Getting the Work Done

Tools for Governing

Territorial Sea Plan
Ocean Policy Advisory Council
Project Review Panels
Coastal Local Governments
State Agency Programs
Interstate Coordination
State-Federal Partnership

The 1987 Oregon Legislature took a visionary step toward ensuring the long-term conservation of Oregon's ocean resources. It established the Oregon Ocean Resources Management Task Force and charged it with preparing a plan for managing ocean uses and resources. The Legislature asked for two kinds of recommendations; those for conserving and protecting ocean resources and those needed to improve Oregon's ocean management capability. In so doing, the Legislature recognized that merely completing a plan will not be enough. Oregon will need to build an ocean management structure to carry out the plan, to update the plan to keep it current, and to amend it to meet new needs.

The Ocean Resources Management Plan provides Oregon with a blueprint for building an ocean management program. This section describes the parts and the steps Oregon will need to take to meet its ocean resource management responsibilities.

Governance refers to the ways in which the State of Oregon will organize to make complex

and sensitive decisions about ocean resources. Governance recognizes that ocean stewardship and conservation of ocean resources involves the interests, concerns, and knowledge of many diverse groups. Citizens, local governments, interest groups, marine scientists, the fishing industry, state and federal agencies, the Governor and the Legislature must all be linked in a comprehensive management framework.

In the past, Oregon has not had a framework for ocean governance. Many agencies, groups and individuals had interests in ocean resources but there was no structure to bring them all together.

One of the principal purposes of the Oregon Ocean Resources Management Act was to improve the management of ocean resources of interest and concern to Oregon. The Legislature recognized that sound management requires a system of governance so that all interested parties can effectively participate. The Legislature found that

> *It is important that the State of Oregon develop and maintain a program of ocean resources management to promote and insure coordinated management of living and nonliving marine resources within state jurisdiction and with adjacent states, to insure effective participation in federal agency planning and management of ocean resources and uses which may affect this state, and to coordinate state agency management of ocean resources with local government management of coastal shorelands and resources.*

The Legislature required that the Ocean Resources Management Plan include recommendations "for a permanent ocean resources planning and management process..." as well as recommendations on other aspects of ocean governance.

Oregon should take the following steps to improve its ocean governance capability:

- Prepare a more detailed plan for Oregon's territorial sea
- Establish an ongoing Ocean Policy Advisory Council
- Convene Project Review Panels
- Strengthen local government participation
- Improve state agency programs
- Coordinate with adjacent coastal states
- Work with federal agencies to build a co-management approach to ocean resource management

The Territorial Sea Plan

Legislative Charge

The 1987 Oregon Legislature anticipated a second phase in Oregon's ocean planning which would focused on the three-mile territorial sea. The Oregon Ocean Resources Management Act (ORS 196) required that the State Land Board adopt a more specific plan for "management of the resources and uses of the submerged and submersible lands of state territorial sea consistent with...the policies and recommendations of the Oregon Ocean Resources Management Plan." The territorial sea plan was required to be completed by July 1, 1991 and will become "the basis for rules to be adopted by the Division of State Lands."

Rethinking the Plan

In 1987, legislators and others expected that the Oregon Ocean Resources Management Plan would contain more detail and specific recommendations for the entire ocean planning area than has, in fact, been possible with the information available, time, and resources allotted. Preparation of a management plan for the territorial seabed for adoption by the State Land Board was expected to have been a relatively simple process based on the specifications in the ocean plan.

After developing this ocean plan, Oregon must now take the "next step" in ocean planning and prepare a more specific plan for the territorial sea. However, this plan must now be thought of more broadly than envisioned in 1987 for several major reasons:

- First, the most controversial issues concern resources and uses nearshore and have been resolved only at the broad policy level. More detailed information is needed to support discussion and negotiation of management proposals for specific sites.
- Second, a wide range of participants and interested parties must continue to be involved in resolving more specific planning issues in the territorial sea. This is especially true of the public which is keenly interested in ocean issues.
- Third, state agencies involved in ocean resources management are just beginning to forge a coordinated consultation process for sound integrated decision-making. The experience gained in developing the ocean plan will be highly valuable in developing the territorial sea plan.
- Fourth, the legislative deadline for plan completion does not allow sufficient time to gather additional information, discuss and resolve issues and prepare more specific recommendations.

Legislation will be necessary to amend the specific requirements of ORS 196, related to the territorial sea plan.

Plan Topics

Some of the topics which the territorial sea plan should address are:

Marine birds and mammal habitat areas

A territorial sea plan would provide a significant opportunity to improve protection of sensitive marine bird and mammal populations and to develop management programs tailored to the needs of each site. The planning process should refine criteria, document and analyze information, and develop site-specific measures.

The Department of Fish and Wildlife should be the lead agency and work with U.S. Fish and Wildlife Service and National Marine Fisheries Service. These agencies should coordinate with fishermen, Sea Grant Marine Extension Agents, local governments, and citizens.

Intertidal areas (Intertidal Marine Gardens)

The territorial sea plan process should

begin with the list of sites identified in the Ocean Resources Management Plan to develop a program for marine gardens. The plan should address public information and education needs as a major component of a marine gardens program.

The Department of Fish and Wildlife should be the lead agency and work with the Park and Recreation Department, Division of State Lands, OSU Sea Grant, local governments, and citizens.

Oil spill response

Key elements of Oregon's coastal oil spill plan being developed by the Department of Environmental Quality should be included in the territorial sea plan. These include, at a minimum, a site specific inventory of shoreline, estuarine, and intertidal areas, their sensitivity to spilled oil and the preferences or limitations of various clean up techniques.

The territorial sea plan should also include enforceable policies and standards for oil spill contingency plan requirements, use of dispersants liability limits, damage assessment and compensation within Oregon waters. The Department of Environmental Quality is the lead agency for a coastal oil spill prevention and response plan.

Marine Water and Air Quality

The territorial sea plan should address specific marine water and air quality needs, including such issues as water quality standards, baseline and monitoring programs, and coordination with federal agencies. The Department of Environmental is the lead agency for marine water and air quality issues.

Leases for Cultivating or Harvesting Marine Plants and Animals

Whether Oregon ought to enter into leases for cultivating or harvesting marine plants and animals on the ocean floor may be questions increasingly raised in the coming years. Leases convey certain benefits to some ocean users and may result in some loss to others who are denied access to the site. The Ocean Plan does not address this issue in any detail. The territorial sea plan process should go further and lay out the groundrules for state policy.

The Division of State Lands, as the proprietor of the seabed, and the Department of Fish and Wildlife should be the lead agencies on this issue.

Artificial Reefs

The Ocean Plan does not address issues pertaining to artificial reefs. The territorial sea plan is an opportunity for Oregon to seek additional information and develop policy to guide requests for placement of reefs.

The Department of Fish and Wildlife should be the lead agency with the fishing industry, local governments and the Division of State Lands key participants.

Recreation and Cultural Resources

The territorial sea plan should address in-water recreational needs and limitations in Oregon's nearshore areas as well an overview of all coastal recreational opportunities and needs . The plan is an opportunity for the state Parks and Recreation Department, local governments, and the public to make a more precise assessment about the need for and location of marine parks and development of other coastal recreation resources while protecting the shoreline environment.

Dredged Material Disposal

Dredged material disposal is regulated by federal permits through the U.S. Army Corps of Engineers at designated ocean dump sites. The territorial sea plan should review the adequacy of siting criteria and dumping practices, determine whether those sites should be designated by the state and make recommendations for state agency policy.

The Division of State Lands, Department of Fish and Wildlife, Department of Land Conservation and Development, Department of Environmental Quality and U.S. Army Corps of

Engineers should be main participants on this issue.

Marine Minerals

The territorial sea plan should include a framework research plan to guide study and research needs for marine mineral decisions.

The Division of State Lands and Department of Fish and Wildlife would be co-leads on work related to marine minerals. Other state and federal agencies and local governments would also participate.

Preparing the Plan

The territorial sea planning process should be viewed as a continuation of the work begun by the Ocean Resources Management Plan. All participants in the ocean resources management planning process should be provided with clear opportunities to participate in the territorial sea plan process. The proposed Ocean Policy Advisory Council is an appropriate forum for ensuring that the plan is developed through an interdisciplinary, interjurisdictional, public process.

A number of difficult and complex issues should be addressed by the territorial sea plan. The original statutory deadline of July 1, 1991, does not leave sufficient time to resolve sensitive issues and agree to workable plan elements. Solutions will require careful work among several state, local, and federal agencies, interests groups, and the public. Legislation is needed to amend state law to provide additional time.

Status of the Plan

The territorial sea plan should be adopted by the Land Conservation and Development Commission as part of Oregon's Coastal Management Program.

Conclusions

The Ocean Resources Management Plan completes the first phase of scoping issues, gathering information, developing policies and identifying needed actions within the 200-mile U.S. Exclusive Economic Zone off Oregon.

Oregon needs to continue its ocean planning program to focus on the state's territorial sea. Within this critical area of state control, few issues have in-depth treatment. Several major issues must be resolved for uses, resources, and specific areas within Oregon's three-mile territorial sea.

Recommendations

1. Oregon should prepare a management plan for the state's territorial sea based on the needs and recommendations of this Ocean Resources Management Plan.
2. The proposed Ocean Policy Advisory Council should coordinate preparation of the territorial sea plan and should continue the interdisciplinary, interagency, public process begun during preparation of the Ocean Resources Management Plan.
3. The 1991 Oregon Legislature should:
   - Establish the Ocean Policy Advisory Council, as proposed
   - Amend state law to broaden the scope and extend the preparation time for the territorial sea plan
   - Provide budget support to the plan process to ensure citizen involvement, public education, and state agency participation

The Ocean Policy Advisory Council

Legislative Charge

The Oregon Ocean Resources Management Act requires the Ocean Plan to contain recommendations concerning a permanent ocean resources planning and management process, including:

- Options for an advisory coordinating body to succeed the Task Force.
- Advisory committees.
- The roles of the Governor, state and federal agencies, local governments, citizens, and other interested parties.
- A process to update and amend the ocean plan.

Options for a Coordinating Body

While there are a wide variety of possibilities for an ocean advisory body, three options are presented here.

One: a state agency-only policy coordinating committee. This committee would be limited to agencies which had actual regulatory or proprietary interests in ocean resources or uses. Several advisory committees could ensure participation of the public, local governments, ocean users, marine scientists and federal agencies.

Two: a citizen's policy commission. Similar in concept to other lay commissions in Oregon, this commission would represent the public's interests in ocean resources without the considerations of agency responsibilities. The commission would need several advisory committees.

Three: a broadly representative policy advisory council. This configuration would be similar to that of the Ocean Resources Management Task Force where the many diverse interests in ocean resources and uses have had "a seat at the table." A scientific/technical advisory committee and, if necessary, other advisory committees would provide advice and assistance.

An advisory body will need staff assistance. ORS 196 designates the Department of Land Conservation and Development as the primary agency for coordination of ocean resources planning activities. DLCD is the appropriate agency to provide staff assistance to an advisory body.

Conclusions

Oregon should continue its ocean resources management program with a broadly representative body, as described in option three, rather than a more limited one. The Task Force is an appropriate model for a permanent Ocean Policy Advisory Council. It would provide a forum for state agencies, ocean users, coastal local governments, citizens and interest groups on ocean resource issues.

An Ocean Policy Advisory Council would be the appropriate body to prepare a plan for Oregon's territorial sea as a continuation of the work of the Task Force (see discussion of territorial sea plan, above). This Policy Council should have the benefit of a technical and scientific advisory committee.

Over the long term, the Policy Advisory Council would provide coordination and oversight as state agencies, federal agencies and local governments carry out the recommendations of the Ocean Resources Management Plan and territorial sea plan. The Ocean Policy Advisory Council may also establish Project Review Panels as described below. The Policy Council would be responsible for updating and amending the ocean plan.

Recommendations

1. The Oregon Legislature should create an Oregon Ocean Policy Advisory Council, composed of representatives of ocean users,

local governments, the public, and state agencies.

2. The purposes of the Ocean Policy Advisory Council should be to:
   - Coordinate preparation of a management plan for the territorial sea based on the needs and recommendations of this Ocean Resources Management Plan and the directions of the Legislature
   - Provide a forum for discussing ocean resource policy, planning and management issues and, when appropriate, mediating disagreements
   - Recommend improvements to the Ocean Resources Management Plan and territorial sea plan as needed
   - Offer advice to the Governor, the State Land Board, state agencies and local governments on specific ocean resource management issues
   - Coordinate interagency and intergovernmental review of specific ocean resource projects or actions through Project Review Panels
   - Encourage participation of federal agencies in discussion and resolution of ocean resources planning and management issues affecting Oregon
3. The membership of the Ocean Policy Advisory Council should be appointed by the Governor as follows:
   - The Governor or Governor's designee
   - Three representatives of the public at large
   - A representative of a conservation or environmental organization with interests in coastal and ocean issues
   - A coastal county commissioner
   - The director or director's designee of the Oregon Coastal Zone Management Association
   - A representative of Oregon Indian tribal interests upon recommendation of the Oregon Indian Services Commission
   - A representative of each of the following ocean users:

     Ports, navigation and transportation industry

     Commercial ocean fisheries, north coast

     Commercial ocean fisheries, south coast

     Charter, sport, or recreational ocean fisheries

     Coastal recreation, non-fishing
   - The director or designee of these state agencies:

     Department of Environmental Quality

     Department of Fish and Wildlife

     Department of Geology and Mineral Industries

     Division of State Lands

     Department of Parks and Recreation

     Department of Land Conservation and Development

     Department of Agriculture

   The Governor should appoint the chair of the Council.
4. The Department of Land Conservation and Development, as Oregon's coastal management agency, should coordinate the activities of the Ocean Policy Advisory Council.

Project Review Panels

Legislative Charge

The 1987 Legislature was concerned that Oregon did not have a clear process to bring together state agencies, local governments, federal agencies and others when reviewing ocean development proposals. The Legislature included the existing state agency coordination requirements as part of the new Oregon Ocean Resources Management Program. ORS 196 requires recommendations for dispute resolution, the role of various agencies and groups in ocean management, and a permanent planning and management process.

Coordination Needs

Oregon's coastal and ocean management programs rely on a network approach to project review and response. Ocean resource development projects, such as intertidal gardens, any proposed artificial reefs, or mariculture facilities, will, therefore, require a coordinated review process among state and federal agencies. In addition, these projects can have onshore consequences which will necessitate participation and coordination with local governments.

Although Oregon agencies already coordinate review of coastal and ocean project proposals, these are often sequential and not integrated into comprehensive project review and assessment. Oregon does not have a reliable interagency procedure to review multi-phased offshore development projects, or to assess subsequent projects related to such proposals.

Experience in California and elsewhere has shown that interagency project review panels are an effective and timesaving means to review, assess, and resolve complex, multiple, or multiphased offshore development proposals. Such panels can coordinate the preparation or review of environmental impact analyses, the development of permits conditions or stipulations. The panels convene as needed, involve all interested parties, and dissolve when project review is completed.

Conclusion

Oregon needs a process to coordinate the review of specific ocean use proposals. Project Review Panels can provide an effective, efficient, and flexible means of assuring that all voices are heard in ocean decisions.

Recommendation

1. The Ocean Policy Advisory Council should, when appropriate, use Project Review Panels (PRP) to address and coordinate the interests of state, federal, and local agencies in specific ocean resource development proposals. A PRP will not have any new or independent authority, but will advise agencies with existing authority.
2. A PRP can be established by the Council upon request of a state agency or affected local government, or upon the recommendation of the Council itself. A PRP should be convened as early as possible in the review process.
3. A PRP is to be used when no other effective mechanism for interagency project review and coordination exists, or when review of a large, complex project or several related projects requires the expertise or authority of several agencies.
4. A PRP is not to be used when the actions under consideration are included in fisheries management plans.
5. Participation on a PRP will be decided by the Council and will:
   - Vary according to the nature of the activity or project being considered;
   - Include all affected parties regardless of their regulatory authority;
   - Include the agency that has principal

decision-making authority over the activity being considered, and other state, federal and local agencies with regulatory, proprietary, or consultative responsibilities;

- Include affected nongovernmental interests as necessary.

6. The recommendations of a PRP are intended to direct subsequent actions of participating agencies related to the project under consideration. Any agency which elects not to accept the recommendation of a PRP shall provide the Ocean Policy Advisory Council with written findings and conclusions to support its position.
7. The functions of a PRP will depend on the nature of the proposed action and the scope of its review. A PRP could:

- Establish requirements for inventory preparation and impact assessments.
- Advise on Goal 19 compliance for permit actions or non-permit actions which could affect marine resources and uses, including proposed legislation, administrative rules, and marine resource management plans and programs.
- Prepare or analyze environmental assessments for Goal 19, environmental impact statements under NEPA, mitigation plans, monitoring programs, and contingency plans.

8. PRP recommendations shall address, where appropriate, permit approval or denial, special permit conditions, operational performance standards, lease stipulations, and mitigation measures.
9. Consistent with state open meeting law, all PRP meetings will be open to the public.

Coastal Local Governments

Legislative Charge

Oregon's Ocean Resources Management Act recognizes the important role played by local coastal governments in Oregon's ocean resources management program. The 1987 Legislature asserted that this ocean program must "coordinate state agency management of ocean resources with local government management of coastal shorelands and resources." The Act requires the ocean resources plan to be "compatible with the acknowledged comprehensive plans of adjacent local counties."

The Act provides for substantial local government involvement in the preparation of the Ocean Resources Management Plan and asks the Task Force for recommendations on the role of local governments in a permanent ocean planning and management process. The Legislature also asked the Task Force to identify issues that affect local government planning programs and describe the work that may be needed to fully address those issues in the local plans.

The Local Government Role in Ocean Management

Local governments have three fundamental roles in ocean resources management.

Participating in Ocean Planning

Coastal local governments should be represented on the proposed Ocean Policy Council by at least two representatives, one from a coastal county and another from the Oregon Coastal Zone Management Association which has members of coastal counties, cities, port districts and soil conservation districts. Membership on the Policy Advisory Council will ensure that local government perspectives continue to be incorporated into long-term planning for ocean resources.

Responding to Proposals

It is essential that coastal local governments, cities, counties, and ports participate on Project Review Panels as they are formed to ensure that local planning concerns, infrastructure responsibilities, and other local issues are fully integrated into the review of ocean projects and actions.

In addition, local governments need the benefit of a clearly defined mandatory consultation process with the Governor on major ocean development activities within the territorial sea, such as for oil, gas, or minerals. The details of this process will need to be defined in the territorial sea plan, refined by the Ocean Policy Advisory Council on an ongoing basis and enacted, if necessary, by the Legislature.

Using Local Plans to Protect Ocean Resources

Coastal local governments should take an active planning and regulatory role for some shoreland uses and activities which affect ocean resources regardless of whether major ocean resource development, such as oil, gas or minerals, is ever proposed.

Coastal counties have long stretches of ocean shoreline with valuable ocean resources. Many coastal cities border on the Pacific Ocean where development decisions can have important consequences for shoreline and coastal resources.

Ocean resource-related issues which local governments should address within comprehensive planning programs include:

- Ocean sewerage outfall siting and design criteria
- Municipal and/or industrial sewerage needs if cities achieve a full "buildout" of land uses within adopted Urban Growth Boundaries

- Shorefront residential development which depend on septic tank sewage treatment
- Beach/shore access, including directing or encouraging access away from sensitive tidepool areas or bird and mammal habitats
- Port facilities for fishing and recreation vessels as well as for other industrial needs related to offshore oil and gas or minerals
- Shoreline "protection" measures, such as seawalls
- Protection or nondevelopment of shore areas susceptible to erosion, slumping or sliding
- Protection of ocean vistas and views in developing areas and along major arterials
- Protection of special marine bird and mammal habitat sites where upland development may encroach on or degrade valuable habitat
- Recreation areas and facilities, traffic and visual issues, relationship of private development to park and recreational values
- Education and interpretive centers and their relationship to community development goals, tourism image, etc.

Revenue to Coastal Communities From Ocean Development

If oil, gas, or mineral mining were ever to occur, coastal local governments would receive very little direct revenue from offshore development under existing law. Oil, gas and mineral leasing and development within Oregon's Territorial Sea would yield rents, royalties and other fees which would go to the state Common School Fund administered by the State Land Board. Under existing law, these funds go to support education and are allocated on a statewide basis.

Oregon would receive some revenue from oil, gas, or mineral leasing and development in the three miles of federal waters adjacent to the state Territorial Sea. Within this three-to six mile zone, Oregon would receive 27 percent of royalties under the Outer Continental Shelf Lands Act. Exactly how this money would be received by the state and allocated to state programs, local governments and coastal Indian tribes has not been decided by the state.

Local communities often bear the burden from providing necessary onshore services to support offshore development. Local residents and governments are not willing to add to demands on already stretched local tax revenue if there is no offset in direct return to the local tax base. Oregon will need to squarely address the issue of allocation of revenues from offshore development to affected local governments if oil, gas, and mineral development is ever permitted in the ocean off Oregon.

Conclusions

Oregon's coastal local governments are essential partners with state and federal agencies in ongoing planning and management of ocean resources and must continue to be full participants in Oregon's ocean resources management program.

Coastal local governments can take an active role in protecting certain ocean resources by using land use plans and ordinances to regulate shoreline and upland land or water uses which may adversely affect ocean resources.

Local communities can be adversely affected by offshore development of oil, gas, or mineral resources without the financial means to offset added costs born by the community.

Local governments need the assurance of a clearly defined consultation process with the governor on certain ocean activities within the territorial sea.

Recommendations

1. Local governments should be represented on any ocean policy advisory body and, as appropriate, on Project Review Panels.

2. Coastal cities and counties should review ocean shoreline marine resources and existing and planned development within their jurisdiction. Comprehensive plan policies and ordinances should be amended as necessary to protect these ocean resources consistent with Statewide Planning Goal 19.
3. Coastal local governments should also review comprehensive plan goals, policies and implementing measures with regard to ocean uses and resources which may affect onshore development. Local government will need to develop a policy basis for effective participation on the Ocean Policy Advisory Council and Project Review Panels.
4. Local governments should use their citizen involvement program as a vehicle for ensuring citizen participation in land use issues which may effect ocean resources.
5. Oregon law should be amended to provide local governments, including Indian tribes as appropriate, with a share of revenues derived from any future offshore development of oil, gas, or minerals, should it ever occur.
6. Oregon should use state General Funds and seek federal funds to assist local governments to participate in ocean resources planning and management.
7. The territorial sea plan should include provisions for mandatory local government consultation with the Governor on permits, leases, licenses, and other approvals for commercial oil, gas, and minerals exploration and development, should this ever occur.

State Agency Programs

Legislative Charge

One of the principal objectives of the Oregon Ocean Resources Management Act is to assess the existing capability of state agencies to manage ocean resources and to recommend improvements to meet coming needs. The legislation requires that the Ocean Plan include "an inventory of the existing state laws and agency rules, authorities and programs which pertain to ocean resources." The plan is to include an analysis of state laws and agency programs that need to be modified, eliminated or enacted.

The Act requires that the Ocean Resources Management Plan include "specific recommendations to develop or improve state agency programs to manage ocean resources and activities consistent with this 1987 Act."

Inventory and Analysis of Agency Programs

The *Territorial Sea Management Study,* 1987, prepared by co-investigators Jim Good, Oregon State University College of Oceanography, and Dick Hildreth, University of Oregon Ocean and Coastal Law Center, compiled and analyzed Oregon's ocean management capabilities and needs. This study is hereby referenced in response to legislative requirements.

The *Interim Report* of the Task Force, summer, 1988, contained a summary of existing agency authorities and programs for ocean resource management. This summary is hereby referenced in response to legislative requirements.

Agency program needs, based on recommended Task Force policies and needed actions, are summarized in this section. These program needs are described more fully in the *Resource Issues and Recommendations* section of this plan.

Conclusions

No new state agency is needed to manage ocean resources. Oregon's network management approach to ocean and coastal resources, coupled with a strong coordination mechanism through the Ocean Policy Advisory Council and the governor, is appropriate to handle ocean resource issues.

Most state agencies need to strengthen or expand ocean or coastal resource programs and staff capability to carry out the recommendations in this plan. Legislative support is needed for these program improvements.

Some legislative changes are required to clarify or add agency authority or improve state programs.

Recommendations

Agency program improvements are summarized here. More detailed recommendations are found throughout the section on issues and recommendations, above.

Department of Fish and Wildlife (ODFW)

ODFW is the agency charged with the direct management of a number of the ocean's renewable resources. ODFW is also the state's primary biological consultant for other agencies and the governor.

As recommended in this plan, ODFW should take an increasing role in planning for the territorial sea, resolving specific management problems, and providing technical assistance to other agencies. To accomplish this, ODFW will need to expand staff capability to meet these coordination and technical assistance needs. ODFW will participate in marine water quality monitoring, oil spill contingency planning, marine gardens to protect intertidal areas, bird and mammal habitat around rocks and islands, environmental studies related to any potential proposals for marine minerals, oil

and gas exploration, marine parks, and public information and education.

Department of Environmental Quality (DEQ)

DEQ is responsible for developing comprehensive plans, programs, standards, and administrative rules for preventing and controlling air and water pollution, disposal of liquid, solid and hazardous waste, and controlling noise emissions from facilities both onshore and in the territorial sea. DEQ has the lead role for Oregon in preparing an oil spill contingency response plan for the Oregon coast as required under 1989 legislation.

To fully address continued ocean planning and management issues, DEQ will need additional resources. New air and water quality programs are needed. DEQ should coordinate preparation of an Ocean Stewardship Area Air and Water Quality Program, and be a key participant on the Ocean Policy Advisory Council during preparation of the territorial sea plan.

Department of Geology and Mineral Industries (DOGMI)

DOGMI is charged with coordinating data acquisition and analysis for geology, minerals and petroleum resources. DOGMI would be Oregon's principal agency for regulating any offshore mineral or petroleum activities, if they were to occur. DOGMI is the coordinating agency for the state-federal placer task force and can be expected to play a similar role in any future state-federal marine mineral studies.

This plan recommends that DOGMI participate on the Ocean Policy Advisory Council. DOGMI would provide technical assistance on marine geology, shoreline erosion, subsea geologic hazards, and marine minerals during preparation of a territorial sea plan. DOGMI will continue to provide technical advice to the Oregon member of the Pacific Northwest OCS Task Force.

Department of Energy (ODOE)

ODOE manages the computerized geographic information system (GIS) being developed for ocean resources. ORS 196 requires that information to support Oregon's ocean plan be developed in a GIS format. ODOE, as the state GIS service center, has made substantial progress in acquiring and entering coastal and ocean information into the system.

The ODOE GIS would will provide the Ocean Policy Advisory Council with information and analysis to develop specific recommendations in the territorial sea plan. In addition, the GIS will support interagency efforts on marine minerals, marine gardens, bird and mammal habitat, shoreline erosion, ocean outfalls and others. Data acquisition and refinement of the GIS will be ongoing within ODOE, coordinated with DLCD and other agencies. ODOE is not recommended as a member of the Ocean Policy Advisory Council.

Division of State Lands (DSL)

DSL is unique among state ocean resource agencies because it has both proprietary and regulatory interests within the territorial sea. On behalf of the State Land Board, DSL carries out the constitutional mandate to manage lands under its jurisdiction with the objective of "obtaining the greatest benefit for the people of this state, consistent with the conservation of this resource under sound techniques of land management." (Oregon Constitution, Art.III, Sec.5(2))

DSL has statutory authority to enter into contracts, leases and other proprietary agreements, in consultation with other agencies, for exploration and development of marine hard minerals, oil, gas, sand and gravel. DSL also issues permits for geological, geophysical and seismic surveying within Oregon's territorial sea. Any fill or removal activity within the territorial sea is also under DSL's regulatory authority.

As a member of the Ocean Policy Advisory Council, DSL would continue to play a central

role in preparing a plan for ocean resources in Oregon's territorial sea.

DSL will also be particularly involved in marine mineral issues and other issues, such as Marine Gardens, which relate to the allocation of submerged and submersible lands and their resources.

Parks and Recreation Department (Parks)

Parks effectively shares jurisdiction over the ocean shore, from the level of extreme low tide to the statutory vegetation line, with DSL under a joint permit notification and evaluation agreement. Parks is responsible for planning for recreation throughout Oregon and with developing and managing state park facilities along the Oregon coast.

Parks should be a member of the Ocean Policy Advisory Council and continue to participate in planning for the nearshore area within Oregon's territorial sea. Parks will be the lead agency in assessing coastal and marine recreation needs and developing plans and programs to meet growing recreational demands on the coast, including marine parks and educational and interpretive programs.

Department of Land Conservation and Development (DLCD)

DLCD, Oregon's coastal management agency, is charged by the Legislature with coordinating ocean planning activities and providing technical and support services to the Task Force. In that role, DLCD actively coordinates with all other state agencies, local governments, and federal agencies on virtually every issue. The agency also provides staff assistance to the governor on OCS and other state-federal ocean policy issues.

DLCD would be both a member of and provide staff support to the Ocean Policy Advisory Council during preparation of a plan for the territorial sea. DLCD will continue to coordinate Oregon's ocean plans and policies as Oregon agencies carry out the plan and implement new ocean programs.

In addition, DLCD will be responsible for adopting rules to carry out Statewide Planning Goal 19, Ocean Resources. These rules will be crucial to determining both process and substance of agency review of proposed activities which affect ocean resources.

Department of Agriculture (DOA)

DOA was added to the Ocean Resources Management Task Force by the 1989 Legislature because of strong interests in ocean seafood products. DOA coordinates three seafood commodity commissions, the Oregon Salmon Commission, the Dungeness Crab Commission, and the Trawl Commission. DOA also regulates oyster production in Oregon's estuaries.

DOA is proposed as a member of the Ocean Policy Advisory Council and will be a liaison between Oregon's ocean resources management program and the seafood industry.

Economic Development Department (EDD)

EDD was added to the Ocean Resources Management Task Force by the 1989 Legislature because of interests in Oregon port development as well as the overall economic health of Oregon's economy.

EDD should continue to participate in Oregon's ocean planning and management but is not recommended as a member of the Ocean Policy Advisory Council.

Interstate Coordination

Legislative Charge

The 1987 Oregon Legislature found, in the Ocean Resources Management Act, that "it is important that the State of Oregon...promote and insure coordinated management of living and nonliving marine resources within state jurisdiction and with adjacent states..." The Legislature also asked for recommendations on coordination with adjacent states.

The 1989 Oregon Legislature specifically required Oregon to coordinate with the states of Washington and California on ocean resource management issues. This legislation requires Oregon agencies to coordinate on ocean and coastal information systems, oil spill and hazardous material response, offshore rocks and islands, and marine fisheries information.

Ecological Basis for Interstate Coordination

The Pacific Ocean, its ocean currents and living resources, links the states of Washington, Oregon and California coasts. For much of the year the California Current flows southward. In winter, however, storms push surface currents northward near shore. These strong currents can transport pollutants from one region to another. Oil spilled at Yaquina Bay in fall, 1983, was strewn northward along the Oregon and Washington coasts. An oil spill off Grays Harbor, Washington, in late 1988 resulted in oiled beaches from Tillamook Bay north to the tip of Vancouver Island.

Young salmon from Oregon rivers pass through waters off Washington, British Columbia and Alaska. Pacific Hake spawn off central and southern California but are an important commercial fishery off the Oregon and Washington coasts. Marine mammals, such as Gray whales and California sea lions, migrate along the entire west coast as do several species of seabirds.

The ocean off Oregon is a small segment of a much broader oceanic region. These regional aspects to ocean resources require a regional perspective for resource management. A 1989 Oregon Department of Fish and Wildlife report, *Management of Living Marine Resources*, identifies the northern Californis Current ecosystem as "...the appropriate unit of management." This region extends from Cape Mendocino, California, to Vancouver Island, British Columbia.

Existing Coordination

Oregon agencies and the Governor already coordinate with other states on several ocean issues. These include such formal mechanisms as participation in the Pacific Fishery Management Council with California and Washington, the Pacific Northwest OCS Task Force with Washington, the U.S.-Canada Halibut Treaty and an oil spill task force with Washington, British Columbia and Alaska. Governor Goldschmidt and Washington Governor Gardner have closely coordinated their position on OCS Lease Sale #132, sending joint letters to the Secretary of the Interior. Other more informal methods include newsletters, conferences and workshops, and information sharing among counterpart agencies.

Coordination Needs

The National Coastal Resources Research and Development Institute (NCRI) has studied the interstate coastal and ocean management needs of the Northeast Pacific Ocean. Coordination issues were a principal topic. Interstate ocean concerns included ocean oil transport, uniform standards for ocean oil and gas development, offshore mining, reducing marine pollution and debris, state ocean management, and needed ocean research.

New Interstate Coordination Proposals

As Pacific coast states become increasingly involved in ocean resources management issues, more formal regional coordination structures may be proposed. The Western Legislative Conference, an organization of western state legislators, is working on a proposal for an interstate compact, including British Columbia, for ocean resources management among Pacific coast states. The Western Governors Association may also form an ocean resources committee. This would strengthen the commitment and practice of coordination at the highest state policy levels.

Conclusions

The fluid, dynamic nature of the Pacific Ocean and the mobile, migratory creatures that live there make it imperative that Oregon enhance its ocean resources management program through coordination with adjacent coastal states. Oregon must take advantage of every opportunity to promote regional solutions to issues which Oregon has in common with other coastal states.

Recommendations

1. The Governor and Oregon's Congressional delegation should support regional solutions to ocean resource management issues when possible.
2. Oregon should participate in regional organizations and other formal interstate agreements to protect and manage ocean and coastal resources.
3. State agencies are encouraged to establish program links to counterpart agencies in other states and to participate in interstate projects where possible.
4. The Oregon Legislature should support proposals for a Pacific states regional marine resources coordination body which supports and enhances the policies and programs of Oregon's Ocean Resources Management Program

State-Federal Partnership

Legislative Charge

The 1987 Oregon Legislature was especially interested in a state-federal partnership for managing ocean resources off Oregon. The Ocean Resources Management Act cited three existing federal laws which "recognize the interests of coastal states in management of ocean resources in federal waters and provide for state participation in ocean resources management decisions." The three are the Magnuson Fisheries Conservation Act of 1976, the Coastal Zone Management Act of 1972, and the Outer Continental Shelf Lands Act of 1978.

The Legislature noted that

> *. . . the 1983 Proclamation of the 200-mile U.S. Exclusive Economic Zone has created the opportunity for all coastal states to more fully exercise and assert their responsibilities pertaining to the protection, conservation and development of ocean resources under United States jurisdiction.*

The 1987 Act includes a Legislative policy to:

> *Assert the interests of Oregon as a partner with federal agencies in the sound management of ocean resources within the U.S. Exclusive Economic Zone.*

The Act includes several directives to the Task Force to "insure that the Oregon Ocean Resources Management Plan is coordinated with federal agency programs for coastal and ocean resources..." In fact, the contributions of several federal agencies have shaped a number of policy and program recommendations in this Ocean Plan.

An Ecological Basis for State-Federal Partnership

The Oregon Ocean Stewardship Area, discussed earlier, is the ocean area most critical to a cooperative state-federal management approach. The seaward boundary, the toe of the continental slope, reflects the seaward extent of the Ocean Stewardship Area, the zone off Oregon where the marine resources and ocean conditions are naturally linked to the landward portion of the coastal zone. Within this region productive upwelling supports productive marine ecosystems, the basis for Oregon's commercial and recreational fisheries. Seabirds and marine mammals from rookeries on rocks and cliffs nearshore feed all across the Stewardship area.

The ocean and its public resources are not contained by boundaries drawn by states and nations to establish ownership and jurisdiction. Oregon's ocean resource management interests clearly extend beyond the three-mile territorial sea while federal agencies have programs and authorities for resources and activities within Oregon's territorial waters. Protection of ocean resources therefore requires co-management by the state and federal governments through coordinated, complementary policies and programs. Among these policies is a commitment to a partnership in ocean management.

Existing Coordination

Oregon and federal agencies already coordinate on a number of ocean resource issues. The Oregon Department of Fish and Wildlife is a member of the Pacific Fishery Management Council along with other states, the Department of Commerce National Marine Fisheries Service and others. Oregon is a member of the Pacific Northwest Outer Continental Shelf Task Force along with Washington, Indian fishery commissions, and the Department of the Interior Minerals Management Service. The U.S. Fish and Wildlife Service and the Oregon Department of Fish and Wildlife coordinate on marine seabird and mammal problems. The Oregon Department of Environmental Quality and the U.S. Environmental Protection Agency cooperate on several relevant ocean programs. A state-federal placer mineral task force involves several state and

federal agencies. The Department of Land Conservation and Development works with the federal office of Ocean and Coastal Resource Management to develop coastal management grant work programs for Oregon.

Existing coordination between state and federal agencies can be enhanced by a commitment from both state and federal agencies to common policies, objectives and process. This Oregon Ocean Resources Management Plan provides a framework for both state and federal agencies to cooperate in managing ocean resources and uses off the state of Oregon.

Conclusions

Oregon and federal agencies must establish a resource management partnership that provides for coordinated, compatible management of ocean resources throughout the Oregon Ocean Stewardship Area.

For most ocean resource issues studied by the Task Force, there is a high degree of existing cooperation and coordination between state and federal programs.

Federal agencies will continue to participate in planning for ocean resources of the Oregon Ocean Stewardship Area.

The objective of state-federal cooperative management of ocean resources should be ecologically sound decisions rather than merely streamlining agency procedures.

Recommendations

1. The state of Oregon should assert the principle of jointly managing ocean resources and uses with the federal government.
2. The policies and standards of the Oregon Ocean Resources Management Plan apply equally to all activities in the Oregon Ocean Stewardship Area.
3. Federal agencies with research, management, or regulatory interests in ocean resources in the Oregon Ocean Stewardship Area are encouraged to participate with the Ocean Policy Advisory Council, Project Review Panels, and individual state agency programs which implement this plan.

Information and Education

A recurrent theme heard throughout the ocean planning process is the need to acquire and effectively distribute information which will help coastal residents, visitors and ocean users ptotect Oregon's ocean and coastal resources. Information which is clear, easy to learn, and understandable is a key to enhanced public awreness, knowledge and support for ocean stewardship.

Oregonians realize that while enforcement of regulations is important, the most effective means of protecting and conserving a number of marine resources is through an effective public information program. With this perspective, many recommendations for action in the Ocean Plan call for information programs and educational activities in response to these needs.

The Audiences

There are many special information needs which can can be distilled to three principal audiences:

Public

At public workshops held during preparation of the Ocean Plan, Oregonians were emphatic that enforcement alone will not protect coastal and ocean resources. They spoke with concern about growing numbers of residents and visitors on the coast who know little about Oregon's coastal and ocean resources and who, through their actions, unknowingly place these resources at risk.

Users

The workshops also revealed that ocean users need additional education and information about resources that may be affected by their activities. Better information about potential conflicts with other ocean users is also needed. With better information and increased understanding some resource impacts can be lessened and user conflicts avoided without the need for additional regulations.

Managers

Oregon's ocean and coastal resources may be properly managed when those who make decisions at the federal, state and local level are knowedgable about the ocean's condition, resources, and uses. While the depth of knowledge may not need to be the same for everyone, a basic level of understanding is essential to assess information and make sound decisions.

Building a Public Information Program

A good public education program should focus on the audience and its information needs, the information and materials to meet the needs, and ways to deliver the material to the audience.

Potential audiences are described above as the "public," ocean "users", and "decision makers." In reality, these audience groupings have a number of components including visitors to the coast, whether tourists from afar or Oregonian, school children of all ages, and new coastal residents, many of whom specifically chose to move to the Oregon coast because of the environment. Decision makers include coastal local officials, Ocean Policy Advisory Council members and other state and federal agency officials and councils whose decisions may affect marine resources. Boaters, divers, fishermen, and other ocean users would benefit from information about new techniques to help protect resources.

The information content of various educational materials must be tailored and packaged to meet the need of the audience. Some content will be purely factual information which identifies and describes through photos, drawings, and description. Much will be interpretive to give meaning to factual information through displays, signs, booklets, and videotapes. Some may be instructive and build understanding through a coordinated program of education and training. A small amount may need to warn of danger or admonish against certain behavior.

Information is made available to the intended audience through a network of distribution pathways and outlets. Opportunities for distribution are almost limitless. Coastal restaurants might use informative placemats on tables. Highway lookout points could have self-guiding signs or displays. State and local parks could distribute printed information or hold evening education programs. Coastal cable channels could offer short video programs for visitors and residents on marine topics. Libraries and schools are logical outlets for information and educational materials. Marine Extension agents and local government offices are also outlets for information.

Oregon's Information Resources

Oregon has most of the necessary resources to build a coastal and ocean resources education program. These resources need to be harnessed into an overall information program and strategy.

Citizens

Citizens are a valuable resource for information, interpretation and education. They can define need, help gather information and prepare materials,and provide pathways for distribution. Several workshop commenters pointed out the success of local citizen interpretive and education programs, such as the Haystack Rock Awareness Program in Cannon Beach, in protecting shoreline areas threatened with overuse. Other examples were cited of coastal residents taking action to rally community support for protection of valuable shoreline areas and of grassroots efforts to learn about and inform the public of Oregon's ocean resources that may be at risk from offshore oil, gas, or mineral development.

Academic Institutions

Oregon State University Sea Grant Program, with its Marine Extension Program and

activities at the Hatfield Marine Science Center in Newport, is Oregon's leading ocean information and education program. The Sea Grant Extension Marine Education Program works with school teachers from around the Northwest to develop curriculum materials for students of all ages. The Sea Grant Communications Program produces a wide range of print materials on ocean and coastal topics and produces top quality films for television broadcast and closed circuit viewing. Special summer programs are sponsored by the Marine Science Center for the public on the coast, many of whom are vacationing and want to learn more about Oregon's marine environment. The public exhibits as the Science Center draw over 300,000 visitors annually and are evidence of keen public interest in the ocean. Marine Extension agents provide technical and management information to ocean users, primarily commercial and recreational fishermen and seafood processors.

State Agencies

Several state agencies must continue to be active participants in building an ocean and coastal information and education network. The Oregon Parks and Recreation Department maintains the many state parks and campgrounds along the coast. This network of parks is a ready means of distributing information along the entire coast or providing interpretive materials aimed at the park locale. The Department of Fish and Wildlife has a strong interest in communicating information about biological resources of the coast. ODFW also need to ensure that fishing and other regulations are well known and understood. The Department of Environmental Quality provides information to the public and specific groups about air and water quality protection. The Department of Land Conservation and Development, Oregon's Coastal Management Agency, has a special responsiblity to make sure that a wide range of coastal and ocean resource information is prepared and distributed.

Federal Resources

The U.S. Forest Service already provides a good deal of information and interpretation through the Cape Perpetua Visitors Center and the Oregon Dunes National Recreation Area. These and forest campground facilities along the coast are resources to be included in an information program. The U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Coast Guard, and Corps of Engineers have information programs for resources or activities within their jurisdiction. These agency programs would provide valuable components and resources for a coastal and ocean information program.

Community Programs

Local information centers, such as the Rogue Pacific Center in Gold Beach, provide local communities with educational materials and programs year-round and help both residents and visitors understand and interpret the natural and human environment of the local area. The Haystack Rock Awareness Program in Cannon Beach has become a model for local interpretive programs. These programs not only develop information materials but provide a direct outlet for the materials to effectively meet specific needs. In addition, local progrms create a climate of awareness and appreciation of local marine resources.

Other public resources include the South Slough Estuarine Reserve information center near Coos Bay, the Columbia River Maritime Museum in Astoria, and the new Oregon Coast Aquarium in Newport. Coastal county parks, such as the Coos Head County Park in Coos County, are potential elements of a coastal and ocean resources education program. Community seafood festivals Newport, Astoria and other communities are distribution opportunities.

Private Facilities

Privately operated coastal visitor centers, such as Sea Lion Caves and Otter Crest, are potential participants in a coordinated program

of marine information and education. Long a part of the Oregon travel landscape, these and other private centers reach a segment of the traveling population that might otherwise be missed. In addition, coastal motels, restautants and local visitor information centers are focal points for information distribution.

Conclusions and Recommendations

Oregon should place a high priority on informing and educating Oregonians and coastal visitors about coastal and ocean resources and uses as an effective means of protecting these resources.

Oregon has many valuable individual educational and informational resources ready to contribute but lacks a coordinated coastal and ocean resources education program.

A coastal and ocean resources public information and education program should be comprehensive and innovative, should place a high value on involving the public in the creation and delivery of information, should link public and private participants, and should respond to needs of ocean users and decisions makers when necessary.

The goal of an ocean and coastal education and information program should be an "ocean aware" public.

Recommendations

1. A coordinated, innovative and responsive Coastal and Ocean Resources Educational Program should be developed by the Ocean Policy Advisory Council to link the various educational and information resources of the state, provide timely and appropriate information and education materials, and involve the public in promoting protection of coastal and ocean resources through awareness.
2. Oregon State University Sea Grant and Sea Grant Extension should be the lead agency for implementing this program. Cooperating agencies should include other Sea Grant units, various state and federal agencies, and community groups and individuals.

Citizen Involvement

From the beginning, the Task Force has been committed to citizen involvement and an open public process. As a first order of business the Task Force set a goal of providing the public opportunities to be involved in all phases of developing the Ocean Plan. A newsletter was begun, a mailing list compiled, and media contacts made. While the Task Force was not able to carry out all possible participation activities, the goal was largely achieved by a public outreach program that included printed information, local workshops, and open Task Force meetings.

Developing the Ocean Plan

Many Oregonians helped shape the Ocean Plan. They participated in workshops, public hearings, and Task Force meetings. They wrote letters of comment and telephoned with ideas and concerns. They asked tough questions that caused critical rethinking of issues. They spoke in support of key ideas and proposals. Although many people worked with the Task Force on the Plan and hundreds of others read materials sent by mail, there were more citizens who were not fully informed about the process or why it was important to be involved. Increasing public awareness and involvement is a goal of this Plan.

Workshops and Meetings

In the fall of 1988, eight public workshops were held in Brookings, Coos Bay, Florence, Newport, Cannon Beach, Portland, Eugene, and Medford. Over 200 people attended to tell the Task Force of their concerns, needs, and ideas about the ocean and its resources.

The Task Force then met in a series of six meetings to address these concerns and begin to formulate preliminary recommendations for policy and action. These meetings were held in a variety of locations and were well attended by the public. Meetings were held through the spring and summer, 1989, in Charleston, Newport, Salem, Portland (2), and Lincoln City (2).

In September, 1989, Task Force staff met

with fishermen and urchin divers in meetings in Gold Beach, Newport, and Astoria. These meetings resulted in discussions with over 100 people directely involved in a variety of ocean fisheries. Then in November, 1989, 800 copies of draft plan policies were printed and distributed by mail and through public libraries and courthouses. These policies were reviewed and discussed at four public workshops held in Gold Beach, North Bend, Lincoln City, and Cannon Beach. Over 300 people attended and over sixty written comments were received.

In response, the Task Force met in February, 1990, for two days in Newport and in March in Portland to consider the comments and make revisions to the plan recommendations. These meetings resulted in a revised draft for public hearings in May, 1990.

Throughout the planning process, Task Force members and staff spoke to a variety of organizations, groups, and school classes about the Oregon Ocean Resources Management Program

Videotapes

All Task Force meetings and public workshops were videotaped. These tapes provided a "realtime" record of presentations, comments, discussions and decisions. Tapes will continue to be available as an archive record for future reference. These tapes also provided the Task Force and staff with a means of seeing and hearing meetings and discussions which needed to be reviewed as part of on-going policy discussions. Task Force members unable to attend specific meetings or workshops were able to see and hear a clear record of events. This was an invaluable technique to preserve comments and ideas for incorporation into the Ocean Plan.

Future Citizen Involvement

Full public involvement in ocean resources issues is crucial. The ocean and its resources belong to the public, many of whom are already involved in or support conservation efforts for coastal resources and even more who enjoy the ocean and coast on a personal basis. The public has vital information to contribute to the process. Knowledge of local conditions, issues,and resources will keep state level planning and management programs rooted in the real world. Public involvement will help engender overall awareness of coastal and ocean issues. This public awerness will translate into support among local government officials, the Legislature, the Governor and Oregon's Congressional delegation, all of whom are able to enact or effect programs which carry out the goals and policies of this Ocean Plan.

This Ocean Plan recognizes that citizens can and should continue to be involved in ocean planning and management. Three elements are proposed for ongoing involvement:

First, as proposed, the Ocean Policy Council would have many public members. Some would represent the public at large, others would represent groups that are vitally interested in using ocean resources and conserving them for continued use and enjoyment. This public representation at the policy level will set the tone for other public participation activities.

Second, the information and education programs proposed in this plan, if carried out, would provide essential information to create public awareness of ocean and coastal issues and set the stage for public involvement.

Third, a coordinated program of public outreach in conjunction with on-going Ocean Policy Council activities and discussions is necessary. The proposed process for a territorial sea management plan should have a high public participation quotient, including workshops, newletters, visual media, and speakers. Citizens should be invited and welcome at Policy Council meetings.

Recommendations

1. The Ocean Policy Advisory Council should commit itself to full citizen involvement during preparation of a plan for Oregon's

territorial sea and should prepare and implement a program that provides information to citizens about planning and management issues and provides opportunities for citizens to be involved in all phases of the ocean resource planning process.

2. The Oregon Legislature should provide the resources to the Ocean Policy Advisory Council to carry out a vigorous program of citizen involvement.
3. Citizen involvement efforts should be linked to a program of public information and education as recommended in this plan.

Ocean Research

Accurate information is essential for sound resource management decisions. Decision makers will need additional information for virtually every topic addressed in this plan. Difficult research questions remain to be answered. What topics or areas need study first? When are secondary topics studied? How to coordinate among various researchers? Where to find funds for rather expensive studies? How does Oregon organize and use information?

While experts in various scientific disciplines will probably differ on the exact nature of necessary research, there is broad agreement on existing data gaps and long-term research needs. A list of information gaps is listed in a following section based on results of a Northwest OCS Environmental Studies Workshop-Conference sponsored by Minerals Management Service in May, 1988, and on information needs identified during policy discussions for preparing the ocean plan. Other research needs have been identified in this Plan related to various ocean activities and uses other than OCS oil and gas. Together, the items on the list form the basis for determining research needs for ocean management in Oregon.

Additional marine research is needed everywhere in the Oregon ocean planning area. However, because the level of management of an area or resource determines the need for marine science information, three areas can be identified off Oregon which have somewhat distinct management demands and consequent research needs.

- First, the resources of the nearshore fringe of rocks, islands, intertidal areas and estuary mouths along the coast are heavily used and especially at risk. There are numerous existing management problems and more can be expected. Information needs here are the most "fine-grained" or site-specific and will be felt most acutely by state management agencies. This is an area for which Oregon ought to provide primary research support.

- Second, Oregon's continental margin, an Ocean Stewardship Area, is an area where a high degree of resource management will be needed and for which information needs are great. Research will be needed by both state and federal agencies to fulfill co-management responsibilities. Research ought to come primarily from federal sources and programs but Oregon should also provide support to continental margin research.
- Third, west of the continental margin to the boundary of the 200 mile EEZ, management needs will be fewer and, consequently, so will the amount and precision of marine resources information. In this area federal agencies will have the primary need for research and therefore should be the primary funding source.

A Strategy for Research

It is extremely difficult, and probably not useful, to establish a strict priority list of needed studies. There are simply too many variables, such as a wide range of research needs and study topics, a diversity of funding sources, variability of time required for each study, the nature of specific management issues, the unforeseen results of research and subsequent new research needs.

For instance, OCS oil and gas decisions will require a relatively high level of information to identify areas and resources and risk and special conditions that must be considered across the entire continental shelf and along the entire coast. The area-wide planning approach of the U.S. Department of the Interior and the potentially widespread effects of oil spills demands that broad assessments of ocean circulation and biological resources are needed. However, information needs for marine mineral decisions will be different. Mineral areas are more closely known, and the environmental and biologic resources in the area can be more readily studied in order to understand specific potential adverse effects. Therefore, more focused sub-regional studies of ocean conditions and resources are also needed.

Oregon can take specific steps to establish an ocean resources information management program so that research recommendations can be made on an annual basis and as a management problem arises and so that information can be integrated into a computerized ocean information system.

Strategic Assessments: Continental Margin

The first step for Oregon is to prepare comprehensive assessments of ocean resources, conditions and uses of the continental margin as a starting point for making ocean resource management decisions and for identifying specific research needs for management. Assessments would use existing information to describe, depict and characterize the physical environment, biotic environment, living marine resources, economic activities and environmental quality of the Pacific Ocean off Oregon and adjacent coastal areas. Assessments would provide a "strategic" context for ongoing planning and for identifying needed information for site-specific "tactical" decisions.

Strategic assessments of Oregon's ocean should follow up the *West Coast of North America Strategic Assessment Atlas* being prepared by the Office of Oceanography and Marine Assessment, National Oceanic and Atmospheric Administration (NOAA). Assessments should be prepared from digital information and displayed in atlas format at a level of detail necessary for most planning and management decisions off Oregon. This computerized geographic data base could also be displayed at higher resolution if needed for a management situation and warranted by the available information.

Oregon should rely on existing data and expertise among NOAA, EPA, and other federal agencies for development of these assessments. Oregon should expand its fledgling ocean

resources information management capability through Interagency Agreement between NOAA, MMS and other contributing federal agencies and the Oregon Department of Energy Geographic Information Service Center. This would allow the Ocean Policy Advisory Council and state agencies access to tremendous data bases and to target the information on analysis of specific management questions.

If possible, Oregon's strategic assessments should be carried out at as part of a regional level assessment, from Cape Mendocino to Vancouver Island. This relatively discrete biogeographic region provides an ecological basis for describing and understanding Oregon's ocean systems.

Broad-Scale Descriptive Studies

Broad-scale studies provide basic information from which more specific information needs can be determined when management problems are presented. These studies are not just "blue-water" scientific exercises; they are fundamental to understanding complex ocean interactions that can directly effect management decisions. In addition, they provide crucial baseline information against which decisions can be analyzed and long-term effects assessed.

There are broad data gaps in oceanography, marine ecology, ocean chemistry, geology and social/economic conditions in the region. These study needs are identified below. Some of these studies, such as ocean circulation off the southern Oregon coast, have never been conducted. Others, such as marine productivity studies, are now possible through satellite technology and remote sensing. These broad studies represent major ocean research challenges and opportunities for Oregon State University, NOAA and other oceanographic institutions.

Because it is unlikely that funds will be available for multi-year broad-scale studies at the level of effort required, a number of smaller more focused studies may be needed to progressively develop information which, when added over time, will fill in the broad-scale picture. Information from these studies will update the strategic assessments, above. This is a task for the Ocean Policy Advisory Council, below.

Focused Research

Management decisions usually target on a specific site or resource. Oregon's Goal 19, *Ocean Resources*, requires that decisions affecting ocean resources be supported by scientific inventory information with particular attention to analysis of impacts of the decision on renewable marine resources. Focused research will often be necessary to meet the requirements of Goal 19 when a specific project is proposed.

In many cases, focused research needs will be revealed when specific problems or decisions are presented, the existing information base is analyzed and specific data gaps are identified. These studies will be especially necessary for proposals for nonrenewable resources and uses such as OCS oil and gas and marine minerals, ocean disposal of wastes, etc. Focused research may also be necessary when artificial reef or mariculture proposals are presented.

Primary responsibility for funding focused research will fall to the private developer but study design and work will be closely supervised by affected public agencies. Oregon should create a mechanism by which private funds can support needed marine research work in the public domain.

Major Information Gaps and Research Needs

The Oregon Ocean Resources Management Act requires that the Task Force recommend

> *Environmental and other scientific research required to make management decisions about ocean resources with an emphasis on the information requirements of the statewide planning goals for ocean and coastal resources in relation to the oil, gas and mineral development activities of the Federal Government in the Exclusive Economic Zone off Oregon*

The Task Force has received recommendations for needed research topics from the Technical and Scientific Advisory Committee, university researchers, and state and federal resource agencies. These research needs are summarized below.

Physical Features Base Map

- Detailed bathymetry of bottom features within Oregon's Territorial Sea, including offshore rocks submerged reefs, in digital format
- Detailed bathymetry of specific features and areas of the continental margin such as Heceta-Stonewall Banks, Rogue and Astoria Canyon

Physical Oceanography

A major step has been taken toward understanding the state of knowledge of ocean circulation in the Pacific Northwest. The Minerals Management Service has completed a study entitled *Coastal Circulation Along Washington and Oregon* as part of its OCS Environmental Studies Program. A conference of researchers from all major oceanographic research institutions and agencies was held in Fall, 1988, and a three-volume report has been published. The following research needs were identified by participants.

- Data on near-surface (0-20 meters deep) and nearshore (from shore to the 50 meter isobath) currents are very limited and there is little information on estuarine/ocean exchange processes
- Early studies of the Columbia River Plume were unable to complete a three dimensional characterization of plume dynamics
- Data on bottom boundary layer currents and sediment transport along the bottom are limited
- The extent of circulation exchange between the waters on and beyond the continental shelf has not been determined
- Topographic effects of specific features such as the Cape Blanco and Heceta Bank are unknown
- There is virtually no circulation data south of Newport, where Heceta Bank lies in a transitional area between two oceanic circulatory regimes
- Interannual variability in circulation patterns on the continental shelf and in nearshore environments is not well researched
- Temperature, humidity, and wind measurements across the continental shelf are sparse. Paired temperature and salinity observations are limited in much of the region off Oregon and Washington

Biology/Ecology

- Productivity data for the waters off Oregon and Washington are old; very little data have been gathered in the last 20 years
- The effects of spilled oil and increased turbidity on primary productivity is unknown
- Understanding of the movement of hydrocarbons through neuston (surface) layer of the water column is limited
- Very little is known about benthic communities and processes, including natural variability. Little is known about marine species' preference or need for specific substrate types
- Oregon does not presently have a marine habitat classification system. Habitat research must emphasize habitats known to be susceptible to accumulation or long-term exposure to spilled oil or those with special aesthetic value

Fisheries Data and Information Gaps

- The accuracy of fishery production models is open to question. More data is needed to more realistically determine allowable harvest levels
- The importance of offshore rocky reefs and rocky bottoms to fish productivity is not well understood. Data on the distribution

and abundance of fish on rocky bottoms, and on soft bottoms inside the 30 and beyond the 200 fm isobaths, are sketchy

- Data on the distribution and abundance of forage and juvenile fishes is also sketchy
- Data on marine habitat parameters and fish catch areas have not been organized and analyzed sufficiently to correlate catch areas with habitat parameters. Important parameters are depth, substrate composition, surrounding substrate, salinity, light, temperature, turbidity, and currents. Critical habitats, including spawning and nursery grounds, have not been defined or mapped
- There is little data on the sensitivity of fish, especially salmonids, to oil and gas exploration activities such as spilled oil and seismic testing
- The effectiveness of mitigation as a management tool has not been sufficiently evaluated

Marine Birds and Mammals

- Offshore seabird populations off Oregon and Washington have never been adequately quantified. There are no seabird population monitoring programs currently in place
- Relatively complete population parameters (other than abundance) have not been obtained for any seabird or mammal species
- The actual impacts of ocean resource development activities on seabird populations have not been sufficiently studied. Decisions have been based on predicted impacts, and such predictions have not been adequately determined to be accurate
- Sensitive seabird habitat areas, including ocean feeding and resting areas, have not been defined and identified
- Important feeding areas for all marine mammals found in Oregon waters have not been identified
- Critical marine mammal habitats need to be identified

Ocean Chemistry and Water Quality

- Oregon's marine waters have never been properly analyzed to determine the levels and characteristics of dissolved compounds, suspended particles, or trace metals
- The habitat value of dissolved chemicals is not well researched
- Little is known about natural background sediments and suspended particulates in the waters off Oregon and Washington
- Little is known about the fate of drilling mud plumes in the water column after the first 24 hours after their disposal
- The transport and fate of oil, heavy metals, and organic compounds in Oregon's dynamic marine environment, regardless of their source, have never been properly investigated and characterized

Social and Economic

- Economic baseline information is needed to provide estimates of coastal employment and population related to ocean resources development and related secondary employment
- Inventory data is needed of coastal areas of recreational, cultural, historic, and ceremonial importance
- The net economic effect of the loss of fisheries to nonrenewable resource activities both within and beyond state waters have not been calculated

Geology

- The nature, extent, and location of geologic hazards, including ground motion, seafloor offsets, active faults, sub-sea landslides, diapirs, and shallow gas-charged sediments.
- The composition and depth of seafloor sediments have not been established across the continental shelf

Data Administration and GIS

Ocean research has developed and made available an immense amount of data on marine systems. Oregon's ocean resource management program will rely on the portion of that data that relates to Oregon waters, marine systems in general, or the effects of resource development activities. The acquisition of such data will require money and time; the appropriate use of the data will require access by experts who are familiar with its limitations.

Research data will come from a variety of sources. It will be used by several state agencies, private interests, citizens, and public interest groups. Although its use cannot be restricted, its integrity must be guaranteed.

Many ocean resource data will be specific to locations in the ocean. They will be ideally suited to use in a computerized Geographic Information System (GIS). Senate Bill 630 specifically required that the Plan include:

> *Maps of existing ocean conditions, uses and resources of the coastline, territorial sea, continental shelf and Exclusive Economic Zone. These maps shall be . . . entered into a computer format to allow ease of data analysis and shall be accompanied, where possible, by computerized information about the mapped resources or features . . . .*

Not all pertinent ocean resource data will be suited for use in a GIS. Both scientific reports and economic data are useful to resource managers, but access to it generally does not require a sophisticated computer. A system is needed to provide access to such data and information.

It is possible to use data in ways for which they were neither intended nor well suited. For example, trawl catch data could be presented in such a way as to conclude that the catch accurately represents a particular population in a particular place, when in fact the catch may have utilized a net that harvested very few fish under a certain size or age. The original developer of the data may know its limits, but everyone who has access to it may not. Consequently, some data will have the potential to be used to draw erroneous conclusions. This potential requires that data limitations be rigorously documented.

The Oregon Department of Energy (ODOE) houses the state's Geographic Information System Service Center. The Service Center is providing the technical expertise to build an Oregon's Ocean Information System. The Service Center is also providing technical assistance to numerous state and federal agencies on other natural resources geographic information systems, some of which will provide useful information to the ocean GIS. The Service Center is working directly with state ocean resource agencies, such as ODFW and DLCD, to assemble data bases on particular resources.

Recommendations

- ☐ The Ocean Policy Council should
  - Establish an interagency process to review and update ocean research needs
  - Provide leadership for an Ocean Research Consortium made up of of Oregon's academic institutions, state and federal agencies, and private industry
  - Work with affected state agencies and State Map Advisory Council to guide development and maintenance of an Oregon Ocean Information System
  - Coordinate the Oregon Ocean Information System with adjacent states and with NOAA, USGS, and other federal agencies with ocean-related digital data
- ☐ The Oregon Department of Fish and Wildlife should develop a system of marine habitat research reserves based on a marine habitat classification system
- ☐ The Oregon Department of Energy's GIS Service Center should continue to provide technical services to build the Oregon Ocean Information System.
- ☐ The Oregon Legislature should

- Strengthen marine research programs at Oregon State University, University of Oregon, and within state resource agencies to support ocean resources management
- Continue to support the development and use of an interagency Oregon Ocean Information System.

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