proactive rather than reactive. Moreover, it allows existing data to be sorted and integrated such that their synthesis produces a legacy that can be further built upon in a coordinated framework.		•	•	•	•	1. Community framework database, organized into disciplinary domains with synthetic spatial integration capability (includes qualitative and quantitative data). 2. ArcGIS data platform with Geographic Resources Analysis Support System (GRASS) compatible script. 3. Graphical User Inferface allowing non-specialists to access and utilize the information.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
into developing and managing successful MPAs?												
Requires a paradigm shift among ourselves in getting over the "integration barrier" (from a disciplinary, cultural point of view). Powerful tools and approaches are available to sort qualitative data if needed (e.g., QSR nVIVO) and link these to ArcGIS; quantitative data are available through diverse sources ranging from survey instruments to monitoring stations to satellite imagery.					•				•		1. Resilience and Adaptive Management Group, University of Alaska Anchorage 2. University of Washington, School of Marine Policy 3. National Aeronautics and Space Administration	This IS the first step in the linkage. You need a map before you know how to get to where you're going.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
Regional scale integration of knowledge of long term human relationships with Salish Sea ecosystems.	Considerable archaeological research has already been done in the Salish Sea. Few excavations have addressed questions of most interest to MPA managers, however, such as the question of the nature and sustainability of Coast Salish marine harvesting practices. As a result, crucial data have been lost in backfill, or "buried" in storage. Most findings are restricted to gray literature, moreover. Increased protection of cultural resources has meanwhile reduced the scale and number of excavations considerably. To ensure that MPA managers will have reliable data on the human ecological history of protected sites, this project will: (A) improve the coordination of research teams and widen access to existing field reports; (B) promote a basic minimum of standardized sampling methods to be applied to future excavation or testing of archaeological sites in the region; (C) locate and make more accessible collections from past excavations.		•	•	•		1. More data useful to MPAs from future destructive sampling of archaeological records of past human-ecological interactions. 2. Greater protection and use of data that can be mined from previous destructive sampling of these non-renewable sites.
Documenting stewardship and tenure systems of Pacific Northwest tribes.	Data and knowledge will be gathered and summarized on the stewardship and tenure systems from early ethnographic work as well as from customary knowledge holders. In these regions many tribes, such as with the Tlingit and Haida, maintained clan ownership of lands, resources and marine waters. Clan leaders managed the take and use of resources in order to ensure conservation of the resources. The data and information gathered can help MPA managers in understanding the historic and current human dimensions of use patterns and stewardship obligations of first nations/tribes to their traditional territories. This may also help managers in reviewing management options for effective MPA stewardship.		•	•	•		1. A review and synopsis of tribal stewardship and tenure systems for the Pacific Northwest. 2. Possible incorporation of stewardship ideas into MPA management.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
1. Institutional and professional competition. 2. Most archaeology is done on contract to developers and local planning departments rather than as hypothesis-driven research. 3. Existing collections are widely dispersed and poorly archived.				•				•			1. University of Washington-Washington State Museum 2. Simon Fraser University Department of Archaeology 3. Tribal research programs that include archaeology or paleoecology such as Samish, Swinomish, and Lummi 4. Federal archaeologists (National Parks, Bureau of Land Management)	Paleoecology using natural sediments such as peats and wetlands near archaeological sites, e.g. through US Geological Survey, Canadian Geological Survey.
Mining data from ethnographic works will be time consuming (although some good studies such as Goldschmidt and Haus do exist). Some data such as with coast Salish is incorrect and will need to be re-visited.			•					•			1. Sealaska Heritage Foundation 2. Northwest Indian Fisheries Commission 3. Aboriginal Fisheries Strategy (British Columbia) 4. Columbia River Inter-Tribal Fisheries Commission	As we broaden our work to ecosystem management we need to recognize and incorporate successful traditional management and stewardship systems.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How should we integrate customary & local knowledge as well as historical, archaeological, linguistic and ethnographic data							
Marine protected area management and sustainable tribal and traditional societies: Case studies from the West Coast.	This project fosters MPA success by providing customary and local knowledge, historical, archaeological, linguistic, and ethnographic analysis (collectively termed "historical and ethnographic" analysis) of social and cultural patterns. Specifically, the project focuses on tribal and traditional societies on the West Coast of the United States including, for example, Haida, Makah, Chumash, San Dieguito, and Seri cultures. The project establishes patterns of natural resource use, dependency, and social change. Findings will contribute to the development of MPA goals that sustain tribal and traditional values and social structures, and the attainment of established MPA goals. The project contributes to the appreciation of historical and contemporary conditions of tribes and traditional societies.		•		•		1. Assessment of social structure characteristics and viabilities. 2. Recommendations to ensure survival of tribes and traditional societies.
MPA social science handbook	MPA managers require data about traditional marine cultures and practices including Native Americans; ethnic groups; whalers; historic and present-day fishermen; recreational users; traditional shipping shipbuilding; and, economic activities reflecting historical human interaction with the ocean. This project will identify traditional user and ocean dependent groups and solicit their ideas, values, etc. to prioritize appropriate aspects of their maritime heritage; promote historical, anthropological, and ethnographic research on these people to support the interpretation of past practices. The major topics include identifying the significance of social science and traditional knowledge to marine conservation; developing methods and standards of research; identifying exemplary research projects and findings; and developing a checklist for planning, management, and evaluation. The handbook would deal with the social science data and methods at all phases of MPA life history and would probably require the addition of a training phase.		•	•	•	•	1. Standardized approach for coherent management of MPAs. 2. Standardized approach for social science data. 3. Survey of existing projects, literature, and resources available to MPA managers.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
into developing and managing successful MPAs? (Continued)												
				•					•		1. Universities 2. Natural Resource Agencies 3. Tribes and traditional societies	
1. Gathering diverse information into one location. 2. Developing normative standards for social science and customary and local knowledge. 3. Linking future behavior in MPAs to the standards developed.			•				•				1. Parks Canada 2. National Park Service, Cooperative Ecosystems Studies Units 3. National Trust for Historic Preservation	Will create bridges between the use of social science data and ecological research and use of ecological data in sociocultural research.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
Develop a framework for measuring, analyzing, and evaluating social, cultural, economic, and ecological values and							
A case study review of techniques used in MPA development for incorporating social, cultural, economic and ecological values and trade-offs.	This project will compile and summarize MPA marine management case studies in the Pacific region and review: baseline values, how they were measured and incorporated; tools used for decision making; and, the outcomes of the MPA (what did it affect?) A comparison of case studies will help us to understand whether all relevant social and cultural values were effectively incorporated in the decision making process. This project is multi-disciplinary. First, information will be collected on the MPA management programs including how social, cultural, economic and ecological values were collected, evaluated and incorporated. Second, we will collect information from stakeholder groups to determine if values were considered and appropriately incorporated into the decision making process and outcomes.		•	•	•	•	1. A list of successful techniques for reviewing social, cultural, economic and ecological values in the decision making process. 2. Lessons learned from attempts to identify and incorporate and incorporating social, cultural, economic and ecological values. 3. Recommendations for improving tools and techniques for properly evaluating and incorporating social, cultural, economic and ecological values in MPA management.
Survey of available and applied tools for analyzing and evaluating tradeoffs among social, cultural, economic, and ecological values in the planning, management, and evaluation of MPAs.	This project will (1) inventory available tools for measuring, analyzing and evaluating tradeoffs among various values (social, cultural, economic and ecological) in the planning and management of MPAs (2) conduct linked surveys of managers, policy-makers, community members, and others who use value-based information for MPA planning, management, and evaluation to: (a) assess which tools are currently applied and (b) which tools are most useful for setting and achieving MPA goals.		•	•	•	•	1. Inventory and assessment of tools available for capturing and evaluating trade-offs among diverse values. 2. Comparison of the utility of tools.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
tradeoffs for different MPAs.												
1. Hard to tease out how decisions were made in existing MPAs, and determining which values were addressed. 2. Difficult to find people who participated in initial planning public process. 3. Difficult to find decision makers.			•						•		1. National Oceanic and Atmospheric Administration: Saltonstall-Kennedy, MPA Center, Sea Grant 2. Parks Canada 3. National Ocean Partnership Program 4. National Science Foundation	Ties in with "Survey of Available and Applied Tools for Analyzing and Evaluating Trade-Offs Among Social, Cultural, Economic and Ecological Values in the Planning, Management and Evaluation of MPA's."
					•				•		1. National Oceanic and Atmospheric Administration - National Centers for Coastal Ocean Science, National MPA Center, Coastal Services Center 2. University of Alaska - Anchorage 3. Social Science Research Council	1. Resilience and Adaptive Management Group developing tools for qualitative and quantitative data integration. 2. Social Science Research Council on tools and methods to capture sociocultural values. 3. National Ocean Economics Program.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to define and establish visitor use capacity, including carrying capacity for cultural resources?							
Develop empirical database that allows selection of quantifiable indicators and standards of visitor experience quality and resource (cultural and natural) integrity.	This project involves: (1) use of social surveys and other research techniques to identify measurable components of visitor experience quality applicable to zones within individual MPA defined on the basis of recreational opportunities and natural or cultural resources therein; (2) use of appropriate research techniques and exercises to develop symmetrical indicators and standards relevant to natural and cultural resources; and (3) the development of economically feasible protocols for quantitative monitoring of indicators of visitor experience quality and resource integrity in relation to the established standards. In many cases data that allow the creation of models that map the flow of visitors through the MPA in time and space will be invaluable. Experience strongly suggests for visitor use capacity determination to be institutionalized into on-going adaptive management that monitoring protocols must be straightforward and feasible within realistic budget limitations. Visitor use capacity determinations involve interactions between social and biological scientists, managers and stakeholders in a transactive process. This process culminates in a description of the primary basis by which many visitor use decisions will be made providing the basis for continuity of management even though regimes may change.		•	•	•		1. Quantifiable indicators measuring visitor experience quality and resource integrity. 2. Standards of visitor experience and resource integrity that together define visitor use capacity. 3. Monitoring protocols for above indicators that allow judgments as to whether management is within use capacity standard.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
Data may be logistically difficult to gather and expensive. Linkages between amount and intensity of visitor use and unacceptable resource impact may be difficult to establish. Entire process requires reasonably sophisticated capacity for doing appropriate social scientific research and managers committed to the process. Some protected areas may lack this organizational capacity.					•						Universities, NGOs, and involved stakeholders.	Many of the data involved may be important to everyday management of visitor use and hence relevant to ongoing multiple dimensions of management. The establishment of visitor capacity inherently involves both natural and social scientists working together in teams. Hence, communication across disciplines is integral to success.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to define and establish visitor use capacity, including carrying capacity for cultural resources? (Continued)							
Regional zoning: A new approach to analyze regional carrying capacities in an effort to rationalize zoning of disjunct MPAs.	Zoning in protected areas is an important planning strategy used to separate conflicting uses and allocate appropriate uses according to the characteristics of the natural setting and protected sensitive values. While in the terrestrial context, zoning protected areas has been effective in managing use, the marine environment is challenged by the fluid nature of the setting and the difficulty of visually separating and defining zones. Further, many MPAs in the Pacific region are planned and managed as individual units, without taking into account linkages and broad regional perspectives. This project would examine existing and proposed MPAs under development in Puget Sound/Strait of Georgia, an international marine ecosystem of significant importance in terms of marine conservation and human use. The project would consist of the following research activities: inventory of exiting uses and intensity; inventory of natural features; assessment of impacts; development of appropriate carrying capacities by use; rationalize various types of carrying capacities onto a spatial model to generate different zoning scenarios.	•		•	•	•	1. Zoning system for a large geographic (international) area, that links distinct MPAs throughout the study area. 2. A new approach to MPA zoning in a larger spatial area context (within and between MPAs).
Replicating the Channel Islands datum installation monitoring program and shipwreck trail project.	Implement a repeatable, non-intrusive site recording process to establish a baseline of data for evaluation of human and environmental impacts. Install semi-permanent embedded datum(s) into the sea floor and/or rocks contiguous to selected shipwreck sites in the U.S. Pacific coast region. Establish a shipwreck trail system to enhance visitor experience and mitigate damage to cultural resources by providing the sport and commercial diving communities with interpretive information on submerged cultural resources; including underwater slates, printed guides, and videos. The shipwreck trail project is included in the "draft" Channel Islands National Marine Sanctuary's five-year management plan.		•	•	•	•	1. Datum serves as a reference point for accurate measurements of artifact positions and will be utilized for permanent camera positions for recording site impacts by humans. 2. Data collected will be used to populate a database to measure both human and environmental impacts to site to assist resource managers in making informed decisions. 3. Shipwreck trail will enhance visitor experience and provide relevant regulations, dive protocols and descriptions of significant artifacts. With this knowledge, divers will help mitigate damage to sites and become stewards in assisting management in protecting submerged cultural resources.

Challenges	1 Quarter	1 year	2 years	5years	Ongoing	<50	50-100	100-250	250-500	>500	Potential Partners	Linkages
	Estimated Duration					Estimated Cost ($K)						
1. Collecting complete data over large regional spaces. 2. Cooperation between agencies.				•				•			1. Canada - provincial and federal park agencies 2. U.S. - state, county, and national park agencies 3. Academic institutions (e.g. University of Washington, University of Victoria)	Existing protected area planning (e.g Orca Pass, Salish Sea).
1. Installation of datums requires a Section 106 approval process of the National Historic Preservation Act, Sec. 800:11. If a federal permit is issued, it must be approved by state agencies. 2. Some submerged cultural resource sites may be subject to varying statutes that will not allow annual monitoring. 3. Funding must be obligated for long-term monitoring in order to ensure success of the program.					•			•			1. National Marine Sanctuary Program 2. National Park Service (National Park Service) 3. State park systems	The Datum Installation Monitoring Program was established in 2004 by a non-profit group at the Channel Islands National Marine Sanctuary and Channel Islands National Park in partnership with the California State Lands Commission. Coastal Maritime Archaeology Resources (CMAR) is responsible for implementing the datum installation and two shipwreck sites in the Channel Islands and plans to install datums at two additional sites in 2005. The Channel Islands slates will be produced in 2005 by the Sanctuary in collaboration with CMAR and National Park Service.

Cultural Heritage and Resources

Project Title	Description	Geographic Coverage: One Site	Geographic Coverage: Many Sites	Applicability: Planning	Applicability: Management	Applicability: Evaluation	Outputs/Outcomes
How to define and establish visitor use capacity, including carrying capacity for cultural resources? (Continued)							
Quantitative visitor management: Applications of logistic models to marine protected areas in Puget Sound and the Southern Gulf of Georgia.	This project formalizes theoretical understandings of carrying capacity issues in the management of MPAs. Logistic growth models that are standard in fishery and other realms of natural resource management are extended to the treatment of tourism dynamics including crowding, pollution, and environmental degradation in MPAs in Puget Sound and the southern Gulf of Georgia. Results of this study will help MPA analysts in Puget Sound, the southern Gulf of Georgia and elsewhere to design and undertake carrying capacity research.	•			•		1. Identification of useful definitions of carrying capacity for multiple-use applications. 2. Determination of standards for making carrying capacity statements in management documents.

Challenges	Estimated Duration: 1 Quarter	1 year	2 years	5years	Ongoing	Estimated Cost ($K): <50	50-100	100-250	250-500	>500	Potential Partners	Linkages
			•						•		1. Universities in Washington and British Columbia. 2. Natural resource agencies in Washington and British Columbia.	

Appendix B. Additional Proposed Research Questions

Following is a list of all the questions that were developed in the initial brainstorming session of the workshop. These questions were prioritized by the workshop participants in terms of their perceived importance for meeting social science information needs for MPAs in the region. The number in parenthesis after each question represents the number of votes received during the initial prioritization process. Please note the final twelve questions that participants considered in developing the specific projects found in Appendix A.

GOVERNANCE, INSTITUTIONS, AND PROCESSES

- **How do we develop the infrastructure or policy-making structure to design effective MPAs across boundaries (geographic and political) and across various government and user groups? (2 votes)**
- **How do we design MPAs to ensure compliance? (3 votes)**
- **How do we develop governance structures that involve indigenous people and include treaty and indigenous rights? (4 votes)**
- How do we identify spatial and temporal mismatches between social governing systems and natural systems? (1 vote)
- How do we incorporate informal governance institutions in the process? (1 vote)
- How do we educate managers in value-based decision making for ecosystem-based management and use this information to develop governance structures? (1 vote)
- What is the role of MPAs in the larger context of marine spatial planning? (1 vote)
- What are the meaningful goals of the MPA? (1 vote)
- What would governance structures look like based on ecosystem-based management? (0 votes)
- How do we conduct decentralized governance in a centralized governance context? (0 votes)
- How do we better understand protection and access from diverse interest groups? (0 votes)

USE PATTERNS

- **How to integrate quantitative and qualitative analysis of use patterns with biophysical research that characterizes ecosystem stress to inform management? (3 votes)**
- How can we define and monitor issues surrounding visitor use and carrying capacity? (collapsed with Cultural Heritage and Resource question #3, 2 votes)
- How do we develop standard protocols for measuring visitor use patterns across diverse MPA areas? (1 vote)
- How can temporary closures and new gear technology mitigate economic impacts? (1 vote)
- What are the recreational, tourism, and industrial use patterns? (1 vote)
- How much seascape ecology is cultural artifact? How does that inform management? (1 vote)
- How can we determine changing landscapes over time and changing uses of landscapes, including new uses, and how can we anticipate changing use patterns in the absence of MPAs? (1 vote)
- Where do we draw the line between preservation of cultural lifestyles based on resource extraction and the practice of the resource extraction itself? (0 votes)
- What is the influence of MPA management goals on coastal land use policies and vice versa; and what is the influence of MPA goals on decision-making to manage point and non-point source pollution? (0 votes)
- How do we develop strategies to deter unacceptable and resource-damaging human/visitor behavior? (0 votes)
- How do we monitor consumptive and non-consumptive uses to ensure ecosystem sustainability? (0 votes)
- How do we protect use patterns with MPAs? (0 votes)
- What are use patterns on a regional scale? (0 votes)
- What are the linkages between marine use patterns and coastal activities? (0 votes)

- How do we make sure dependent and local communities are considered (i.e. equity, fairness and distributional impacts)? (0 votes)
- What is the interaction between natural landscape and human uses (interdependencies, feedbacks, linkages)? (0 votes)
- How do we monitor outcomes of management practices? (0 votes)
- How can we address the over-running of management and local level processes by large processes? (0 votes)

ATTITUDES, PERCEPTIONS, AND BELIEFS

- **How can we use attitudes, perceptions, and beliefs research to evaluate the management of MPAs? (7 votes)**
- **How can we foster collaboration between natural and social scientists, scientists and stakeholders, and scientists and policymakers? (5 votes)**
- What is the role of values in attitudes, perceptions, and beliefs and how are they manifested in individual and collective behaviors? (2 votes)
- Do people have different attitudes, perceptions, and beliefs that affect compliance? (0 votes)
- What are the attitudes of and towards the scientific community in the MPA process and government agency personnel? (0 votes)
- How do we communicate effectively with communities and interest groups about MPAs? How do we both teach and listen effectively? (0 votes)
- How do we understand the MPA staff's attitudes, perceptions, and beliefs about cooperative management? (0 votes)
- How do we use attitudes, perceptions, and beliefs research to manage and influence human visitor and human resident use in MPAs? (0 votes)
- How do regulations affect visitor experience? (0 votes)

ECONOMICS

- **What economic and social indicators, market and non-market, measure distribution of costs/benefits of MPAs at different spatial scales? (7 votes)**
- **What are the economic effects of current and proposed uses of marine resources? (3 votes)**
- What are the economic impacts of management decisions? (1 vote)
- How can we finance MPAs, i.e. through user fees or government revenues? (0 votes)
- How can we generate commercial fisheries cost data? (0 votes)
- What is the interaction of MPAs and rationalization (e.g. quota-based management)? (0 votes)
- What are the economic impacts of non-consumptive use? (0 votes)
- How do we establish better integration of market and non-market economic models with ecological models? (0 votes)
- What are the distributed effects of economic impacts? (0 votes)
- What are the questions or information that managers need to ask in order to carry out their mission? And what sequence do you need to answer these questions? (0 votes)
- How do we consider short and long term costs and benefits? (0 votes)
- What are the barriers to diversification of resource use? (0 votes)
- How do we create incentives and compensatory mechanisms to encourage stewardship through MPAs? (0 votes)
- What is the role of MPAs in sustaining local economies? (0 votes)
- How can we track economic uses over time for forecasting trends and cost/benefits? (0 votes)
- How do we better develop and apply methods for valuing near and non-market values in terms of practicability, feasibility, and cost/benefits? (0 votes)
- What are the economic impacts of MPAs? (0 votes)

- How do we integrate minerals management into MPA planning, management, and evaluation? (0 votes)
- What are the economic impacts of climate change on MPAs? (0 votes)
- How can we develop methods to generalize valuation, research, and data to multiple spatial scales? (0 votes)

COMMUNITIES

- **How do MPAs affect local and regional power relations within and across communities and vice versa? (3 votes)**
- What are the inter- and intra-community dynamics? (2 votes)
- How do communities represent or organize themselves? (1 vote)
- What are the positive and negative impacts of MPAs, and how do communities manage those impacts? (1 vote)
- How do MPAs and economic institutions affect the distribution of wealth within communities? (1 vote)
- How do communities participate in managing protected areas (co-management)? (0 votes)
- What are sources of community resilience and vulnerability? (0 votes)
- How do MPA management and policy decisions affect the evolution and maintenance of communities? (0 votes)
- How does MPA management address matters of social and environmental justice? (0 votes)
- What is the presence and importance of subsistence patterns in communities? (0 votes)
- What is the relationship between human communities and ecological communities? (0 votes)
- How do you evaluate the many forms of local and traditional knowledge in order to synthesize and integrate them with science? (0 votes)
- How do we use local and traditional knowledge to ask questions that are important to local communities? (0 votes)
- How do you define "community"? What are they? (0 votes)
- How do communities change over time (trends, indicators of change, and factors that precipitate change)? (0 votes)
- What are the population growth patterns on the west coast? (0 votes)
- How does community turn natural landscape into cultural landscape? (0 votes)
- How do we better understand conflict between indigenous people and communities? (0 votes)
- What are the community perceptions of protected areas and how can we link perceptions to different groups? (0 votes)
- What are the common threads among communities? (0 votes)

CULTURAL HERITAGE AND RESOURCES

- **Develop a framework for measuring, analyzing, and evaluating social, cultural, economic, and ecological values and tradeoffs for different MPAs. (7 votes)**
- **How should we integrate customary & local knowledge as well as historical, archaeological, linguistic and ethnographic data into developing and managing successful MPAs? (4 votes)**
- **How to define and establish visitor use capacity, including carrying capacity for cultural resources? (3 votes)**
- What is the link between cultural heritage and local and regional communities? (1 vote)
- What are the conflicts among cultural and biological use or management and management strategies for resolving them? (0 votes)
- What are the definitions for cultural heritage and resources? (0 votes)
- How do we inventory historic shipwrecks and identify those that pose environmental threats? (0 votes)
- How can we measure social and economic values for cultural resources and utilization? (0 votes)
- How can we measure the impacts of management on cultural identification? (0 votes)
- How can we better understand historical and cultural patterns, perceptions and governance? (0 votes)

- What are the measures of cultural values (i.e. appropriate indicators) relative to marine resource use and MPAs? (0 votes)
- What are the existing stewardship practices and their impact on ecological resources? (0 votes)
- How can we design multiple use and multiple goal MPAs (i.e. biological and cultural resources)? (0 votes)

Appendix C. Existing Social Science Research Efforts

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Canada Department of Fisheries and Oceans	A Handbook on Issues Surrounding Linking Science and Local Knowledge in Coastal Areas	One objective of this handbook is to increase awareness, especially among government, academia, and other organizations, of the value of community knowledge. A second objective of this handbook is to provide initial guidelines for community groups who want to disseminate their data, but are unsure what issues have to be taken into consideration.	Attitudes, Perceptions and Beliefs	Completed	Sam Macharia Ng'ang'a, Meredith Hutchison, Kelly Vodden, Jamie Pepper, Mike Berry, Susan Nichols, Michael Sutherland, Richardo White and Boipuso Nkwae	Canadian Case Studies. 2005. http://www.sfu.ca/coastalstudies/linking/pdf/Project%201%20-%20Handbook_Final.pdf
The Living Oceans Society/Blue Planet Research and Education	Quantifying Local Knowledge for Use in Marine Planning: A Pilot Project in British Columbia's South Central Coast	In this thesis, methodologies and statistical procedures are developed to quantify local fisheries knowledge. Unique indices for precision and valuation are presented. Quantified local knowledge is then examined for spatial correlations with two conventional quantitative datasets: fishery logbook catch data, and a species-habitat model. Local knowledge and logbook data exhibited the highest spatial correlations, followed by local knowledge and the habitat model. Of the three types of data examined, for planning purposes the quantified local knowledge would appear to be the best choice / compromise.	Attitudes, Perceptions and Beliefs, Communities	Completed	Jeffrey A. Ardon	Royal Roads University. 2005. http://www.livingoceans.org/documents/Ardron_MEM-thesis-final1.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of Santa Cruz	Social Considerations For Marine Resource Management: Evidence From Big Creek Ecological Reserve	Growing interest in no-take marine protected areas (MPAs) as a complement to traditional fishery management has led to increased attention to biophysical considerations for MPA design, implementation, management, and evaluation. Considerably less attention has been directed, however, toward social, cultural, and economic considerations for MPAs. Information on and understanding of the relationship between MPAs and local fisheries in social, cultural, and economic, as well as biophysical, terms is especially important. At the same time, there is growing interest in collaboration between fishers and scientists to provide more complete and accurate information on fisheries and marine ecosystems.	Attitudes, Perceptions and Beliefs, Communities, Economics, Governance, Use Patterns	Completed	Caroline Pomeroy cpomeroy@cats.ucsc.edu)	CalCOFl Rep., Vol. 40. 1999. http://www.calcofi.org/newhome/publications/CalCOFI_Reports/v40/pdfs/Vol_40_Pomeroy.pdf
University of Alaska Anchorage	Effects of Knowledge, Personal Attribution and Perception of Ecosystem Health on Depreciative Behaviors in the Intertidal Zone of Pacific Rim National Park and Reserve	The study focused on the measured behavior, attitudes and perceptions to ecosystem resilience, of visitors to Wick Headland in Pacific Rim National Park, British Columbia. Attitudes, knowledge, perceptions, and personal attribution were measured using questionnaire survey and structured interviews undertaken in situ. Depreciative behaviors of visitors were discreetly observed and correlated to the questionnaire survey and interview responses.	Attitudes, Perceptions and Beliefs	Completed	Lil Alessa (afla@uaa.alaska.edu); Sharon Bennett, Andrew Kliskey	Journal of Environmental Management 68:207–218. 2003. http://ram.uaa.alaska.edu/Publications/F%20Publications/0et%20al%20JEM.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Department of Recreation and Tourism, Malaspina University College	Public Perceptions of Environmental Conditions in the Southern Straights of Georgia National Marine Conservation Area	Current B.C. government policy to double the area under shellfish aquaculture tenures by 2008 may well conflict with ambitious plans for marine protected areas on the west coast, including government sponsored MPAs in the Gulf Islands and Queen Charlotte Islands, NGO campaigns for "Orca Pass," and the "Baja to Bering" initiatives. This potential conflict is made more complex by government plans to double the provincial tourism industry, much of which is themed "supernatural BC," often promoted through images of pristine coastal environments. The purpose of this study was to develop approaches for engaging people in the development of management prescriptions for a marine conservation area. The study examines compatibility of differing recreation and non-recreation uses in an MPA, with special attention given to shellfish aquaculture.	Attitudes, Perceptions and Beliefs	Completed	Rick Rollins (rollins@mala.bc.gc); Dave McCallum avidmcc@mail.geog.uvic.ca)	2002
University of California Santa Barbara	An Ecosystem Management Approach for the Santa Barbara Channel Islands	With the Channel Islands as a backdrop, this paper analyzes the role of science and values in the development of an ecosystem-based approachto marine systems. We discuss the application of the values of ecosystem management to the Channel Islands Ecosystem. We identify a number of challenges to the development of marine ecosystem management. We conclude with a discussion of general goals and objectives that support marine ecosystem management.	Attitudes, Perceptions and Beliefs; Governance	Completed	Michael V. McGinnis and Sean P. Hastings	http://www.sanctuaries.nos.noaa.gov/libraryCI/hastings.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Ecotrust	Participatory Socioeconomic Analysis: Drawing on Fishermen's Knowledge for Marine Protected Area Planning in California	The purpose of this pilot study was to test the utility of geospatial analysis tools for eliciting and integrating fishermen's knowledge into marine protected area (MPA) planning processes in California, United States. A participatory design yielded 30 local knowledge interviews that were coded for socioeconomic and biodiversity information. The resulting information is useful in understanding past conflicts around MPA siting proposals and for identifying likely sources of agreement and disagreement. Products include a protocol for rapid socioeconomic assessment; a database of fishermen's knowledge and information; and a geographic information system for further use in California's MPA planning process.	Attitudes, Perceptions and Beliefs; Use Patterns	Completed	Astrid Scholz (ajscholz@ecotrust.org); Kate Bonzon, Rod Fujita, Natasha Benjamin, Nicole Woodling	Marine Policy 28:335-49. 2004.
Audubon Society and Environmental Defense	Marine Reserves in Oregon: Analysis of Industry Perceptions and Strategies for Improved Communications	One belief is common among fishers, resource managers, marine scientists, and ocean advocates: we need to ensure the long-term sustainability of our fisheries resources. The approach to best achieve this goal is often, however, a source of contention. Marine reserves have been offered up by environmental and regulatory entities as a viable management tool. However, uncertainty regarding marine reserve benefits and fear of economic losses prompts some fishers and policy makers to doubt their value. Forming innovative partnerships to find ways to improve communication between fishers, scientists and managers is the focus of this report.	Attitudes, Perceptions and Beliefs	Completed	Laura Anderson (laura.anderson@oregonvos.net)	Audobon Society. 2005.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
UBC Fisheries Centre	Marine Protected Areas with an Emphasis on Local Communities and Indigenous Peoples: Review	This report presents a literature review of marine protected areas throughout the world, with an emphasis on 16 case studies that involve community participation and indigenous peoples. Details of three MPAs, namely the Great Barrier Reef Marine Park in Australia, San Salvador Marine Reserve in the Philippines, and the Fagatele Bay Marine Sanctuary in American Samoa, are included to illustrate the importance of community involvement in establishing MPAs. A table summarizes each MPA reviewed in terms of its establishment, purpose, level of protection, planning and management process, enforcement, community involvement, problems and results.	Communities	Completed	Sylvie Guénette; Ratana Chuenpagdee (ratana@vims.edu.); Russ Jones (rjones@island.net)	Fisheries Center Research Reports 8(1). 2001. http://www.fisheries.ubc.ca/publications/reports/8-1.pdf
Alaska Fisheries Science Center	Compiling Data on Fishing Communities in Alaska	The goal of this project is to develop a method for generating community profiles for fishing communities in Alaska in a quick and cost-effective way through research on secondary data sources.	Communities	Completed	Jennifer Sepez (jennifer.sepez@noaa.gov)	Alaska Fisheries Science Center. 2004

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Parks Canada	Social Capital as a Dimension of Ecosystem Management	This paper discusses social capital and how it relates to the management of ecosystems, and suggests ways that social capital can assist ecosystem managers in contributing to more resilient, diverse, ecologically sustainable landscapes of which people are a part. This connection is explored as a possible means of enhancing ecosystem based management through understanding and drawing upon the civic networks that dominate in a landscape and the common beliefs that bond these networks together. Particular focus is given to networks that contribute to social and/or ecological stewardship within civic society and how ecosystem managers can build or monitor social capital or diversify the type of social capital they hold with the communities.	Communities and Governance	Completed	Jennie Sparkes jennie.sparkes@pc.gc.ca	http://www.sampaa.org/PDF/ch2/2.3.pdf.
University of California Santa Cruz /California Sea Grant	Information Needs for Effective Management of the California Market Squid Fishery: The Role of Social Science Research	This report takes into account the squid fishery's social and economic organization, including its structure; its temporal and spatial organization; the relationships among fishers, processors, and others involved in the fishery; and the informal and formal rules and strategies by which its participants operate. These factors will influence how different management options would affect, and be affected by, the fishery.	Communities	Completed	Caroline Pomeroy (cpomeroy@cats.ucsc.edu); Margaret FitzSimmons	CalCOFl Rep., Vol. 39. 1998. http://www.psmfc.org/efin/docs/otherpublications/Pomeroy_&_FitzSimmons_2001.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Natural Resources Institute, University of Manitoba, Winnipeg/Canada Department of Fisheries and Oceans, Central and Arctic Region	The Canadian Arctic and the Oceans Act: The Development of Participatory Environmental Research and Management	In recent years in the Canadian Arctic, participatory and pluralistic approaches have become common in several areas of environmental management relevant to the resolution of multiple-use conflicts: fish and wildlife, protected area planning, integrated coastal zone management, ecosystem health monitoring, contaminants research, environmental assessment, and climate change. This paper analyzes the emergence and development of aboriginal participation in resource management in each of these areas, with emphasis on the Canada Oceans Act. Especially important in this process has been the emergence of traditional environmental knowledge as a mechanism by which participatory approaches can be implemented.	Communities	Completed	Fikret Berkes (berkes@ms.umanitoba.ca); Jack Mathias (mathiasj@dfo-mpo.gc.ca); Mina Kislalioglu; Helen Fast (fasth@dfo-mpo.gc.ca)	Ocean & Coastal Management 44:451–469. 2001.
NOAA Fisheries, Northwest Fisheries Science Center	Community Profiles for West Coast and North Pacific Fisheries - Washington, Oregon, California and other U.S. States	This project develops a method for linking U.S. communities to fishing off the U.S. West Coast and in Alaskan waters (through permits, landings and other extant data). A long list of communities is then placed in rank order, so only the communities most "engaged in" or "dependent on" fishing are profiled in detail. Demographics, history, and involvement in west coast and north Pacific fishing are described in brief profiles for the selected communities.	Communities	In Progress	Karma Norman (karma.norman@noaa.gov)	Estimated publication date: May 2006

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA Channel Islands National Marine Sanctuary	'Elye'wun's Historic Channel Crossing	NOAA's Channel Islands National Marine Sanctuary (CINMS) staff members, aboard the NOAA support research vessel Xantu, were witness to an historic tomol (planked canoe) crossing on 8 September 2001. The Chumash Native American tomol named 'Elye'wun (pronounced "El-E-ah-woon"), was launched at Channel Islands Harbor at 3:30 in the morning. 'Elye'wun successfully crossed the Santa Barbara Channel arriving at Arch Rock, Anacapa Island at 9:30 A.M., the first successful crossing to the islands in over 125 years. Passing in front of Arch Rock at the eastern most end of the island, the paddlers raised their paddles in unison, symbolizing their accomplishment.	Cultural Heritage	Completed	Robert Schwemmer (robert.schwemmer@noaa.gov)	http://www.sanctuaries.nos.noaa.gov/news/features/news011008.html
NOAA Channel Islands National Marine Sanctuary	West Coast Shipwreck Database	The Channel Islands National Marine Sanctuary has been working in partnership with the BRIDGE to provide teachers and students with an online educational activity to learn more about important shipwrecks found within the five national marine sanctuaries (Channel Islands, Monterey Bay, Cordell Bank, Gulf of the Farallones and Olympic Coast) on the West Coast of the United States.	Cultural Heritage	In Progress	Robert Schwemmer (robert.schwemmer@noaa.gov)	http://www.cinms.nos.noaa.gov/shipwreck/shiphome.html

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA Channel Islands National Marine Sanctuary and Santa Barbara Maritime Museum	Cuba Shipwreck Exhibit	Channel Islands National Marine Sanctuary and the Santa Barbara Maritime Museum have partnered together in the development of interactive shipwreck exhibits. These exhibits provide the public with the unique opportunity to learn about the region's rich maritime history through historic shipwrecking events and what archaeologists and historians are learning from current field research at the sites.	Cultural Heritage	In Progress	Robert Schwemmer (robert.schwemmer@noaa.gov)	http://channelislands.noaa.gov/shipwreck/dbase/cinms/cuba1.html
National Oceanic and Atmospheric Administration (NOAA), the National Marine Sanctuary Program (NMSP), the US Geological Survey (USGS), Moss Landing Marine Laboratories (MLML) and Monterey Bay Aquarium Research Institute (MBARI)	USS Macon Exploration	In May 2005, a team of researchers from the National Oceanic and Atmospheric Administration (NOAA), the National Marine Sanctuary Program (NMSP), the US Geological Survey (USGS), Moss Landing Marine Laboratories (MLML) and Monterey Bay Aquarium Research Institute (MBARI) joined forces to further map the debris fields associated with the wreck site of the USS Macon. Building upon information gathered by the US Navy and MBARI's expeditions in 1990 and 1991, the researchers generated a new map that not only documents the extent of the primary debris fields but also suggests the existence of a debris trail not previously recorded. The ongoing research efforts are currently on display at the Monterey Maritime Museum.	Cultural Heritage	In Progress	Robert Schwemmer (robert.schwemmer@noaa.gov)	

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA Alaska Fisheries Science Center	Economic Impacts of the Steller Sea Lion Conservation Area	This is a study to predict the economic impact of a fishery closure such as the Steller Sea Lion Conservation Area. Not only does the model of fisher behavior improve our ability to predict the spatial redistribution of fishing effort in response to closing various parts of the Bering Sea pollock fishery for Steller sea lion preservation, but it also allows us, for the first time, to generate estimates of the costs to the fleet of having to fish outside of the closed areas. The model will serve as a useful tool in many other spatially delineated management issues and represents a practical and valuable contribution for predicting economic impacts of future closures.	Economics	Completed	Alan Haynie (Alan.Haynie@noaa.gov)	Resource Ecology & Fisheries Management (REFM) Division Economics & Social Sciences Research Program
California State Universities Fullerton and Long Beach	Contingent Valuation of Marine Protected Areas: Southern California Rocky Intertidal Ecosystems	Designations of Marine Protected Areas (MPAs) can protect coastal ecosystems, but apparently they have not effectively protected the rocky intertidal zone in urban Southern California. Here, illegal collecting and habitat disturbance harm coastal marine life. We surveyed day visitors to sandy beaches or adjacent rocky habitats in Orange County.	Economics	Completed	Darwin Hall (dhall@csulb.edu); Jane Hall (jhall@fullerton.edu); Steven Murray (smurray@fullerton)	Natural Resource Modeling 18(3). 2002. http://www.csulb.edu/~dhall/ContingentValuationMarineProtectedAreas.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California State University Monterey Bay	The California Rockfish Conservation Area and Groundfish Trawlers at Moss Landing Harbor	This article uses a bioeconomic model and data for groundfish trawlers at Moss Landing Harbor in Central California to analyze effects of spatial closures that were implemented recently by West Coast fishery managers to reduce by catch of over fished groundfish stocks. The model has a dynamic linear rational expectations structure, and estimates of its parameters exhibit spatial variation in microeconomic and ecological factors that affect decisions about where and when to fish. Test results show that variation in marginal costs of crowding externalities and biological rates of stock productivity are the most significant factors to consider in the spatial management of groundfish trawlers at Moss Landing.	Economics	Completed	Mike Dalton (michael_ dalton @ csumb.edu)	Marine Resource Economics 18:67–83.
Environmental Defense	Supplementary Report: Social and Economic Implications of a Channel Islands Marine Reserve Network	This analysis, conducted by the stakeholder working group's socioeconomic panel with support from NOAA's Special Projects Office computes the revenues lost due to various percentage reductions of areas available to consumptive uses, notably commercial and recreational fishing and diving. Importantly, the analysis only provides a before and after scenario for each of the boundary alternatives, including the "preferred alternative" submitted by the Sanctuary Advisory Council to the California Department of Fish and Game. Crucially, the current socioeconomic analysis rests on the assumption that current fishing efforts could continue at present rates into the future.	Economics, Use Patterns, Communities	Completed	Astrid J. Scholz (ajscholz@igc.org); Rodney M. Fujita (rfujita@environmentaldefense.org)	Environmental Defense. 2001.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Cowichan/Ladysmith Marine Tourism Authority	Commercial Marine-Based Tourism Study Report Promoting a Viable and Dynamic Marine Tourism Economy in the Cowichan/ Ladysmith Region	This report will outline the findings of a Marine Tourism Operator Study conducted for the Cowichan/Ladysmith Marine Tourism Authority during February of 2005 by the Recreation and Tourism Research Institute at Malaspina University-College. The report reviews the methods used to gather data and highlights findings including an inventory of marine tourism activities within the region, the desired future for marine tourism held by operators, and the obstacles that need to be overcome to achieve it.	Economics and Use Patterns	Completed	Nicole L. Vaugeois (vaugeois@mala.bc.ca); Rick Rollins (rollins@mala.bc.ca); Carleigh Randall (crandall@shaw.ca); Ashley Rowe; Amber Crofts	2005 http://marine.cowichan.net/pdf/final
NOAA National Ocean Service, Special Projects Office	Southern California Beach Valuation Project	This multi-agency effort was initiated by two offices in NOAA, The National Ocean Service's Special Projects Office and the Damage Assessment Center, for the purpose of estimating the market and nonmarket values of recreation uses of Southern California Beaches, beach visitation, the effect of beach attributes, substitution issues, and profiles of beach users on values. The project will result in a system to use this information to estimate values for any beach in the region.	Economics	Completed	Michael Hanemann (hanemann@are.berkeley.edu); Linwood Pendleton (linwoodp@ucla.edu); David Layton (dflayton@u.washington.edu); James Hilger (hilger@are.berkeley.edu)	NOAA, Coastal and Ocean Resource Economics. Http://marineeconomics.noaa.gov/SCBeach/welcome.html
NOAA National Marine Sanctuaries	Socio-Economic Research and Monitoring Recommendations for Marine Protected Areas in the Channel Islands National Marine Sanctuary	This document provides a menu of recommendations, along with an Organizational/Administrative Structure for implementing a socioeconomic monitoring program for the marine protected areas in the Channel Islands National Marine Sanctuary (CINMS). This document is NOT a socioeconomic Research and Monitoring Plan. The CINMS and CDFG can pick and choose from among recommendations presented here when developing their research and monitoring plans.	Economics, Use Patterns, Communities, Governance, Attitudes, Cultural Heritage	Completed	Vernon R. Leeworthy (Bob.Leeworthy@noaa.gov); Peter C. Wiley (Peter.Wiley@noaa.gov); Caroline Pomeroy (cpomeroy@cats.ucsc.edu); Craig Barilotti (seafoam@mindspring.com); Charles Kolstad (kolstad@bren.ucsb.edu)	NOAA, National Ocean Service, Special Projects. 2003. http://marineeconomics.noaa.gov/reserves/analysis/analysis.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Oregon Sea Grant	The Economics of Protected Areas in Marine Fisheries Management: An Overview of the Issues.	Marine protected areas (MPAs) necessarily involve human behavior and institutions, but these components are often overlooked. Social and economic elements permeate all stages of MPA development: the design, site selection, implementation, monitoring, and enforcement. This paper presents an overview of seven key economic elements of MPAs: economic uncertainty, design processes, distributional effects, institutional placement, economic impacts, management costs, and enforcement costs. The author assesses the extent to which these elements are receiving explicit consideration in current practice and the degree to which they are contributing to controversy in MPA implementation.	Economics	Completed	Susan Hanna (susan.hanna@oregonstate.edu)	American Fisheries Society Symposium 42:259-265. 2004
California State Universities Fullerton and Long Beach	Willingness to Pay in Intertidal Ecosystems in Orange County California	Marine protected areas can protect coastal ecosystems, but apparently have not effectively protected the rocky intertidal zone in urban Southern California. Here, illegal collecting and habitat disturbance harm coastal marine life. Day visitors to sandy beaches or adjacent rocky habitats were surveyed in Orange County. Using the close-ended, double-bounded contingent valuation method, the benefit of more effective enforcement and management of MPAs designed to avoid coastal ecosystem decay was estimated.	Economics	Completed	Darwin Hall (dhall@csulb.edu); Jane Hall (jhall@fullerton.edu); Steven Murray (smurray@fullerton)	April 1998-April 2000

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA	A Socioeconomic Overview of the Santa Barbara and Ventura Counties as it Relates to Marine Related Industries and Activities	The CINMS is currently involved in a management plan revision, a process that is mandated to take place approximately every five years. Two major issues have emerged from public scoping meetings on the management plan revision; 1) Boundary Expansion and 2) Ecological or Marine Reserve's) or "no take areas". Changes with respect to either of these issues will entail management actions and regulations that may have socioeconomic impacts on current and future user groups.	Socio-economics	In Progress	Vernon R. Leeworthy (Bob.Leeworthy@noaa.gov); Peter C. Wiley (Peter.Wiley@Noaa.gov).	Channel Islands National Marine Sanctuary, Marine Reserves Socioeconomic Panel www.cinms.nos.noaa.gov/marineres/semere.html
University of California Santa Barbara	Valuing Marine Protected Areas. A Monitoring Protocol for Recreational Non-Consumptive User Applied to the Channel Islands National Marine Sanctuary	To asses the practical use of MPAs as an ecosystem based marine resource management tool, both the ecological and economic effects of MPA establishment need to be examined.	Economics	Completed	Robert Ellis (rellis@bren.ucsb.edu).	http://www.bren.ucsb.edu
Ecotrust	Marine Life Protection Act (MLPA) Initiative Fisheries Uses and Values Project	The Marine Life Protection Act (MLPA) is a state law directing the California Department of Fish and Game (CDFG) to design and manage an improved network of marine protected areas off California's coast. To implement this law, a public-private partnership has been formed between the California Resources Agency, CDFG, and Resources Legacy Fund Foundation-the MLPA Initiative. As part of this effort, Ecotrust has been retained to collect, compile and analyze socioeconomic information pertaining to commercial fisheries on the central coast. The project is designed to provide spatially explicit socioeconomic information for both the MLPA Initiative and the Monterey Bay National Marine Sanctuary (MBNMS).	Economics; Use Patterns	In Progress	Astrid Scholz (ajscholz@ecotrust.org)	https://www.ecotrust.org/mlpa/

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Ecotrust	Socioeconomic Analysis for the Joint Management Plan Review for Gulf of the Farallones, Cordell Bank, and Monterey Bay National Marine Sanctuaries	Ecotrust has been retained by the three central California National Marine Sanctuaries to collect, compile and analyze socioeconomic information pertaining to commercial and recreational fisheries in the area in support of the Joint Management Plan Review (JMPR) process.	Economics; Use Patterns	In Progress	Astrid Scholz (ajscholz@ecotrust.org)	www.sanctuaries.noaa.gov/jointplan/cb_fishing.html
National Research Council Canada	Marine Protected Areas in Canada: Implications for both Conservation and Fisheries Management	Here, we give our perspective on the current status of marine resource protection in Canada in general and British Columbia in particular. We first describe and discuss the history of Canadian marine protected areas established to date. Many areas are claimed to be protected, with little understanding by either the general public or even most marine resource experts as to what human activities are actually regulated by legislative designations. Second, we present an overview of biological reasons and objectives for marine protected areas, followed by a review of both the conservation and fisheries management effects and implications resulting from effective renewable resource protection. Finally, we propose a unique qualitative scheme for classifying and describing marine protected areas of different types to determine relative measures of protection.	Governance, Institutions, and Processes	Completed	Glen S. Jamieson (jamiesong@dfo-mpo.gc.ca); Colin O. Levings	Can. J. Fish. Aquat. Sci. 58:138–156. 2001.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Ecotrust Canada; Canadian Parks and Wilderness Society; Sierra Club	Out of Sight, Out of Mind and Almost Out of Time: Towards an Effective System of Marine Protected Areas in British Columbia	The objectives of this document are to evaluate the effectiveness of the current system of marine protected areas in British Columbia, and to provide information to policy makers, legislators, resource managers, and environmental organizations about how the system can be improved and what should be taken into consideration when developing new MPAs.	Governance, Institutions, and Processes	Completed	Scott Wallace (scottw@island.net); David R. Boyd (sldf@sierralegal.com)	A brief to the Sierra Club of British Columbia. 2000. http://www.racerocks.com/racerock/admin/MPA/mpa.pdf
University of California Santa Barbara	A Political Ecology of Marine Protected Areas (MPAs): Case of Cabo Pulmo National Park, Sea of Cortez, Mexico	This dissertation argues that approaches to MPA evaluation must better address how users respond to the establishment of a MPA, when faced with a change in regulations over access to resources for the collective goal of conservation and the need to meet certain livelihood objectives. This research used a political ecology approach to understand user variability in terms of livelihood systems.	Governance, Institutions, and Processes; Use Patterns	Completed	Pamela A. Weiant (pweiant@umail.ucsb.edu)	PhD Dissertation, University of California Santa Barbara. 2005.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA Monterey Bay National Marine Sanctuary	A Review of the Ecological Effectiveness of Sub tidal Marine Reserves in Central California	The report reviews information about the effectiveness of the three marine reserves in the Monterey Bay National Marine Sanctuary (Hopkins Marine Life Refuge, Point Lobos Ecological Reserve, Big Creek Ecological Reserve), and the one in the Channel Islands National Marine Sanctuary. Our efforts to objectively evaluate reserves in Central California relative to reserve theory were greatly hampered for four primary reasons; (1) few of the existing marine reserves were created with clearly articulated goals or objectives, (2) relatively few studies of the ecological consequences of existing reserves have been conducted, (3) no studies to date encompass the spatial and temporal scope needed to identify ecosystem-wide effects of reserve protection, and (4) there are almost no studies that describe the social and economic consequences of existing reserve.	Governance, Institutions, and Processes	Completed	Richard M. Starr (starr@mlml.calstate.edu); Mark H. Carr (carr@biology.ucsc.edu); Jennifer Caselle (caselle@lifesci.ucsb.edu); James A. Estes (jim_estes@usgs.gov); Caroline Pomeroy (cpomeroy@cats.ucsc.edu)	2002. http://bio.research.ucsc.edu/people/raimondi/publications/carr/Starr%20et%20al_Part%201.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
NOAA Fisheries Habitat Conservation Division	Seeking Consensus on Designing Marine Protected Areas: Keeping the Fishing Community Engaged	A community group was formed to consider establishing marine reserves within the Channel Islands National Marine Sanctuary in southern California. Membership included representatives from resource agencies, environmental organizations, commercial and recreational fishing interests, and the general public. While the group agreed on several areas for fishing closures, members could not reach consensus on a specific network design. Several factors interfered with the group's effort in attaining agreement resulting in the endeavor subsequently being replaced by a "top-down" approach that lacks the support of the fishing community. Lessons learned from the project emphasize the need by marine protected area participants to recognize irreconcilable impasses early in the process and to seek solutions to maneuver around them. The importance of keeping the fishing community fully engaged is discussed.	Governance, Institutions, and Processes; Communities	Completed	Mark Helvey (Mark.helvey@noaa.com)	Coastal Management 32(2):173-190. 2004.
National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara	Eco-system Based Management for the Oceans: The Role of Zoning.	This NCEAS Working Group brings together ecologists and social scientists to explore the concept, practice, and opportunities for ocean zoning to help achieve ecosystem-based ocean management. Goals are (1) to compile and synthesize information on existing systems of ocean zoning and their ecological and social impacts, (2) compile and synthesize available data necessary to design and develop effective zoning systems, (3) develop the concept of ocean zoning, and (4)design a set of principles and policies for sustainable and resilient ecosystem-based ocean zoning systems.	Governance, Institutions, and Processes	In Progress	Gail Osherenko (osherenko@msi.ucsb.edu); Elliott Norse; Larry Crowder; Oran Young; Satie Airame	http://www.nceas.ucsb.edu

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of Arizona, Tucson	Marine Reserves and the Cooperative Management of Small-Scale Hookah Diving Fisheries in the Upper Gulf of California, Mexico: Strengthening an Emerging Fisheries Conservation Model	This project seeks to continue strengthening grassroots initiatives geared towards the sustainable use and conservation of marine resources harvested by small-scale hookah divers in the northern Gulf of California, Mexico. Specifically, Richard will monitor the short-term outcomes of this fishing sector's recent establishment of marine protected areas and produce a video documenting the divers' fishing practices and their community-based management and conservation efforts.	Governance, Institutions, and Processes; Use Patterns	In Progress	Richard Cudney (cudneyrtis@msn.com)	Environmental Leadership Program; http://www.elpnet.org/AFcudneyproject02.html
Washington Sea Grant	Partnerships and Cooperation on the Olympic Peninsula: A Summary of Natural Resource Programs Relating to the Olympic Peninsula and an Analysis of how to Promote Cooperative Management of the Olympic Coast National Marine Sanctuary.	This publication resulted from an effort by Washington Sea Grant Program and NOAA's Sanctuaries and Reserves Division to explore cooperative endeavors. They identified a common interest in improving linkages with the agencies and organizations conducting natural resource activities on the Olympic Peninsula. Part I of the resulting report gives an overview of natural resource programs on the Olympic Peninsula by federal, state, tribal and local community agencies and organizations. Part II analyzes a collaborative approach for promoting cooperative management of the Olympic Coast National Marine Sanctuary.	Governance, Institutions, and Processes	Completed	Michael Eng (eng@ecr.gov)	Washington Sea Grant white paper. 1994.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California Sea Grant	California Marine Protected Areas Past & Present	In 1999, the California state legislature passed the Marine Life Protection Act, which calls for an improvement in the array of marine protected areas (MPAs) and the design of an alternative network that includes fully protected (no-take) reserves. This publication presents to leaders and stakeholders examples of historical, anthropological, and ecological science-based information pertaining to MPAs and fisheries in California. The objective is to make available such information for public policy debate, not to make recommendations.	Governance, Institutions, and Processes	Completed	Deborah McArdle (damcardle@ucdavis.edu)	2002. (http://www.csgc.ucsd.edu/PUBLICATIONS/announce050.htm)

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of California Davis	Voluntary Marine Protected Areas and Adaptive Management in the San Juan Islands	Two types of voluntary Marine Protected Areas (MPAs) have been developed in San Juan County. The first, designed to manage whale watching, is a mobile species-specific MPA that applies only when orcas are present. The second type of voluntary MPAs are Bottomfish Recovery Zones designated by San Juan County. The integrity of an MPA depends upon compliance. In the San Juans most existing MPAs designated by top-down legislation haven't received adequate funding to monitor or enforce them. In contrast, the new voluntary MPAs are implemented through peer pressure and on-the water education programs. A primary tenet of adaptive management is flexible management that is modified for changing conditions. Top-down MPAs require legal enactment and legislated funding for education, monitoring, enforcement and prosecution. If regulations prove to be ineffective, adjustments require further legislation. This inflexible process makes regulated MPAs impractical for applying adaptive management. Because voluntary MPAs have no legal standing, local communities can propose them at any time.	Governance, Institutions, and Processes	Completed	Richard W. Osborne (whale@rockisland.com); Kari L. Koski; Rowann E. Tallmon	Puget Sound Research. 2001. http://mehp.vetmed.ucdavis.edu/pdfs/MPApdfs/Osborne2001.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of California Davis	A Comparison of a Collaborative and Top-Down Approach to the Use of Science in Policy: Establishing Marine Protected Areas in California	The National Research Council has proposed two distinct approaches over the past 20 years for guiding decision making about risk. These two approaches are widely accepted to environmental decision making and are exemplified by two attempts to establish marine protected areas in California with the implementation of the 1999 Marine Life Protection Act.	Governance, Institutions, and Processes	Completed	Chris Weible (cmweible@ucdavis.edu); Paul Sabatier(pasabatier@ucdavis.edu); Mark Lubell (mnlubell@ucdavis.edu)	Policy Studies Journal. May (2004)
University of Washington, School of Marine Affairs	Can the San Juan Islands National Wildlife Refuge Serve to Protect Marine Areas? Building on Existing Institutions and Legal Authorities to Create Marine Protected Areas	This article explores how marine areas currently set aside from public use and/or adjacent to upland protected areas, such as the San Juan NWR, could provide a politically feasible and cost-effective means for establishing MPAs. The idea is to build upon existing upland management by creating partnerships with other agencies and institutions in order to provide more organic management to marine areas and increase protection to the marine source.	Governance, Institutions, and Processes	Completed	Cristen Don (cristen.n.don@state.or.us)	Coastal Management 30:421–426. 2002.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Northwest Straits Commission	Achieving a Scientifically Based Regional System of Marine Protected Areas in the Northwest Straits: A Near Shore Perspective	The 107 documented MPAs, offering varying degrees of protection, have been established in this region by federal and state agencies, local governments, and private organizations. Most were established independently, and were not intended or designed to function as a network. Using the ShoreZone Inventory developed by the Washington Department of Natural Resources (WDNR), habitat characteristics along the shoreline of each MPA were examined and mapped. The degree to which each regional habitat type was represented in existing MPAs was evaluated within both partially and fully protected MPAs. Representativeness has been identified as a criterion in MPA network design when the goal is to protect biodiversity, and has been utilized in the planning processes. This preliminary analysis of the functionality of a de facto MPA network is an example of a tool to improve the use of MPA networks in protecting marine biodiversity in the Northwest Straits region of Washington State, and may serve as a national model for MPA network development.	Governance, Institutions, and Processes	Completed	Kate Smukler (Kate.smukler@noaa.gov)	NOAA National Marine Protected Areas Center. 2002. www.nwstraits.org

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California State University Fullerton	Human Visitation and the Frequency and Potential Effects of Collecting on Rocky Intertidal Populations in Southern California Marine Reserves	Humans intensely use southern California rocky shores for recreational activities. In Orange County, visitors concentrate their activities on a few rocky headlands and reefs. Many of these shores have been designated as California Marine Life Refuges (CMLRs) or State Ecological Reserves (SERs), where the removal of most intertidal organisms, except for scientific purposes, has been unlawful for 30 years. The cascading effects of collecting on community structure and the reproductive success of exploited populations are unknown. Except for state park rangers at one site, no state enforcement personnel were seen during 768 hours of low-tide observations throughout the year. Without effective enforcement, adequate signage, and educational programs to increase public awareness, CMLRs and SERs are not protecting rocky intertidal populations on heavily visited southern California shores.	Use Patterns	Completed	Steven Murray (smurray@ fullerton edu)	Visitation and Collecting in Intertidal Marine Reserves CalCOFl Rep., Vol. 40. 1999. http://www.calcofi.org/newhome/publications/CalCOFI_Reports/v40/pdfs/Vol_40_Murray_etal.pdf
Dalhousie University, Halifax, Nova Scotia, Canada	Managing Tourism and Recreational Activities in Canada's Marine Protected Areas: the Pilot Project at Race Rocks, British Columbia	Marine tourism is a major component of a massive global tourism industry. Extensive visitation to coastal and marine areas has lead to marine environmental degradation, compromising the very values that make these environments attractive to tourists. Marine protected areas strive to conserve biodiversity and ecological processes, many of which coincide with the abovementioned values. Tourism and MPAs can have a mutually beneficial relationship: MPAs provide venues for tourism and tourism, through education and awareness-raising, can create support for marine conservation, MPAs and other integrated coastal management strategies.	Use Patterns	Completed	Louise V. Murgatroyd (CPC1@pinc.com)	1999. http://www.racerocks.com/racerock/rreo/tourism/louise.htm

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of California Davis	Avoiding Surprises: Incorporating Fisherman Behavior into Management Models	Fishermen make decisions ranging from long-term entry/exit decisions to daily or even hourly decisions about where and how to fish. These decisions are influenced by regulations, technology, weather, and expectations about prices, costs, and abundance. They ultimately determine the spatial and temporal pattern of mortality in an exploited fishery. Although biologists have tried to incorporate fisherman behavior into management models, much of the work is ad hoc, whereas economics has a rich tradition of both conceptual and empirical behavioral modeling. This paper is an attempt to demonstrate the potential usefulness of economics-based behavioral modeling, with data collected for biological management.	Use Patterns; Economics	Completed	James E. Wilen (wvilen@primal.ucdavis.edu); Martin D. Smith (marsmith@duke.edu); Dale Lockwood; Louis W Botsford	Bulletin of Marine Science 70(2):553–575. 2002.
The Living Oceans Society	Gathering Spatial Knowledge from Local Experts: A Handbook for Interviewing Fishermen	This handbook explains the methodology that Living Oceans Society developed during three preliminary studies in 2002 and 2004 to gather local knowledge from commercial and recreational fishermen in the South Central Coast of British Columbia, Canada. During interviews, participants are asked to sketch key fishing sites on vellum-covered nautical charts. Each fishing site or "polygon" is ranked according to the subjective valuation of the participant. Depending on the scope of the survey or other data requirements, this general methodology can also be used to record other spatial knowledge, such as observances of ecological change, recreational site locations, areas of cultural significance, or species distribution.	Use Patterns	Completed	Jeff Ardron, Andrew Marchand, & Michael Liedkte (Comments/questions about project send to: oceans@livingoceans.org)	2005. www.livingoceans.org/documents/LOS_Interviewer_Handbook_version2-2.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California Department of Fish and Game	A Review of Restricted Access Fisheries	Restricting access has been used as a fishery management tool for thousands of years to improve resource sustainability, allocate catches among participants, and improve economic and social returns from fisheries. Restricting access to fisheries can 1) promote sustainable fisheries;2) provide for a more orderly fishery; 3) promote conservation among participants; and 4) maintain the long-term economic viability of fisheries.	Use Patterns	Completed	Christopher M. Dewees (cmdewees@ucdavis.edu); Michael L. Weber	2001. California's Living Marine Resources: A Status Report
Ecotrust	Place Matters: Geospatial Tools for Marine Science, Conservation, and Management in the Pacific Northwest	Place Matters explores how marine GIS is contributing to the understanding, management, and conservation of the shores and ocean of the Pacific Northwest, which is becoming a hotbed of marine GIS development and applications as scientists expand the use of this cutting-edge technology to a variety of ocean science, policy, and management issues.	Use Patterns	Completed	Dawn J. Wright; Astrid J. Scholz (astrid@ecotrust.org)	Oregon State University Press. 2005.
NOAA National Ocean Service, Special Projects Office	Non Consumptive Uses of California's National MPAs	The goal is to: focus energy on establishing method and mode for collecting non-consumptive use baseline data (e.g., data on divers, surfers, sailors, etc), and to focus on use by private boat access since much current data focuses on the charter industry.	Use Patterns	In Progress	Chris LaFranchi (chris@naturalequity.com); Linwood Pendleton (linwoodp@ucla.edu); Bob Leeworthy (Bob.Leeworthy@noaa.gov)	http://www.cinms.nos.noaa.gov/sac/pdf/1_21_05.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California Sea Grant	Trends in Fisheries and Fishery Resources Associated with the Monterey Bay National Marine Sanctuary from 1981-2000	Fisheries in Central California are part of this region's rich cultural and economic history. In the last decade, however, catches of many fishery resources have greatly declined, due both to decreases in fish populations and to new regulations enacted to conserve or rebuild fish stocks. In this book, we summarize the technical concepts and information that fishery scientists use to estimate the population sizes of harvested species. In addition to summarizing scientific information, we also provide a brief description of the types of fisheries operating in the region encompassed by the Monterey Bay National Marine Sanctuary (MBNMS), and a summary of fishery management operations.	Use Patterns; Governance, Institutions and Processes	Completed	Richard M. Starr (Starr@mlml.calstate.edu); Jason M. Cope; Lisa A. Kerr	California Sea Grant. 2002.
California Sea Grant	No-Take Reserve Networks: Sustaining Fishery Populations and Marine Ecosystems.	The authors of this paper discuss the need for improved management approaches, such as no-take marine reserves, in reducing the rate at which humans deplete exploited marine populations and degrade marine ecosystems. Networks of no-take marine reserves have the potential to protect coastal ecosystem structure and functioning, benefit exploited populations and fisheries, improve scientific understanding of marine ecosystems, and provide enriched opportunities for non-extractive human activities.	Use Patterns	Completed	Steven Murray (smurray@fullerton); Richard Ambrose (rambrose@ucla.edu); James Bohnsack	Fisheries 24(11):11-25. 1999.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
Washington Sea Grant	Sustainable Coastal Tourism: Challenges for Management, Planning, and Education	Coastal tourism development is an inherently controversial and increasingly complex phenomenon that forces deliberation over marine life and habitat conservation, economic improvement, and quality of life objectives. With this situation, the ideal of sustainable coastal tourism has found much support by brokers who control tourism, locals who witness tourism, and varieties of (eco)tourists. Mechanisms that have shown potential for shaping coastal tourism systems in positive ways include tourism management, tourism planning, and tourism education. However, the attainment of sustainable coastal tourism goals will also depend on multidisciplinary tourism research, enhanced broker-broker communication and cooperation, and the commitment of tourists to be alert to ecological and cultural consequences of their travel.	Use Patterns; Governance, Institutions and Processes	Completed	Miller Marc L (mlmiller@u.washington.edu); Jan Auyong; Nina Hadley	Portions of this paper appear in M. L. Miller (2002), "Coastal Tourism and Development," In: Proceedings of the International Marine Forum, (April 25, 2002; Inha University,Incheon City).
The Living Oceans Society	Modeling a Network of Marine Protected Areas for the Central Coast of BC	Concurrent with our ecological modeling, but not discussed in this report, we are conducting a use analysis. This involves interviewing local fishermen and mapping their use of the region's waters. Beginning with the south Central Coast, we plan to perform a use analysis with these data, producing "use hotspots." Then we will blend the conservation hotspots with the use hotspots to create conclusions based on both ecological and economic values	Use Patterns	Completed	Jeff A. Ardron (jardron@livingoceans.org); Jennifer Lash (jenlash@island.net); Dana Haggarty (dana@livingoceans.org)	2002. www.livingoceans.org/files/LOS_MPA_model_v31_web.pdf

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
University of California Santa Cruz	Do Commercial Fishers Aggregate Around Marine Reserves? Evidence from Big Creek Marine Ecological Reserve, Central California	Growing interest in no take MPAs as a complement to traditional fishery management has lead to increased attention to biophysical considerations for MPA design, implementation, management and evaluation. Less attention has been directed toward social, cultural, and economic considerations for MPAs. A study of social considerations and co-management of local fisheries at big creek reserve and the arrangement as a form of co-management as it has played an integral role in the history of the marine reserve and concludes with observations and emerging questions about the social aspects of establishing and maintaining no take marine reserves in the context of local fisheries.	Use Patterns	Completed	Chris Wilcox; Caroline Pomeroy (cmpomeroy@ucdavis.edu)	North American Journal of Fisheries Management 23:241-250. 2003.

Existing Social Science Research Efforts						
Institution	Project/ Publication Title	Description	Theme	Project Status	Contacts/ Authors	Source
California Sea Grant	Economic Impacts of Marine Reserves: The Importance of Spatial Behavior	Marine biologists have shown support for managing fisheries with marine reserves, signifying a new resource management paradigm that recognizes the importance of spatial processes in exploited systems. Most modeling of reserves employs simplifying assumptions about the behavior of fishermen in response to spatial closures. The authors show that a realistic depiction of fishermen's behavior dramatically alters the conclusions about reserves. They develop, estimate, and calibrate an integrated bioeconomic model of the sea urchin fishery in northern California and use it to simulate reserve policies. The model shows how economic incentives determine both participation and location choices of fishermen. They compare simulations with behavioral response to purely biological modeling and conclude that optimism about reserves may be the product of simplifying assumptions that ignore economic behavior.	Use Patterns	Completed	Martin Smith; James Wilen (jewilen@ucdavis.edu)	Journal of Environmental Economics and Management 46:183-206. 2003.
US National Park Service	National Park Stewardship and 'Vital Signs' Monitoring: A Case Study From Channel Islands National Park, California	This paper describes a design process for developing ecological monitoring programs using a medical metaphor for 'vital signs'. Design and implementation of a monitoring program from 1980 through to 2003 provides an example of how that process was used at Channel Islands National Park, California. Finally, the paper presents some results of this monitoring and shows how these results affected conservation issues in and around the park.	Use Patterns	Completed	Gary Davis (gary_davis@nps.gov)	Aquatic Conservation: Marine and Freshwater Ecosystems 15: 71–89. 2005. http://portals.conservation.org/downloads/stored-file/Document/national%20park%20stewardship.pdf

Appendix D. Research Institutions and Information Resources

Research Institutions and Information Resources										
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions					
				Coordination	Governance	Training/Education	Research	Outreach	Funding
Antarctic Protected Areas Information Archive	Special Protected Areas	The United Kingdom Foreign and Commonwealth office, Environmental Research and Assessment, and the British Antarctic Survey's Natural Environment Research Council maintain this information archive. Provides information on the Antarctic Protected Area system, Antarctic Specially Protected Areas, Antarctic Specially Managed Areas, historic sites and monuments, seal reserves, and The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) Ecosystem Monitoring Program (CEMP) sites.	http://www.conservation.org/xp/CIWEB/regions/priorityareas/marine/					•	
Coastal Conservation Association		Coastal Conservation Association (CCA) is an organization of strong state chapters comprised of avid recreational fishermen who have banded together to address conservation issues nationally and within their respective states. Web site includes CCA Position Paper on MPAs and Testimony of Sherman Baynard on behalf of the Coastal Conservation Association before the Subcommittee on Fisheries, Conservation, Wildlife and Oceans, Committee on Resources, United States House of Representatives October 2001 in Annapolis, Maryland.	http://www.joincca.org/index.html	•			•	•	
Conservation International	Marine Managed Area Science Initiative	Conservation International's mission is to conserve the Earth's living natural heritage and global biodiversity. Its Protected Areas program is funded by the Global Conservation Fund (GCF), which works to create or expand protected areas in the Earth's most biologically significant regions, and to secure their long-term financing.	http://www.conservation.org/xp/CIWEB/regions/priorityareas/marine/	•			•	•	•
Cooperative Ecosystem Studies Units Program (CESU)	California, north and west Alaska, pacific northwest CESU	Federal land management, environmental, and research agencies, along with the nation's universities, share several science-based goals in the 21st century: high-quality science, usable knowledge for resource managers, responsive technical assistance, continuing education, and cost-effective research programs. A network of Cooperative Ecosystem Studies Units has been established to achieve these goals.	http://www.cesu.org/			•	•		•

Research Institutions and Information Resources									
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions					
				Coordination	Governance	Training/Education	Research	Outreach	Funding
Ecotrust	Fisheries Program	Ecotrust seeks full public disclosure of the status of Pacific salmon as well as fundamental institutional changes in the way fisheries, marine ecosystems and watersheds are managed.	http://www.ecotrust.org/fisheries/		•	•	•	•	•
Environmental Defense	Marine Protected Areas	Environmental Defense is a U.S. nonprofit organization linking science, economics, and law to address society's urgent environmental problems. Its Marine Protected Areas web site provides information on its work with commercial and recreational fishermen, environmental organizations, scientists, divers, ecotourism operators, and community leaders for building support to create a network of MPAs. Includes links to information on Environmental Defense MPA work in the following areas: the Caribbean (including Cuba, the Bahamas, and the Florida Keys); Channel Islands; Gulf of Mexico; Hawaii; and New England.	http://www.environmentaldefense.org/home.cfm	•	•		•		
Fisheries and Oceans Canada Pacific Region		Fisheries and Oceans Canada's Pacific Region's Marine Protected Areas homepage provides information on the MPA strategy for Canada's Pacific coast, the development of four pilot MPAs (including Endeavor Hydrothermal Vents), and the evaluation of the MPA development process.	http://www.pac.dfo-mpo.gc.ca/oceans/mpa/default_e.htm	•	•		•	•	
Monterey Bay Aquarium	Seafood Watch	A program of Monterey Bay Aquarium designed to raise consumer awareness about the importance of buying seafood from sustainable sources.	http://www.mbayaq.org/cr/seafoodwatch.asp	•	•		•	•	
National Marine Protected Area Center Science Institute	Social Science Program	The National Marine Protected Areas Center's mission is to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas. To this end, the Center works closely with states, territories, regions, tribal trustees, and other stakeholders to improve understanding of marine protected areas (MPAs) in order to protect significant coastal marine resources for present and future generations.	Dr. Charles M. Wahle-Director National MPA Science Institute 110 Shaffer Road Santa Cruz, CA 95060 (831) 420-3956 (831) 242-2051 (fax) charles.wahle@noaa.gov	•	•		•		

Research Institutions and Information Resources									
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions					
				Coordination	Governance	Training/Education	Research	Outreach	Funding
Natural Reserve System, University of California		Supports university-level teaching, research, and public service at protected natural areas throughout California. Manages a number of coastal areas for research and study through its Natural Reserve System.		•				•	
NOAA Fisheries Alaska Fisheries Science Center		The Alaska Fisheries Science Center is the research branch of the National Oceanic and Atmospheric Administration's National Marine Fisheries Service responsible for research on living marine resources in the coastal oceans off Alaska and off parts of the west coast of the United States. This region of nearly 3 million square miles includes the North Pacific Ocean and the eastern Bering Sea which support some of the most important commercial fisheries in the world. These waters are also home to the largest marine mammal populations in the Nation. The mission of the Alaska Fisheries Science Center is to plan, develop, and manage scientific research programs which generate the best scientific data available for understanding, managing, and conserving the region's living marine resources and the environmental quality essential for their existence.	Alaska Fisheries Science Center Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service 7600 Sand Point Way N.E., Building 4 Seattle, Washington 98115 Phone: 206 526-4000 Fax: 206 526-4004		•		•		
NOAA Fisheries Northwest Fisheries Science Center	Socio-economics program	The Northwest Fisheries Science Center studies living marine resources (e.g., salmon, groundfish, and killer whales) and their habitats in the Northeast Pacific Ocean-primarily off the coasts of Washington and Oregon and in freshwater rivers and streams in Washington, Oregon, Idaho, and Montana. The Center seeks to better understand living marine resources and their ecosystems to assist resource managers in making sound decisions that build sustainable fisheries, recover endangered and threatened species, and sustain healthy coasts. The Center's headquarters in Seattle, WA and its five research stations in Washington and Oregon are home to more than 300 scientists and staff	Northwest Fisheries Science Center 2725 Montlake Blvd. East Seattle, WA 98112-2097 Phone: 206-860-3200 Fax: 206-860-3217		•		•		

Research Institutions and Information Resources										
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions					
				Coordination	Governance	Training/Education	Research	Outreach	Funding
NOAA Fisheries Santa Cruz Lab	Fisheries Economics Program	Research is focused on Pacific Coast Groundfish and Pacific Salmon. Groundfish under study include rockfishes, flatfishes, Pacific whiting, sablefish and lingcod; salmon include coho, chinook and steelhead. Results of this research are used by the Pacific and Klamath Fishery Management Councils to manage fisheries and by NMFS to manage threatened and endangered species. Laboratory scientists study causes of variability in abundance and health of fish populations, analyze ecological relations in marine communities, and study the economics of exploiting and protecting natural resources. They also assess the stocks of species targeted by various fisheries, and assist in evaluating potential impacts of human activities on threatened or endangered species.	http://santacruz.nmfs.noaa.gov/	•	•	•	•		
Oregon State University, College of Oceanic and Atmospheric Sciences		The Ocean and Coastal Resources concentration in the Marine Resource Management MS/MA Degree Program at Oregon State University's College of Oceanic and Atmospheric Sciences includes elective courses on marine protected areas, coastal wetlands and watersheds, and marine policy.		•				•	
Parks Canada, National Marine Conservation Areas		Parks Canada's National Marine Conservation Areas program is charged with setting up a national system of marine protected areas, to represent the full range of ecosystems found in Canada's Atlantic, Arctic, and Pacific Oceans, and the Great Lakes.	information@pc.gc.ca		•				
People for Puget Sound		People For Puget Sound is a non-profit citizens' group working to protect and restore the health of Puget Sound and the Northwest Straits through education and action. Our vision is a clean and healthy Sound, teeming with fish and wildlife, cared for by people who live here.	http://www.puget-sound.org/index/index	•	•	•		•	
Resources Legacy Fund Foundation	California Coastal and Marine Initiative (CCMI) and Sustainable Fisheries Fund (SFF)	The Resources Legacy Fund Foundation (RLFF) is a separate 501(c)(3) non-profit organization that supports and performs essential services for the benefit of the Resources Legacy Fund in promoting land conservation and environmental protection.	http://www.resourceslegacyfund.org/rlff/rlff.html				•		•

Research Institutions and Information Resources										
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions						
				Coordination	Governance	Training/Education	Research	Outreach	Funding
Samish Nation Center for Study of Coast Salish Environments	Samish Research Center	The Center for the Study of Coast Salish Environments was created in 2002 to with three main aims: (1) to provide scientific support for sound stewardship of the Samish Historic Territory including treaty rights; (2) to prepare Samish tribal members for careers in the sciences and engineering; and (3) to generate Samish tribal employment and income from research and conservation projects. Funding for the Center will come from competitive sources such as the National Science Foundation, as well as research contracts with State and Federal agencies that share management responsibilities in the "Salish Sea".	http://www.samish-tribe.nsn.us/dnr/dnr_1.html		•	•	•	•	
Save Our Shores		Save Our Shores, based in Santa Cruz, California, has initiated several beach clean ups, water testing and is on the forefront of the grassroots campaign to keep the nations ocean clean.	www.saveourshores.org	•	•	•		•	
SeaDoc Society	Marine Ecosystem Program	The SeaDoc Society brings together key stakeholders, including federal, provincial, Tribal, state, and non-governmental organizations, to prioritize needs for targeted marine wildlife and ecosystem health research. It provides high-quality scientific information specifically where and when it is needed to improve management and achieve conservation.	http://mehp.vetmed.ucdavis.edu/			•	•		•
Sea Grant/NOAA	Alaska, California, Oregon, Washington	Sea Grant is NOAA's primary university-based program in support of coastal resource use and conservation. Our research and outreach programs promote better understanding, conservation and use of America's coastal resources. In short, Sea Grant is "science serving America's coasts."				•	•	•	•
SeaWeb	Communication Partnership for Science and the Sea (COMPASS), SEAWEB aquaculture center	SeaWeb is a public education project designed to raise awareness of the ocean and the life within it. SeaWeb is composed of experienced individuals from a wide variety of fields, including biology, exploration, publication, media and public relations. Its campaign on Marine Protected Areas includes a survey of 1,000 likely voters in California on attitudes toward fully protected marine areas. The document was produced for SeaWeb by Edge Research and is available at http:/www.seaweb.org/CAPollWeb.pdf	http://www.seaweb.org/programs/	•		•		•	

Research Institutions and Information Resources										
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions					
				Coordination	Governance	Training/Education	Research	Outreach	Funding
Surfrider Foundation	Special Places	Surfrider Foundation, based in San Clemente, California, has initiated its Special Places Campaign to work to identify and protect special coastal and ocean places along the Pacific West and Northwest of the United States. It promotes MPAs for the purpose of preserving wild recreational areas, protecting special ocean and coastal places from environmental problems, and restoring ecosystem health in marine, estuarine and beach habitats.	http://www.surfrider.org/	•	•			•	
The Nature Conservancy		The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive	(800) 628-6860 or e-mail comment@tnc.org.	•	•			•	•
The Ocean Conservancy	Marine Protected Areas	The Ocean Conservancy is a nonprofit organization dedicated to science-based advocacy, grassroots activism, litigation, education and outreach to find lasting solutions to issues affecting our oceans and all marine life. Promotes MPAs and marine reserves as a means of restoring ocean ecosystems.	http://www.oceanconservancy.org/site/PageServer	•	•			•	•
The Packard Foundation	The Conservation and Science Program: Oceans and Coasts, Marine Fisheries, Coastal Systems, Science for Oceans and coasts.	The Conservation and Science Program seeks to protect and restore our oceans, coasts, and atmosphere and to enable the creative pursuit of scientific research toward this goal. The Program makes grants to nonprofit organizations, supports the Monterey Bay Aquarium Research Institute, and manages the Packard Fellowships for Science and Engineering.	http://www.packard.org/index.cgi?page=consci	•	•	•	•	•	•
University of California Santa Barbara	The Interdepartmental Graduate Program in Marine Science	The Interdepartmental Graduate Program in Marine Science at the University of California, Santa Barbara is a multidisciplinary program bringing together marine faculty from across the UCSB campus to provide graduate training leading to the Master of Science and the Doctor of Philosophy degrees in Marine Science.	http://www.marinegp.ucsb.edu/			•	•	•	•

Research Institutions and Information Resources										
Institution/Resource	Program	Description and/or Mission	Contact	Primary Functions						
				Coordination	Governance	Training/Education	Research	Outreach	Funding
University of Washington	School of Marine Affairs	The School of Marine Affairs (SMA) at the University of Washington offers an internationally recognized master's degree program for launching careers in marine policy and administration. SMA's strength lies both in its rigorous academic program and its faculty research in current marine and coastal issues. Students at SMA learn creative approaches to resolving marine problems and conflicts and may concentrate in a variety of subject areas from coastal zone management to marine environmental protection to port and marine transportation management.	http://www.sma.washington.edu/about/contact.html			•	•		
Whale Museum (Friday Harbor)	The Whale Museum Wildlife Refuge Patrols (Soundwatch)	The Soundwatch team educates boaters in the vicinity of the refuges and hands out National Wildlife Refuge maps. Soundwatch also assists the U.S. Fish & Wildlife Service by providing information and brochures at marinas, marine parks and visitor areas likely to reach boaters and commercial ecotourism operators in San Juan County.	http://www.whalemuseum.org/programs/soundwatch/swprograms1.html					•	
World Commission on Protected Areas (WCPA)	Program on Protected Areas	The World Commission on Protected Areas (WCPA) is one of the six commissions of the World Conservation Union (IUCN). The WCPA promotes the establishment and effective management of a global representative system of terrestrial and marine protected areas.	http://www.iucn.org/themes/wcpa/wcpa/wcpaindex.htm		•		•		
World Wildlife Fund	Global Marine Program	WWF is a global organization acting locally through a network of family offices to conserve the world's biological diversity, ensure sustainable use of renewable natural resources, and promote reduction of pollution and wasteful consumption. WWF works to establish marine protected area networks and systems in some of the most biologically diverse areas across the world, and works to ensure support by local communities so they can be managed effectively.	http://www.panda.org/about_wwf/what_we_do/marine/what_we_do/protected_areas/index.cfm				•		

Appendix E. Regional Regulatory Framework

Regulatory Framework		
Title	Summary	Includes Social Science
INTERNATIONAL OVERVIEW		
Ramsar Convention on Wetlands, 1971	Intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention's mission is the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.	•
UNESCO's World Heritage Convention, 1972	The most significant feature of the Convention is to link together in a single document the concepts of nature conservation and the preservation of cultural sites. Nature and culture are complementary and cultural identity is strongly related to the natural environment in which it develops.	•
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973	Establishes system of regulations and/or prohibitions in the trade of species, both plant and animal, or any specimen part thereof. See Appendix I for species threatened with extinction as a result of trade; Appendix II for species in which trade control is necessary for survival; and, Appendix III for species subject to regulation in the host nation.	
United Nations Convention on the Law of the Sea (UNCLOS), 1982	The United Nations Convention on the Law of the Sea lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. It enshrines the notion that all problems of ocean space are closely interrelated and need to be addressed as a whole.	
United Nations Conference on the Environment and Development (UNCED), 1992	UNCED was an international gathering on human activities in relationship to the environment, during which five major agreements on global environmental issues were signed: The Framework Convention on Climate Change, The Convention on Biological Diversity, Agenda 21, Barbados Program of Action, and The Rio Declaration of Principles.	•
- Agenda 21 Chapter 17, Oceans and Coasts	Agenda 21 sets out comprehensive strategies and programs to counter coastal environmental degradation and promote sustainable development.	•
- Rio Declaration of Principles	The goal of this Declaration is to establish cooperation among member states to reach agreement on laws and principles promoting sustainable development. The Declaration addresses the following areas: natural resources; environmental impact of development; poverty; ecosystem protection; the sharing of scientific ideas; public participation / public access to information; implementation of legislation; economic policies internalization of environmental costs and the 'polluter pays' principle; notification of pollution incidents; Environmental Impact Statements; and, indigenous cultures.	•
- Convention on Biological Diversity (CBD)	The objective of the CBD is to conserve biological diversity, promote the sustainable use of its components, and encourage equitable sharing of the benefits arising out of the utilization of genetic resources.	
- Framework Convention on Climate Change	The Convention's objective is to achieve the stabilization of production of greenhouse gasses. It sets out principles to achieve a greater understanding of global warming including the sharing of research and development and technology transfer.	

Regulatory Framework		
Title	Summary	Includes Social Science
- Barbados Programme of Action (BPoA), 1994	BPoA specifically addresses the priority issues within developing countries by reaffirming the commitments and principles embodied in the Rio Declaration on Environment and Development, (Agenda 21). Primarily, it remodeled these commitments and principles into a programme for Small Island Developing State (SIDS) countries by classifying the areas of vulnerability in SIDS countries as either economic or environmental. The BPoA presents a basis for action in 14 agreed priority areas, including climate change, natural and environmental disasters, management of wastes, coastal and marine resources, freshwater resources, land resources, energy resources, tourism resources, biodiversity resources, national institutions and administrative capacity, regional institutions and technical co-operation, transport and communication, science and technology and human resource development.	
United Nations Environment Program's Global Program of Action for the Protection of the Marine Environment from Land-based Activities (UNEP – GPA), 1995	The GPA is designed to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities.	•
REGIONAL OVERVIEW		
Pacific Fishery Management Council (PFMC)	PFMC is one of eight regional fishery management councils established by the Magnuson Fishery Conservation and Management Act of 1976 for the purpose of managing fisheries 3-200 miles offshore of the United States of America coastline. The Pacific Council is responsible for fisheries off the coasts of California, Oregon, and Washington.	•
The North Pacific Fishery Management Council (NPFMC)	NPFMC is one of eight regional councils established by the Magnuson Fishery Conservation and Management Act in 1976 (which has been renamed the Magnuson-Stevens Fishery Conservation and Management Act) to oversee management of the nation's fisheries. With jurisdiction over the 900,000 square mile Exclusive Economic Zone (EEZ) off Alaska, the Council has primary responsibility for groundfish management in the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI), including cod, pollock, flatfish, mackerel, sablefish, and rockfish species harvested mainly by trawlers, hook and line longliners and pot fishermen. The Council also makes allocative and limited entry decisions for halibut, though the U.S. - Canada International Pacific Halibut Commission (IPHC) is responsible for conservation of halibut. Other large Alaska fisheries such as salmon, crab and herring are managed primarily by the State of Alaska.	•
Pacific States Marine Fisheries Commission (PSMFC)	In 1947, Congress formed the Pacific States Marine Fisheries Commission (PSMFC) to help resolve fishery issues in California, Oregon, Washington, Idaho and Alaska. PSMFC helps create fishery consensus for state and federal authorities. We also create interstate cooperation regarding mutual fishery resource issues. PSMFC is one of only three Interstate Commissions in the United States today. The PSMFC Compact states that its purpose shall be "to promote the better utilization of fisheries – marine, shell, and anadromous, which are of mutual concern, and to develop a joint program of protection and prevention of physical waste of such fisheries in all of those areas of the Pacific Ocean over which the compacting states jointly or separately now have or may hereafter acquire jurisdiction." PSMFC has no regulatory or management authority.	•
NATIONAL OVERVIEW		
Antiquities Act (1906)	Authorizes the President to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with proper care and management of the objects to be protected. Also permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior and Agriculture to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulation as they may prescribe.	•

Regulatory Framework		
Title	Summary	Includes Social Science
National Parks Service Organic Act of 1916	Established the National Parks Service within the Department of the Interior to promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified, except such as are under the jurisdiction of the Secretary of the Army, as provided by law, by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.	•
Historic Sites Act of 1935	Declares that it is a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States. The regulating agency is the National Parks Service (NPS), Department of the Interior.	•
Outer Continental Shelf Lands Act of 1953	Defines the Outer Continental Shelf (OCS) as all submerged lands lying seaward of State coastal waters (3 miles offshore) which are under U.S. jurisdiction. The statute authorized the Secretary of Interior to promulgate regulations to lease the OCS in an effort to prevent waste and conserve natural resources and to grant leases to the highest responsible qualified bidder as determined by competitive bidding procedures.	
Wilderness Act of 1964	Set aside certain federal lands as wilderness areas. These areas, generally 5,000 acres or larger, are wild lands largely in their natural state. The act says that they are areas "... where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Four federal agencies of the United States government administer the National Wilderness Preservation System: the Bureau of Land Management, the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the National Park Service.	
National Historic Preservation Act of 1966	Congress made the federal government a full partner and a leader in historic preservation: to "provide leadership" for preservation, "contribute to" and "give maximum encouragement" to preservation, and "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony."	•
National Wildlife Refuge System Administration Act of 1966	This section of law consolidates the authorities relating to the various categories of areas administered by the Secretary of the Interior for the conservation of fish and wildlife by designating all such areas part of the National Wildlife Refuge System.	
National Environmental Policy Act of 1969	The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and, to establish a Council on Environmental Quality.	•
Marine Protection, Research, and Sanctuaries Act of 1972	The Marine Protection, Research, and Sanctuaries Act (MPRSA) regulates the ocean dumping of waste, provides for a research program on ocean dumping, and provides for the designation and regulation of marine sanctuaries. Often known as the Ocean Dumping Act, the act regulates the ocean dumping of all material beyond the territorial limit (three miles from shore) and prevents or strictly limits dumping material that "would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities." The regulating agency is the Environmental Protection Agency (EPA) (permitting and setting of environmental criteria) and U.S. Army Corps of Engineers (dumping of dredged materials).	•
National Marine Sanctuaries Act of 1972	Allows the regulating agency to designate and manage areas of the marine environment with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or esthetic qualities as National Marine Sanctuaries. The primary objective of this law is to protect marine resources, such as coral reefs, sunken historical vessels or unique habitats. The regulating agency is NOAA, Department of Commerce.	•

Regulatory Framework		
Title	Summary	Includes Social Science
Clean Water Act of 1972	Established the basic structure for regulating discharges of pollutants into the waters of the United States, and deals primarily with surface water quality protection. The regulating agency is the EPA.	
Coastal Zone Management Act of 1972	Established a voluntary national program within the Department of Commerce to encourage coastal States to develop and implement coastal zone management plans. Funds were authorized for cost-sharing grants to States to develop their programs. Subsequent to Federal approval of their plans, grants would be awarded for implementation purposes. The regulating agency is NOAA, Department of Commerce.	•
Marine Mammal Protection Act of 1972	The Marine Mammal Protection Act (MMPA) was enacted in 1972 to protect and manage marine mammals and their products (e.g., the use of hides and meat). The regulating agencies are the Fish and Wildlife Service (FWS), Department of the Interior; and NOAA's National Marine Fisheries Service (NMFS), Department of commerce. The FWS manages walruses, polar bears, sea otters, dugongs, marine otters, and West Indian, Amazonian, and West African manatees. The NMFS manages whales, porpoises, seals, and sea lions.	
Endangered Species Act of 1973	The purpose of this law is to protect endangered and threatened species and to provide the means to conserve their ecosystems. The regulating agencies are the Fish and Wildlife Service (FWS), Department of the Interior; and NOAA's National Marine Fisheries Service (NMFS), Department of Commerce.	
Magnuson-Stevens Fishery Conservation and Management Act of 1976	This Act governs the conservation and management of ocean fishing. It establishes exclusive U.S. management authority over all fishing within the exclusive economic zone, all anadromous fish throughout their migratory range except when in a foreign nation's waters and all fish on the Continental Shelf. The Act also establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans to achieve the optimum yield from U.S. fisheries in their regions. The Magnuson Fishery Conservation and Management Act is now the Magnuson-Stevens Fishery Conservation and Management Act, and is also known as the Sustainable Fisheries Act. The regulating agency is NOAA's National Marine Fisheries Service (NMFS), Department of Commerce.	•
The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)	Created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.	
LOCAL OVERVIEW		
Alaska		
Alaska Fish and Game Code Chapter 5. Boards of Fisheries and Game. Regulations of the Board of Fisheries.	The Board of Fisheries may adopt regulations it considers advisable in accordance with AS 44.62 (Administrative Procedure Act) for setting apart fish reserve areas, refuges, and sanctuaries in the waters of the state over which it has jurisdiction, subject to the approval of the legislature; establishing open and closed seasons and areas for the taking of fish; if consistent with resource conservation and development goals, the board may adopt regulations establishing restricted seasons and areas necessary for various peoples; setting quotas, harvest levels, and sex and size limitations on the taking of fish; establishing the means and methods employed in the pursuit, capture and transport of fish; establishing marking and identification requirements for means used in pursuit, capture and transport of fish; classifying as commercial fish, sport fish, and personal use fish, subsistence fish or predators or other categories essential for regulatory purposes; watershed and habitat improvement, management, conservation, protection, use disposal, propagation, and stocking of fish.	•

Regulatory Framework		
Title	Summary	Includes Social Science
Alaska Statutes (AS) Conservation and Protection of Alaskan Wildlife (AS 16.20.010)	The legislature recognizes that: (1) the state has jurisdiction over all fish and game in the state except in those areas where it has assented to federal control; (2) the state has not assented to federal control of fish and game in (A) those areas that were set apart as National Bird and Wildlife Refuges while the state was a United States territory; and (B) Glacier Bay National Park and Preserve or the navigable waters within or adjoining the park and preserve; (3) special recognition of the value to the state and the nation of areas of unspoiled habitat and the game characteristic to it will be demonstrated by designating as state game refuges those federal lands that were National Bird and Wildlife Refuges or Ranges at the time that Alaska achieved statehood. In recognition of the fact that the state has not assented to federal control of fish and game in Glacier Bay National Park and Preserve or the navigable waters within or adjoining the park and preserve, that the power to control the management of fish and game within the boundaries of the state is an incident of state sovereignty, and that the federal government cannot commandeer the lawmaking processes of the states to compel the state to enact and enforce a federal regulatory program, an agency, employee, or agent of the state may not expend funds to adopt or enforce the implementation of the federal regulatory program or a part of the program for control of fish and game in the park and preserve or the navigable waters within or adjoining the park and preserve that is in conflict with a state statute or regulation regarding management of fish or game within the park or preserve. This subsection does not prohibit an agency, employee, or agent of the state from (1) taking action necessary to protect life or property; (2) commenting on proposed federal statutes or regulations; (3) collecting data relating to claims of economic harm arising from the closure of the park and preserve to commercial fishing; or (4) participating in or cooperating with a federal program established under 16 U.S.C. 703 - 712 (Migratory Bird Treaty Act); 16 U.S.C. 773 - 773k (Northern Pacific Halibut Act of 1982); 16 U.S.C. 1361 - 1421h (Marine Mammal Protection Act); 16 U.S.C. 1531 - 1544 (Endangered Species Act); 16 U.S.C. 1801 - 1883 (Magnuson-Stevens Fishery Conservation and Management Act); 16 U.S.C. 3631 - 3644 (Pacific Salmon Treaty Act of 1985).	•
Alaska Historic Preservation Act: title to historic, prehistoric and archeological resources and local display	Reserves title for the state to all historic, prehistoric and archeological resources on land owned or controlled by the state, including tideland and submerged land, and reserves for the state the exclusive right of field archeology on such land. Prohibits anything in §41.35.010 through §41.35.240 from diminishing the cultural rights and responsibilities of persons of aboriginal descent or infringing upon their right of possession and use of historic, prehistoric and archeological resources. Enables local cultural groups to obtain or retain artifacts from the state for study and display in appropriate museums under proper conditions.	•
Marine Parks (AS 41.21.300 et seq)	The Alaska Department Natural Resources (DNR) is responsible for the management of the state parks system, of which thirty-three sites are designated as Alaska State Marine Parks. The primary purpose in establishing the land and water areas that comprise a state marine park are to maintain natural, cultural, and scenic values; maintain fish and wildlife resources and lawful existing uses of marine and coastal resources; and to promote and support recreation and tourism in the state (AS 41.21.300 (a)). In addition, the land and aquatic component of each marine park is dedicated as a special purpose site under the state constitution.	
Alaska Fish and Game Code (AS 16.20.500) Special Areas; Fish and Game Critical Habitat Areas	The purpose of AS 16.20.500 - 16.20.690 is to protect and preserve habitat areas especially crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with that primary purpose. Sec. 16.20.510. Regulations. The Board of Fisheries and the Board of Game, where appropriate, shall adopt regulations they consider advisable for conservation and protection purposes governing the taking of fish and game in state fish and game critical habitat areas.	
Alaska Fish and Game Code (AS 16.05.870) 16.05.870. - 16.05.900l [Repealed, E.O. No. 107, Sec. 44 (2003). For current law, see AS 41.14.870 - 41.14.900]. Anadromous Water Bodies	Alaska Fish and Game Code (AS 16.05.870) Sec. 41.14.870. Protection of fish and game. (a) The deputy commissioner shall, in accordance with AS 44.62 (Administrative Procedure Act), specify the various rivers, lakes, and streams or parts of them that are important for the spawning, rearing, or migration of anadromous fish.	

Regulatory Framework		
Title	Summary	Includes Social Science
California		
The California Marine Life Protection Act (MLPA)	The California Resources Agency and California Department of Fish and Game are partnering with the Resources Legacy Fund Foundation and others in a new initiative to achieve the MLPA goals. This public-private partnership will be guided by the advice of scientists, resource managers, experts, stakeholders and members of the public. The 1999 MLPA directed the state to design and manage a network of marine protected areas in order to, among other things, protect marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve recreational, educational and study opportunities provided by marine ecosystems. Marine protected areas include state marine reserves, state marine parks and state marine conservation areas.	•
California Coastal Sanctuary Act of 1994	The Legislature hereby finds and declares that offshore oil and gas production in certain areas of state waters poses an unacceptably high risk of damage and disruption to the marine environment of the state. (a) A California Coastal Sanctuary is hereby created which includes all state waters subject to tidal influence, except as provided in subdivisions (b) and (c). (b) The California Coastal Sanctuary shall not include any state waters subject to a lease for the extraction of oil or gas in effect on January 1, 1995, unless the lease is deeded or otherwise reverts to the state after that date. (c) The California Coastal Sanctuary shall not include any state waters situated east of the Carquinez Bridges on Interstate 80.	
California Code: Fish and Game Code Section 1580-1586	1580. The Legislature hereby declares that the policy of the state is to protect threatened or endangered native plants, wildlife, or aquatic organisms or specialized habitat types, both terrestrial and non-marine aquatic, or large heterogeneous natural gene pools for the future use of mankind through the establishment of ecological reserves. For the purpose of establishing those ecological reserves, the department, with the approval of the commission, may obtain, accept on behalf of the state, acquire, or control, by purchase, lease, easement, gift, rental, memorandum of understanding, or otherwise, and occupy, develop, maintain, use, and administer land, or land and non-marine water, or land and non-marine water rights, suitable for the purpose of establishing ecological reserves.	
California Code: Public Resources Code Section 72420-72421	(a) If the appropriate federal agencies approve an application made pursuant to subdivision (a) of Section 72440, or if the board determines that an application is not required, an owner or operator of a large passenger vessel may not release, or permit anyone to release, any sewage sludge from the vessel into the marine waters of the state or a marine sanctuary. (b) An owner or operator of a large passenger vessel may not release, or permit anyone to release, any oily bilge water from the vessel into the marine waters of the state or a marine sanctuary.	
California Code: The Marine Managed Areas Improvement Act (Ch. 7)	Establishes a uniform classification system for state marine managed areas and is incorporated herein by reference. Any proposals for marine protected areas made after January 1, 2002, shall follow the guidelines set forth in that act.	

Regulatory Framework		
Title	Summary	Includes Social Science
California Code: Public Resources Code Section 72420-72421, Shipwreck and Historic Maritime Resources Program	Directs the State Lands Commission to administer the Shipwreck and Historic Maritime Resources Program with respect to salvage operations over and upon all tide and submerged lands of the state. Authorizes the commission to issue permits to conduct salvage operations upon or over any of those lands and to adopt rules and regulations regarding application for and operations under those permits. Salvage permit must be issued for any operation which includes search by electronic means, exploration and excavation using tools or mechanical devices, with the objective of locating and removing objects from the surface or subsurface of state submerged lands. Allows salvage permits to be issued for one year with an option to renew for an additional year at the discretion of the commission. Allows recreational recovery permits to be issued for any exploration or excavation of submerged lands with small hand tools for the limited recovery of small objects. Exempts any recreational diving activity from requiring a permit if such activity does not disturb the subsurface or remove objects from a submerged site. Enables the commission to revoke a permit upon failure of the permit holder to comply with the terms of the permit. Authorizes the commission to require that a person designated by the commission and paid by the permit holder to be present during all salvage operations to observe and monitor compliance with the terms of the permit. Directs the commission to provide fair compensation to the permit holder, in terms of a percentage of the reasonable cash value or a fair share of the objects recovered, when title to the objects to be recovered, including a vessel, is vested in the state.	
California Code: Public Resources Code Section 6313, Title to abandoned shipwrecks	Vests title in the state to all abandoned shipwrecks and all archeological sites and historic resources on or in the tide and submerged lands of the state. Directs the State Office of Historic Preservation to determine the archeological or historic significance of shipwreck sites by reference to their eligibility to the National Register of Historic Places and, with the assistance of the State Lands Commission, to identify, compile, and maintain an inventory of significant shipwreck sites. Authorizes the commission to issue permits for salvage operations involving submerged archeological sites or submerged historic resources to individuals or organizations representing scientific or educational institutions or to individuals or organizations which demonstrate the capability to conduct those activities. Requires the applicant for a permit to submit a detailed plan to the commission prior to the commencement of any salvage activity which provides for appropriate protection and preservation of the site or objects or materials removed from the site. Requires all applications for salvage permits to be reviewed by the state historic preservation officer.	•
California Code: Public Resources Code Section 6301-6314, Destruction or removal of abandoned shipwrecks	Declares that any person who removes, without authorization from the State Lands Commission, or who destroys or damages an archeological site or any historic resource which is located on or in the submerged lands which is the property of the state is guilty of a misdemeanor punishable by imprisonment not to exceed six months in the county jail or a fine not to exceed $5,000, or by both. Enables the commission to seek civil damages for the damage, loss, or destruction of abandoned shipwrecks, their gear or cargo, or any archeological site or historic resources located on or in submerged lands of the state. Allows confiscation by state, federal, or local authorities of any objects or material taken from a submerged archeological site or historic resource without a permit or without reasonable evidence of legal possession.	•

Regulatory Framework		
Title	Summary	Includes Social Science
California Code: Public Resources Code Section 5019.56, Classification of units of the state park system: state parks; state recreation units	Recognizes that state parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archeological, ecological, geological or other such values. Declares the purpose of the state parks to be to preserve outstanding natural, scenic and cultural values, indigenous aquatic and terrestrial fauna and flora and the most significant examples of California's major ecological regions. Requires that improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural and ecological values for present and future generations. Prohibits improvements that do not directly enhance the public's enjoyment of the natural, scenic, cultural or ecological values of the resource. Allows state parks to be established in either the terrestrial or underwater environment of the state. (§5019.56)(a) Requires that areas containing ecological, geological, scenic or cultural resources of significant value shall be preserved within state wildernesses, state reserves, state parks, or natural or cultural preserves. (c) Requires that coastal areas containing ecological, geological, scenic or cultural resources of significant value shall be preserved within state wildernesses, state reserves, state parks, or natural or cultural preserves.	•
California Code: Public Resources Code Section 5001.6 and 5019.62, Classification of units of the state park system: state seashores	Specifies that state seashores shall consist of relatively spacious coastline areas with frontage on the ocean, or on bays open to the ocean, including water areas seasonally connected to the ocean, possessing outstanding scenic or natural character and significant recreational, historical, archeological, or geological values. Allows state seashores to include underwater areas within them, but prohibits their being established solely in the underwater environment. Declares that the purpose of state seashores shall be to preserve outstanding natural, scenic, cultural, ecological, and recreational values of the California coastline as an ecological region and to make possible the enjoyment of coastline and related recreational activities that are consistent with the preservation of the principal values and that contribute to the public enjoyment, appreciation and understanding of those values. Requires improvements undertaken within state seashores to be for the purpose of making the areas available for public enjoyment, recreation and education in a manner consistent with the perpetuation of their natural, scenic, cultural, ecological, and recreational value. Prohibits improvements that do not directly enhance the public enjoyment of the natural, scenic, cultural, ecological, or recreational values of the seashore, or that are attractions in themselves.	•
Oregon		
Oregon Oceans Resources Act (ORS) 196.405 - .515), Oregon Ocean Resources Management	The 1991 legislature recognized that Oregon's existing federally-approved Coastal Management Program [OCMP] provided a strong policy and legal foundation for ocean management by involving state agencies, local governments, and federal agencies. So, the law references "applicable elements" of the OCMP, such as statutes, programs, and policies of state agencies, local government plans, and statewide planning goals that "relate to the conservation and development of ocean and coastal resources" such as Statewide Planning Goal 19, Ocean Resources, which was recently updated by the Land Conservation and Development Commission.	
Oregon Coastal Zone Management Act 1972	This Act establishes an extensive federal grant program within the Department of Commerce to encourage coastal states to develop and implement coastal zone management programs. Activities that affect coastal zones must be consistent with approved state programs. The Act also establishes a national estuarine reserve system. Act considers resource improvement, protection of coastal waters (non-point), and coordination and cooperation of resources and institutions.	
Oregon Coastal Management Program 1977	The Oregon Coastal Management Program monitors erosion response for beach and shore lands goal compliance. Local government permitting is also often required.	•

Regulatory Framework		
Title	Summary	Includes Social Science
Statewide Planning Goals 16 (ORS 197; OAR 660-015-0000 et seq) Areas for Preservation and Restoration	Statewide Planning Goal 16 (Estuarine Resources) establishes detailed requirements for the planning and management of Oregon's estuaries. The overall objective of Goal 16 is to "recognize and protect the unique environmental, economic and social values of each estuary and associated wetlands, and to protect, maintain, where appropriate develop and restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries." To accomplish this, the Goal sets broad requirements for preparation of plans and for review of individual projects. The Goal calls for coordinated action by all local, state and federal agencies that regulate or have an interest in Oregon's estuaries. To recognize and protect the unique environmental, economic, and social values of each estuary associated with wetlands and to: protect, maintain, where appropriate develop and where appropriate restore the long term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.	•
Statewide Planning Goals 5; 16-18 (ORS 215 et seq; 197; OAR 660-015-0000(5)) Natural Resources, Scenic & Historic Areas	The manifest purpose behind O.R.S. Ch. 215 is to regulate and control growth and development in the counties of Oregon.	
Statewide Planning Goals 19: (OAR 660-015-0010(4)) Ocean Resources	To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations.	•
Special Marine Fish and Wildlife Managed Areas (OAR 635-039-0080)	The purpose of division 039 is to provide for management of sport fisheries for marine fish, shellfish, and marine invertebrates in the Pacific Ocean, coastal bays, and beaches over which the State has jurisdiction.	
Washington		
Revised Code of Washington (RCW) § 28B.20.320 (2005), Marine biological preserve, unlawful gathering of marine biological materials	There is hereby created an area of preserve of marine biological materials useful for scientific purposes, except when gathered for human food, and except, also, the plant nereocystis, commonly called "kelp." Such area of preserve shall consist of the salt waters and the beds and shores of the islands constituting San Juan county and of Cypress Island in Skagit county. (2) No person shall gather such marine biological materials from the area of preserve, except upon permission first granted by the director of the Friday Harbor Laboratories of the University of Washington. (3) A person gathering such marine biological materials contrary to the terms of this section is guilty of a misdemeanor.	
Ocean Resources Management Act (RCW Chapter 43.143)	1) Washington's coastal waters, seabed, and shorelines are among the most valuable and fragile of its natural resources. (2) Ocean and marine-based industries and activities, such as fishing, aquaculture, tourism, and marine transportation have played a major role in the history of the state and will continue to be important in the future. (3) Washington's coastal waters, seabed, and shorelines are faced with conflicting use demands. Some uses may pose unacceptable environmental or social risks at certain times. (4) The state of Washington has primary jurisdiction over the management of coastal and ocean natural resources within three miles of its coastline. From three miles seaward to the boundary of the two hundred mile exclusive economic zone, the United States federal government has primary jurisdiction. Since protection, conservation, and development of the natural resources in the exclusive economic zone directly affect Washington's economy and environment, the state has an inherent interest in how these resources are managed.	•
Washington Shoreline Management Act (SMA) of 1971 (RCW 90.58.010 et seq)	SMA was passed by the State Legislature in 1971 and adopted by the public in a 1972 referendum. The overarching goal of the SMA is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines."	

Regulatory Framework		
Title	Summary	Includes Social Science
Underwater Parks (RCW Chapter 79.70)	Directs the State Parks and Recreation Commission to seek to create diverse recreational opportunities in establishing an underwater park system and to place a high priority upon creating units that possess unique or diverse marine life or underwater natural or artificial features such as shipwrecks.	•
Archaeological Sites and Resources (RCW Chapter 27.53)	Declares that the public has an interest in the conservation, preservation, and protection of the state's archaeological resources, and the knowledge to be derived and gained from the scientific study of these resources. Authorizes to have such rule-making authority as is necessary to carry out the provisions of this chapter regarding archeological resource preservation. Directs that any proceeds from the state's share of property recovered under this chapter shall be transmitted to the state treasurer for deposit in the general fund to be used only for the purposes of historic preservation and underwater archeology.	•
Natural Area Preserves Act (RCW Chapter 79.70)	The purpose of this chapter is to establish a state system of natural area preserves and a means whereby the preservation of these aquatic and land areas can be accomplished. All areas within the state, except those which are expressly dedicated by law for preservation and protection in their natural condition, are subject to alteration by human activity. Natural lands, together with the plants and animals living thereon in natural ecological systems, are valuable for the purposes of scientific research, teaching, as habitats of rare and vanishing species, as places of natural historic and natural interest and scenic beauty, and as living museums of the original heritage of the state. It is, therefore, the public policy of the state of Washington to secure for the people of present and future generations the benefit of an enduring resource of natural areas by establishing a system of natural area preserves, and to provide for the protection of these natural areas.	•
Columbia River Mouth Sanctuaries; Washington Administrative Code (WAC) 220-33-005	General provision -- Commercial fishing regulated. It is unlawful to fish for food fish in the lower Columbia River for commercial purposes or to possess food fish taken from those waters for commercial purposes, except as provided in this chapter. WAC 220-33-005 Definitions -- River mouth sanctuaries. As used in this chapter and emergency rules of the director, unless the context clearly requires otherwise. Grays Bay, Elokomin, Abernathy, Cowlitz, Kalama, Lewis, Washougal, and Oregon.	
Conservation Areas; Marine Preserves; Special Fishery Management Areas (RCW 77.04.012; WAC 220-20-100)	Mandate of department and commission. Wildlife, fish, and shellfish are the property of the state. The commission, director, and the department shall preserve, protect, perpetuate, and manage the wildlife and food fish, game fish, and shellfish in state waters and offshore waters. The department shall conserve the wildlife and food fish, game fish, and shellfish resources in a manner that does not impair the resource. In a manner consistent with this goal, the department shall seek to maintain the economic well-being and stability of the fishing industry in the state. The department shall promote orderly fisheries and shall enhance and improve recreational and commercial fishing in this state. The commission may authorize the taking of wildlife, food fish, game fish, and shellfish only at times or places, or in manners or quantities, as in the judgment of the commission does not impair the supply of these resources. The commission shall attempt to maximize the public recreational game fishing and hunting opportunities of all citizens, including juvenile, disabled, and senior citizens. Recognizing that the management of our state wildlife, food fish, game fish, and shellfish resources depends heavily on the assistance of volunteers, the department shall work cooperatively with volunteer groups and individuals to achieve the goals of this title to the greatest extent possible. Nothing in this title shall be construed to infringe on the right of a private property owner to control the owner's private property. [2000 c 107 § 2; 1983 1st ex.s. c 46 § 5; 1975 1st ex.s. c 183 § 1; 1949 c 112 § 3, part; Rem. Supp. 1949 § 5780-201, part. Formerly RCW 75.08.012, 43.25.020.]	

Regulatory Framework		
Title	Summary	Includes Social Science
Seashore Conservation Area (RCW 79A.05.600 et seq)	The beaches bounding the Pacific Ocean from the Straits of Juan de Fuca to Cape Disappointment at the mouth of the Columbia River constitute some of the last unspoiled seashore remaining in the United States. They provide the public with almost unlimited opportunities for recreational activities, like swimming, surfing and hiking; for outdoor sports, like hunting, fishing, clamming, and boating; for the observation of nature as it existed for hundreds of years before the arrival of white men; and for relaxation away from the pressures and tensions of modern life. In past years, these recreational activities have been enjoyed by countless Washington citizens, as well as by tourists from other states and countries. The number of people wishing to participate in such recreational activities grows annually. This increasing public pressure makes it necessary that the state dedicate the use of the ocean beaches to public recreation and to provide certain recreational and sanitary facilities. Non-recreational use of the beach must be strictly limited. Even recreational uses must be regulated in order that Washington's unrivaled seashore may be saved for our children in much the same form as we know it today.	•