A Policy Context and Analytical Framework for Advancing Regional Ocean Governance in the United States

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List of Acronyms

Acronym	Definition
ARS	Alliance for Regional Stewardship
CEQ	Council on Environmental Quality
COP	Committee on Ocean Policy
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
EAM	Ecosystem Approach to Management
EBFM	Ecosystem-Based Fisheries Management
EBM	Ecosystem-Based Management
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EGT	Ecosystem Goal Team
EO	Executive Order
EPA	Environmental Protection Agency
FAO	United Nations Food and Agriculture Organization
FEP	Fisheries Ecosystem Plan
FMC	Fisheries Management Council
GIS	Geographic Information System
GMA	Gulf of Mexico Alliance
GOMC	Gulf of Maine Council on the Marine Environment
HAB	Harmful Algal Bloom
IOOS	Integrated Ocean Observing System
LME	Large Marine Ecosystem
NEP	National Estuary Program
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NOC	National Ocean Council
NOPA	National Ocean Policy Act
NPFMC	North Pacific Fisheries Management Council
NROC	Northeast Regional Ocean Council
RA	Regional Association
REC	Regional Ecosystem Council
RFO	Regional Fishery Organization
ROC	Regional Ocean Council
ROG	Regional Ocean Governance
ROIP	Regional Ocean Information Program
RS	Regional Stewardship
RSP	Regional Seas Program
SAFMC	South Atlantic Fisheries Management Council
SARP	Southeast Aquatic Resources Partnership
SFA	Sustainable Fisheries Act

List of Acronyms (Continued)

SIMOR	Subcommittee on Integrated Management of Ocean Resources
TNC	The Nature Conservancy
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environmental Programme
USCOP	United States Commission on Ocean Policy
USOAP	United States Ocean Action Plan

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Introduction

The concept of regional ocean governance (ROG) is gaining traction in ocean and coastal management as a new way of proactively governing cross-jurisdictional ocean uses, resources and problems. Current ocean and coastal management activities typically take an issue by issue approach, addressing a single issue without addressing other connected issues within an ecosystem. Though it is not a new concept, ROG is experiencing a surge in interest and support at the national, state, and local levels because it offers a way to bring together a wide range of issues and serve as a vehicle for utilizing or thinking about ecosystem-based management. Two national reports were released in 2003 (Pew 2003) and 2004 (USCOP 2004) on the state of our oceans and coasts, policies and practices, and were followed by a new US Ocean Action Plan (USOAP), and numerous other federal responses. The two reports, the U.S. Commission on Ocean Policy's (USCOP) *An Ocean Blueprint for the 21st Century* and the Pew Oceans Commission's (Pew) *America's Living Oceans: Charting a Course for Sea Change*, emphasized developing ROG in the US to strengthen our economies, sustain our ecosystem resources, preserve our cultural and biogeophysical treasures, and shore up national security (USCOP 2004, xxxiv). These recommendations echo discussions from last two decades on ROG and historic and contemporary attempts at regional coordination in various regions in the US.

Underpinning ROG is the concept of ecosystem-based management (EBM) or ecosystem approaches to management (EAM) which looks more broadly and comprehensively at ocean issues as issues connected to one another by the ecosystem

inhabitants and processes. While existing examples of regional management of oceans and coasts have in many cases improved the status quo, not all of them reflect the notion of ROG as envisioned by the USCOP or Pew, or embody the spirit of the ecosystem-based approach recommended for ROG. Many of these activities follow an issue-by-issue approach while others attempt to use a more comprehensive regional approach tackling a diverse set of issues. Often these more comprehensive efforts encounter political, institutional, or other barriers to their success.

With the support outlined in the USOAP, the ROG movement in the US is officially underway. However, what it will accomplish and become is unpredictable and will vary by region as region-specific biogeography, economics, and social factors determine what are the driving issues and appropriate responses (UCSOP 2004, 57-59). What is certain is that over the years many issues drive new regional coordination because they can only be addressed properly in a regional context. These issues include but are not limited to oil spill prevention and response, endangered species, and fisheries management. While these responses often result in improvements, they typically remain focused on a single issue, a short time scale, a limited spatial scale, and lack the integrated ecosystem-based approach (USCOP 2004, 55). Emerging issues, such as offshore energy and aquaculture proposals, will require new regimes to address management needs and to resolve jurisdictional issues, adverse impacts and conflicts with other uses (USCOP 2004, 60). The choice before us is whether to create additional single-purpose regimes for new and emerging uses or to explore how ROG principles and/or institutions might recognize common issues and needs among all present and future uses in an ecosystem context.

The purpose of this thesis is to provide insight into how the national and regional policy developments affect the discussions, development and implementation of ROG and ecosystem approaches to ocean and coastal management; to establish a clear terminology to describe ROG; and to offer a new analytical framework for evaluating the congruence of existing regional coordination activities with ROG and guiding development of new ROG initiatives. We must first understand the contextual factors (i.e., scope, supporters, audience, reach, etc.) of recent regionally oriented activities that affect new policies and initiatives if we are to make informed choices about future directions for ROG. Chapter 1 discusses the contemporary policy context at the national and state levels. Chapter 2 provides an interdisciplinary conceptualization of the underpinnings of ROG drawing from the rich history of place and regionalism in land use planning, definition and elements of governance and ecosystem approaches. The next discussion in Chapter 3 develops a comprehensive concept of ROG and an analytical framework drawing from three visions for regional coordination: the USCOP concept of ROG, EBM, and regional stewardship (RS). Chapter 4 describes an example application of the framework to an existing regional ocean coordination activity, the Gulf of Maine Council on the Environment (GOMC), and is followed with a conclusion in Chapter 5.

Chapter 1. Contemporary Policy Context

Several significant developments in US ocean policy occurred in the past few years. Two national reports by two commissions (USCOP and Pew) provided an assessment of existing policy and practices and made recommendations for improving ocean and coastal management. President George W. Bush submitted his response to the federally mandated commission report (USCOP report) via the US Ocean Action Plan (USOAP), and also signed Executive Order 13366 implementing a cabinet-level Committee on Ocean Policy under the Council on Environmental Quality (CEQ). The National Oceanic and Atmospheric Administration (NOAA) is promoting and developing its ecosystem-based management (EBM) approach through its cross-line office Ecosystem Goal Team (EGT). Regional ocean observing systems are forming and State's are initiating their own policy activities. The supporters, scope and reach of these activities are important factors influencing the policy debate. The diversity of advocates reflects the diversity of pressing issues and associated institutions and will bear upon the direction and timing of these discussions.

This section describes each of these contextual activities and characterizes how each may affect the ROG dialog. In all there are eight significant factors that will be discussed: Pew definition of ROG, USCOP definition of ROG, the USOAP, NOAA's EGT, fisheries management council (FMC) developments, information resources developments, state and regional developments, and other existing management institutions or arrangements. Each adds to the patchwork of issues, interests, and solutions and illustrates the policy context affecting new or developing ROG activities.

Discussion of the policy context is essential to understanding the players, motivations, opportunities and constraints that face innovations in ocean management, particularly those seeking a more holistic and regional focus. Pew and USCOP definitions provide conceptualizations of ROG that frame much of the discussion. The USOAP indicates the level of effort and direction to come from federal agencies. NOAA's EGT activities show one agency's trajectory towards EBM. FMC developments highlight attempts to revolutionize fisheries management by incorporating a wide range of ecosystem considerations in fishery management plans. Information resources developments indicate the level of interest and support for enhancing a variety of information needs. State and regional developments demonstrate the players and momentum building to move forward with ROG at the sub-national level. Finally, other existing national and international regional coordination mechanisms illustrate the density of often issue specific regional coordination activities.

a. Pew Definition of Regional Ocean Governance

One of the major recommendations of the Pew Commission is to address ocean and coastal resource problems using a more "comprehensive and coordinated" approach at regional large marine ecosystem (LME) and watershed scales (Pew 2003, x). By focusing on large marine ecosystems and watersheds, the Pew Commission is clearly stating the goal of cross-jurisdictional management of not just resources (harvested elements of an ecosystem), but also ecosystem processes and their inhabitants. The issues to be addressed by regional approaches of this scale include living marine resource management, habitat protection, water quality protection, and managing human activities

that affect marine ecosystems, such as non-point source pollution (Pew 2003, 56, 103). At the watershed scale, the Pew Commission emphasizes the need for state-guided cross-jurisdictional coordination and planning for protecting critical habitat and reduction of the impacts of urbanization on habitat and water quality, particularly from non-point source pollution (Pew 2003, 56-58).

To advance these goals, the Pew Commission recommends establishing regional ocean ecosystem councils (Councils) that would be charged with developing regional ocean governance plans (Pew 2003, 33, 103) based on national policy and standards as defined by a National Ocean Policy Act (NOPA), federal approval, and clear statutes (Pew 2003, 33-34, 103). The plans would also be supported by federal consistency requirements through expansion of the Coastal Zone Management Act consistency authority (Pew 2003, 104), would allow federal preemption if states do not comply with their own plans and federal court citizen suits, and would impose default federal derived regional ocean plans if states fail to develop their own plans (Pew 2003, 104). The boundaries of the Councils would at first match the boundaries of the existing regional fishery management councils (FMCs) but may be adjusted if new information or issues warrant changes. In this way, the Councils are flexible to the changes in the ecosystem or political climate. Tools to be used by the Councils include LME assessments (Pew 2003, 95), zoning, marine reserves (Pew 2003, 34), and the use of regional scientific and technical teams, especially when it comes to conservation decisions (Pew 2003, 47, 104). However, Pew also allows for the development of advisory groups for receiving “views and advice” from non-federal interests, including the usual stakeholders, local

governments and the public (Pew 2003, 34), but it is unclear whether this information would be used in any decision making process.

The Pew approach to ROG follows a more traditional top-down approach using clear legal structure, authority and accountability. This approach is likely to garner support of the environmental sector since the focus is on resource protection and it maintains the court system as the arena for voicing concerns. Additional support comes from scientists who have been sounding the alarm on the state of the oceans for some time and have been the primary driver for EBM (Amos 2005, 1). Pew's emphasis on state and federal government, however, overlooks the value of local input and action and misses the connection between higher level decisions and local level impacts. Further, their findings and recommendations do not reach into economic development or national security. These two fundamental human endeavors must be considered and receive attention while protecting and restoring resources since these activities are factors in environmental change and resource consumption. With stakeholders from these activities absent from the ROG discussion, conflict is inevitable and questions of equity will persist. Overall, the Pew approach to ROG offers a strong-arm method of protecting and restoring the oceans and coasts.

b. USCOP Definition of Regional Ocean Governance

The USCOP vision of ROG differs from that of Pew. Throughout the USCOP report, there are references to ROG as a tool for EBM for improving coordination across jurisdictions to address existing and future ocean and coastal management problems and opportunities (USCOP 2004, 55). The USCOP calls for the creation of regional ocean

councils (ROCs) in a flexible and voluntary way that is supported at the national level by the National Ocean Council (NOC) (USCOP 2004, 55). The ROCs would facilitate cross-jurisdictional and collaborative approaches while leaving existing authorities intact, with their formality and level of organization evolving over time as needed (USCOP 2004, 56). Unlike the Pew regional councils and plans, USCOP recommends the Councils be formed as a result of broad participation from all levels of government including tribes, private and non-governmental sectors, academia, and the general public and that regional participants should drive the discussion of ROC structure, function, and regional plans (USCOP 2004, 56-57).

Regional activities will require robust and improved data, collection, and dissemination to all levels for decision making, training, technical assistance, outreach and education and there should be strong linkages to existing or developing regional integrated ocean observing systems (IOOS) (USCOP 2004, 63). A key source of valuable information for decision making are regional ecosystem assessments to be conducted by NOAA and the Environmental Protection Agency (EPA) using existing federal, state and local information (USCOP 2004, 64).

Since many of the problems to be addressed by ROCs are well known, there already exist in many cases regional responses to these problems. The USCOP recommends the ROCs assist, enhance, or become the focal point for these existing responses, but ROCs should not displace what already exists (USCOP 2004, 59-60). The boundaries of ROCs would encompass no less than “the area from the inland extent of coastal watersheds to the offshore boundary of the nation’s exclusive economic zone” (USCOP 2004, 56).

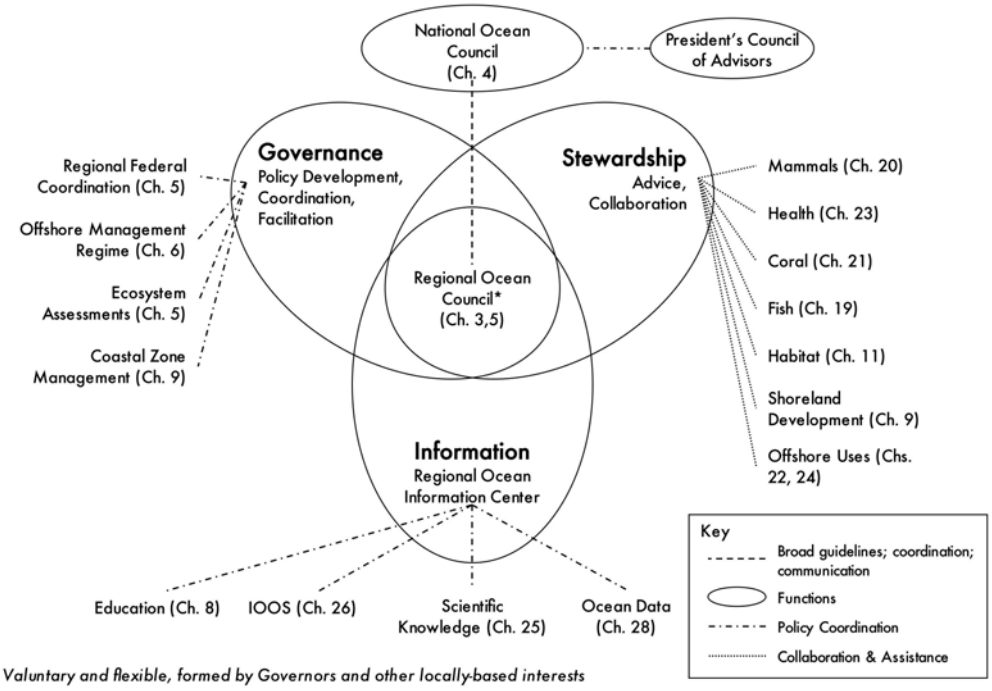

Figure 1. Regional Ocean Council Concept Envisioned by the USCOP (Hershman 2005)

Boundaries should aggregate similar adjacent ecosystems or processes and may reflect LME boundaries when appropriate (USCOP 2004, 56).

Throughout the USCOP report three themes emerge that can be considered the pillars of the USCOP concept of ROG: governance, stewardship and information (see Figure 1). Governance involves policy development, coordination, and facilitation through regional federal coordination, coastal zone management at the state level, the offshore management regime, and ecosystem assessments (See USCOP Chapters 5, 6 and 9). Stewardship involves advice and collaboration on topics such as mammals, human health, coral protection, fish management, and habitat (See USCOP Chapters 11, 19, 20, 21, and 23). Information incorporates ocean and coastal observing or monitoring,

scientific knowledge, education initiatives and outreach to the public (See USCOP Chapters 8, 25, 26, and 28). Bridging all of these is ROG and ROCs. In addition, the USCOP vision incorporates an important role for the NOC to coordinate federal agencies and a Council of Advisors to the President on ocean matters.

The USCOP approach to ROG is clearly more flexible than the Pew approach and provides a balance of support at federal and state levels with development originating with the state and local levels (USCOP 2004, 58). Issue coverage is also more comprehensive and looks beyond only current issues to future opportunities. The breadth of topics and process followed created a broader set of advocates making this approach much more politically feasible. Providing state Governors the opportunity to comment on the draft resulted in state attention and interest in the recommendations. Local levels and all ocean interests also had the opportunity to provide input into the recommendations through the Governors. Senior executive service and politically appointed agency heads are also advocates for the USCOP approach since these new activities would bring new funding to their agencies. Additional support comes from scientists and operational data users who will benefit from a developed integrated ocean observing system. Finally, the former commissioners are influential advocates who are promoting their recommendations across the country. Such broad support is likely to help the USCOP vision of ROG permeate future discussions.

Table 1 compares the USCOP and Pew concepts of ROG. Both the Pew and US Oceans Commissions recommend implementing regional approaches to improve coordination and facilitate EBM of oceans and coasts. Both promote looking at LMEs,

including linkages of oceans to upland watersheds, use of EBM approaches, coordination across jurisdictions and enhancing or assisting existing sub-regional or regional activities (USCOP 2004, Ch. 5; Pew 2003, Ch 2 & 10). The following discussions of the US Ocean Action Plan and NOAA's Ecosystem Goal Team (NOAA EGT) suggest that initial steps are being taken at the national level to provide the needed support for these visions. The NOAA EGT discussion also provides an initial description of EBM, though a more thorough discussion of EBM follows in Chapter 3.

Table 1. Pew and USCOP Concepts of ROG

PEW	**USCOP**
Federally driven thru national law and standards	Voluntary and flexible; established by Governors and supported by National Ocean Council
Requires ROG plans to restore and protect ecosystems, manage LMR activities; federally imposed if region falters; based on science	Regionally identified issues, goals, priorities; issue specific responses; focus on coordination, regional information services, IOOS
Use marine zoning, MPAs, address water quality, habitat and coastal development	Mechanisms/management measures determined by the issue
Apply federal consistency, allow citizen suits, default plans by feds if regions do not act	Authority of existing agencies not changed
Council Membership: Federal, state and tribal authorities	Council Membership: broad and representative of all levels of government
Non-governmental interests represented through advisory groups	Non-governmental interests represented through membership or advisory groups
ROG plans should assess history and state of regional marine ecosystems	Regional ecosystem assessments by EPA and NOAA
Use large marine areas - LME and FMC boundaries	
Extend from coastal watershed to ocean	
Use ecosystem-based management framework	
Cross jurisdictions	
Enhance or assist sub-regional activities	

(Adapted from Hershman and Russell 2005, Pew 2003 and USCOP 2004)

c. US Ocean Action Plan

On December 17, 2004, President George W. Bush announced the U.S. Ocean Action Plan (USOAP) in response to the USCOP report. Along with the USOAP the President signed Executive Order 13366 establishing a cabinet-level Committee on Ocean Policy (COP) to oversee ocean-related policies for the President, advise heads of executive departments, and obtain advice and information from state, local, and tribal representatives (69 F.R. 244). The USOAP calls for improved coordination at the federal level, between the federal, state, tribal, and local governments, and with the private sector, international organizations, and foreign governments (CEQ 2004, 4-6). Regional ocean governance is among the plethora of ocean and coastal topics covered in both the USOAP and EO13366. The USOAP highlights three existing regional coordination activities (Great Lakes Regional Collaboration, Regional Partnership in the Gulf of Mexico, and the Southeast Aquatic Resources Partnership (SARP)) and establishes the new Subcommittee on Integrated Management of Ocean Resources (SIMOR) (CEQ 2004, 8). Among its many tasks, SIMOR is to address statutory or regulatory redundancies at the regional level, and resolve conflicts and recognize emerging ocean issues for national and regional benefit (CEQ 2004, 8, 10-11). The USOAP also highlights ROG during discussion of Large LME approaches to management under the purview of the United Nations Environmental Programme (UNEP) Regional Seas Program (RSPs) and regional international fisheries bodies consistent with the 1982 UN Convention on the Law of the Sea (UNCLOS) (CEQ 2004, 36-37). The EO goes a step further than supporting these long-standing regional activities and recommends voluntary

regional approaches to address ocean matters – a recommendation of the USCOP (EO 13366 Sec.4(d)(ii)).

The marine affairs community received the USOAP with mixed reactions. Some suggest it is a great start (USCOP 2004c; Environmental Defense 2004; Ocean Conservancy 2004) while others say it is nothing more than a restatement of mostly existing programs already constrained by tight budgets and no sign of additional funding (NOS 2005) and hoped for more (Oceana 2004; Environmental Defense 2004; Ocean Conservancy 2004). The USOAP statement in support of EBM will likely garner a few more supporters though many are undoubtedly reserving their enthusiasm in wait of action. In all, the impact of the USOAP is uncertain and its supporters vary; yet it will continue to be the current administration's blueprint for ocean policy developments for the next three years.

d. NOAA Ecosystem Goal Team

Prior to the US Ocean Action Plan and the USCOP and Pew reports, NOAA through its NOAA Ecosystem Goal Team (EGT) was developing ecosystem approaches for protection, restoration and management of specific uses of ocean and coastal resources (NOAA 2005a). The EGT vision and position advocating ecosystem approaches to management warrants a closer understanding since NOAA is a primary steward of ocean and coastal resources and provides operational services and products to a variety of users, from coastal managers to shippers.

The EGT is composed of representatives from the many ecosystem-related NOAA programs and line offices. The EGT's primary goals are to improve ocean and coastal

ecosystems for human benefit and develop an active and informed public (NOAA 2005a). Strategies to implement these goals appear to incorporate the pillars of ROG outlined in the USCOP report. Integration and outreach is utilized to form regional teams and conduct stakeholder workshops (Information and Stewardship), collaborative and voluntary mechanisms are sought (Stewardship and Governance), the public is educated and informed in order to create stewards (Information and Stewardship), and observing, characterizing and research are accomplished (Information) (NOAA 2005b). Note that these objectives reflect areas in which NOAA has authority and other less resource-oriented activities (i.e., marine transportation, tourism, etc.) are absent.

NOAA's approach is considered an EBM approach because it is adaptive, regionally directed, incorporates knowledge or gaps in knowledge of the ecosystem, considers multiple influences including humans, seeks a balance of societal objectives and moves towards integrated management (NOAA 2005b). Through collaboration with a variety of interests (federal, state, academic, NGOs) NOAA established ten LMEs to be managed by regional ecosystem councils (RECs) (NOAA 2005b). These boundary delineations are consistent with initial boundaries prescribed by Pew and USCOP. The EGT will stimulate voluntary and joint agreements to achieve their objectives and address ecosystem needs through existing management authorities at all levels (NOAA 2005b).

Advocates for the EGT approach are primarily expected to be federal managers and NOAA leadership. Since the EGT is not advocating new powers, existing authorities at the state level are also likely supporters. By adopting an EBM approach, the EGT also is

likely to gain support from the environmental non-governmental organization (NGO) sector since they have been the primary advocates for EBM (Amos 2005, 1).

This approach is a strong step towards incorporating EBM thinking into ocean management. In the ROG context, there are other regional issues or needs that could be added, such as preventing oil spills, promoting marine transportation and port development, or sustainable economic activities such as non-living resource extraction, tourism, and new offshore energy (i.e. wind farms and wave power), and many other non-NOAA issues (i.e., national security). Since NOAA lacks the regulatory authority over many of those activities, it is necessary to integrate those interests and jurisdictions in any new ROG approach.

e. Fisheries Management Developments

Fisheries management is a major activity in any new or historic ocean management regime because of its economic productivity and ecosystem impacts. A shift occurred in fisheries management in 1999 after the release of a congressionally mandated study assessing the use of ecosystem management principles in fisheries management. Instigated by the Sustainable Fisheries Act of 1996 (SFA 1996), the study recommends steps to help fisheries management councils (FMCs) move towards an EBM approach to fisheries management or ecosystem-based fishery management (EBFM) to ensure ecosystem health and sustainability (EPAP 1999, 1). One recommendation is for FMCs to develop new Fisheries Ecosystem Plans (FEPs) to provide FMCs with a broader perspective on ecosystem properties and characteristics, including the human dimensions,

provide guidance on information use, and establish policies for developing management measures (EPAP 1999, 2).

Following the study several FMCs undertook steps to move towards development of FEPs. One such FMC is the South Atlantic FMC (SAFMC) which has held a series of workshops and coordinated with other providers of data and information on the ecosystem all for purposes of developing a Fisheries Ecosystem Plan (FEP) and moving towards ecosystem-based management of fisheries (SAFMC 2004, 4-7; Amos 2005, 35). These and many other steps were laid out in an action plan for moving from single species essential fish habitat (EFH) plans to FEPs (SAFMC 2004).

In response to the Pew and USCOP reports, the USOAP and Executive Order 13366, the North Pacific Fishery Management Council (NPFMC) completed a study assessing how the NPFMC fits within the EGT proposed ecosystem council concept and proposed ecosystem council for Alaska (Evans and Wilson 2005, 8-12). The scope of the study included questions related to ecosystem plans, administrative support, working process, role of science, and membership composition (Evans and Wilson 2005, 3). In coordination with the state of Alaska, the NPFMC chose the Aleutian Islands ecosystem as a starting point for improved coordination and development of an ecosystem approach through a proposed Aleutian Islands Ecosystem Forum (NPFMC 2005). There are other related activities underway in fisheries management though most are less developed than the SAFMC and NPFMC activities (Amos 2005, 32).

The approach taken by the FMCs is a good start and will help fisheries management move towards EBM or EBFM. It is clear FMCs are committed to ecosystem approaches

and exploring how best to fit into the ROG structure proposed by the USCOP. FEP development will contribute to overall regional ecosystem assessments and provide a valuable resource for fisheries and non-fisheries managers, users, and scientists. However, fisheries-centric ecosystem approaches to management may limit the equitable consideration of other ocean uses and bring with it existing political conflicts and perceptions. Holistic consideration of all interests should be integrated into a management and decision making framework if new developments in fisheries management are to embody EBM. Tribal interests, other ocean impacting resource oriented interests (i.e. timber, minerals, offshore energy, etc.), and non-resource consuming interests already mentioned in the EGT discussion must also be recognized and included in the process. Proposed stakeholder workshops will help this objective and continue to guide FMCs towards EBM and EBFM.

f. Information Resources

The need for knowledge and information about ocean and coastal ecosystems and human activities is fundamental to new ocean initiatives because we know so little about oceans. Research, data collection, monitoring, observations, information products and tools, education, outreach, training and technical assistance all fall within “information” needs for ROG decision making in the USCOP report (2004, 63).

The USCOP suggested developing regional ocean information programs (ROIPs) to fulfill many of these functions and support decision makers at all levels (USCOP 2004, 62-64). ROIPs would be central clearinghouses for information and serve as focal points for information coordination, collection, and sharing with all levels of government,

stakeholders, and the public (USCOP 2004, 63-64). How the ROIPs form is up to each region to decide (USCOP 2004, 63). Regions may wish to capitalize on existing resources or programs or develop new ones. However they are formed, the USCOP recommends staffing ROIPs with a variety of traditional information and data experts (i.e. scientists, agency representatives, tribal representatives, and educators) (USCOP 2004, 63). So far, there is little public discourse on the topic of ROIPs, though it is expected that existing information programs are eyeing ways in which their programs could grow to support these needs. Two example information programs among countless others that could play a role or become a part of an ROIP are integrated ocean observing system (IOOS) regional associations (RA's) and The Nature Conservancy's (TNC) Marine Initiative. Each offers a different capability essential to decision-makers.

There is significant interest and growing support for developing IOOS to detect and forecast oceanic components of climate variability, facilitate safe and efficient marine operations, ensure national security, manage resources for sustainable use, preserve and restore healthy marine ecosystems, mitigate natural hazards, improve education and outreach, and ensure public health (Ocean.US 2005, Malone 2005, 4). Individual regions are developing new or enhancing existing ocean observing systems that will be linked to other regions and a national backbone system (Ocean.US 2003, 1). There are eleven RAs all at different stages of development; some are more evolved and already established a governance structure and linked information systems, while others are more nascent (NFRA 2005). RA composition, development, and function seek to be integrative: information needs are regionally driven and membership is broad and composed of cross-

jurisdictional and cross-sectoral users who are involved in RA development and function (Ocean.US 2003, 3). Another benefit of RAs is increased coordination on data sharing, issue and product identification, standards and protocols development, education and outreach, and research and development (Ocean.US 2003, 2). RAs also hope to serve as a catalyst for increased federal coordination and alignment on regional priorities (Ocean.US 2003, 3-4; Malone 2005, 2).

There are others actively addressing regional information needs to support ROG by providing value-added analysis and tools. One of these is TNC's Marine Initiative. TNC partners with state, local and other entities to integrate human dimension data and information into their eco-regional planning tool (Ferdana et al. 2004). The eco-regional planning tool is a geographic information system (GIS) based decision support system that aids resource managers with identifying priority target areas for specific user-defined management objectives (TNC 2005). By broadening the information base beyond ecosystem function and resources, the TNC tool will help managers consider multiple uses or impacts on a resource.

While it is anticipated that RAs will continue to generate new data and meet management and user information needs in the oceans, existing and developing coastal information systems and networks will be required to provide coastal and upland information. RA and coastal monitoring networks monitor only the output of the human dimensions (i.e. increased water nutrient levels) and not the specific activities (i.e., use of fertilizer for farming or lawns) that may impact ocean and coastal resources or activities. Therefore, additional linkages must be made with existing state and local entities (RNRF

2005, 18) engaged in environmental and socioeconomic monitoring or regulation in coastal and upland areas[1]. Also needed is a more direct connection with ROG activities. Proposed Regional Federal Working Groups for coordinating federal agencies involved with RAs (Malone 2005, 2) may overlap with existing or proposed regional coordinating groups tackling a broader suite of issues for ROG. In addition, ROG initiatives are potential clients or customers of RAs and could help RAs determine regional priorities as regional plans are developed and a broader suite of issues are addressed. As ROG initiatives mature it is likely that this assortment of information resources will also mature.

g. State and Regional Developments

In addition to the above activities, significant efforts are being made at the state level[2]. Some states responded to the USCOP report by building on existing activities while others developed new activities (Hershman and Hansen, forthcoming). In addition some activities benefited from federal support in the OAP while others are more directly related to state-driven initiatives. State-driven initiatives are led by Governors and most involve multi-state coordination. California and Alaska activities are single state though they do not suffer a dearth of issues or conflicts. Both California and Alaska have extensive coastlines, state waters, and a LME and engage in more international coordination than other states. This distinction is important – ROG does not necessarily mean or require multi-state coordination.

[1] TNC is also developing linkages between coastal and ocean analysis in their decision support tool, though coverage is mostly on restoration and protection efforts (TNC 2004; Ferdana et al. 2004).
[2] For a more complete picture of regional activities, see Appendix A. Summary of Regional Ocean Governance Workshop and Appendix B for a table of State Ocean Management Initiatives.

Several factors contribute to states showing initiative. During the USCOP process, state Governors were provided several opportunities for input and comments, including on the final draft report of the USCOP (USCOP 2004b). In a time of tight budgets, states also likely realize the competition for federal funds is quite high. Some Governors may also be motivated by prestige, a desire to create a legacy, or a need to garner additional votes for pending elections. Whatever the reason, states are developing ROG initiatives and are strengthening their ocean policies to prepare for future ROG activities.

One state-driven initiative is the Gulf of Mexico Alliance (GMA). After the release of the USCOP report, Governor Jeb Bush of Florida reached out to other Gulf states and suggested they work together to address some of the recommendations to illustrate state initiative and pre-empt federal intervention (Andrews 2005). The approach chosen was to use existing structures such as state programs and the EPA Gulf of Mexico National Estuary Program (NEP), and focus on five priority areas: reduce nutrients, water quality, restoration, education, and identification of critical habitat to inform management (Andrews 2005). From these priority areas they are developing white papers that will stimulate development of action plans. Interestingly, discussion of ROG was specifically tabled (Andrews 2005), though this initiative clearly is a positive step towards regional coordination. With the devastation, costs and challenges brought by Hurricanes Katrina, Rita, and Wilma in the autumn of 2005, it is possible priorities of the GMA will change to address the most pressing needs for response and recovery.

Additional activity is occurring along the Pacific Coast as California, Oregon, Washington and Alaska all took steps to strengthen and improve state ocean management

activities and begin interstate discussions on how best to coordinate on shared or common issues (Hershman et al. 2005). California released its own comprehensive Ocean Action Plan and created the California Ocean Protection Council (Hershman and Hansen, forthcoming). Similarly, Alaska developed a state Ocean Policy Cabinet, Washington initiated a comprehensive state ocean policy review, and Oregon reconstituted its existing Ocean Policy Advisory Council after several years of inactivity (Hershman and Hansen, forthcoming). Other states that also responded to the USCOP report are Hawaii, Massachusetts and Florida which formed an Ocean and Coastal Council, an Ocean Policy Advisory Council, and an Oceans and Coastal Council respectively (Hershman and Hansen, forthcoming).

The East Coast is equally active at pursuing ROG. Recently, New England Governors and Eastern Canadian Premiers met and agreed to work more collaboratively across national lines and also agreed to form a Northeast Regional Ocean Council (NROC) within the US (NEG-ECP 2005, 1).

With all of this state level activity, there exists sufficient impetus for a national dialog and a strong foundation upon which to build larger or more connected regional approaches. At a workshop attended by 90 federal, state, local, NGO, and private sector professionals in July 2005, most of the US regions came together to share their ROG activities and lessons learned and to continue ongoing discussion on the principles, purposes, and next steps needed for advancing ROG[3]. National perspectives and ideas

[3] A Workshop on ROG was held at the Coastal Zone 2005 Conference in New Orleans, LA, on July 20, 2005. The workshop was funded by NOAA's National Ocean Service and coordinated by the University of Washington's School of Marine Affairs with support from The Coastal Society University of Washington

were also shared by NOAA, EPA, Ocean.US and the Ocean Policy Project. The workshop resulted in increased energy, awareness, and dialog between regions and national partners and is likely to provide additional momentum for generating new or advancing existing ROG activities.

Activities at the state and regional level exhibit a wide range of maturity and coordination and indicate states will continue to lead the charge for improved regional coordination. They are bolstered by politically potent and active gubernatorial leadership, federal agencies, and NGOs. As witnessed at the ROG workshop in July 2005, support for these initiatives is broad and diverse and indicates a ready and willing ROG constituency. As recommended in the USCOP and USOAP, states and regions demonstrate the ability and willingness to chart the course for ROG in the US.

h. Other Existing Ocean Management Institutions and Mechanisms

In addition to the activities described earlier, there exist dozens of national and international ocean management regimes that are also part of the institutional landscape and therefore the policy context. Examples of international regimes include LMEs, RSPs, and Regional Fishery Organizations (RFOs). LMEs management is an EBM approach that uses interdisciplinary diagnostic and planning tools to address ecosystem productivity and carrying capacity, fish and fisheries, pollution and ecosystem health, socioeconomic conditions, and governance regimes (Sherman 2002, 60; Wang 46; Juda and Hennessey 2001, 44). The UNEP RSPs also attempt to use an EBM approach to

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Student Chapter. Observations on the workshop goals and accomplishments are based on the author's personal observations and involvement as the Workshop Coordinator. For more information on the workshop, including workshop proceedings and related documents, see Appendix B or visit http://depts.washington.edu/oceangov/cz05_workshop.html.

address a diverse set of issues through regional action plans (UNEP 2005; UNEP 2004, 3-7). There are also several dozen international Regional Fishery Organizations (RFOs) worldwide that provide scientific data and advice on regional fisheries under the auspices of the UN Food and Agricultural Organization (FAO) (Kimball 2001, 30).

Examples in the US include the regional FMCs and NEPs such as those discussed earlier, Special Area Management Plans (SAMPs), and other state and federally led regional coordination programs. Authorized under the Coastal Zone Management Act (CZMA), issue specific SAMPs are designed to improve long-term vertical and horizontal coordination and management for particular places (CSC 2003). In the Great Lakes, Chesapeake Bay, and Gulf of Mexico are large scale partnership programs that address water quality, restoration, sustainable development, sediment management, invasive species and other issues (CBP 2005; EPA 2005b; EPA 2005c)

The tools and level of integration used by each varies, but most involve some level of coordination of international, federal, state, and local governments, NGOs, the private sector and public citizens. Accordingly, there are likely many lessons to be learned and a host of leaders to engage in regions with these programs. Any attempts to develop ROG should be aware of this density and diversity of competition for sparse ocean and coastal management funds.

Summary

For the second time in 30 years[4], a national report was developed to provide justification and recommendations for improving how we manage our oceans and coasts. The most recent report of the USCOP frames the discussion around the concept of ROG. The variety of policy developments indicates there is interest, political momentum and support, and progressive leadership advancing ROG in the US. This is a sure boost to environmentalists and scientists who have been tolling the warning bell for many years. For others, it may be a threat to their livelihoods as it could mean increased precaution and regulation and therefore decreased profits. Federal activities such as the EGT and FMC developments, and others highlighted in the USOAP provide hope that public resource trustees are taking corrective action and changing course and will do so with societal objectives in mind. These efforts can be supported by developments in information resources, providing users and managers improved knowledge and tools to make better decisions. State and regional activities provide proof that change is possible and already underway. Governors are leading the charge and reaching out to adjacent states, building coalitions and regional partnerships.

Together these discussions paint the policy context canvas – one that resembles Monet's "impression, soleil levant" of 1872[5]: the sun is rising, a few boats caught an early start and are already on the water trolling for the morning catch, others are paddling

[4] The first national report, commonly referred to as "The Stratton Report" was, *Our Nation and the Sea. A Plan for National Action*. Report of the Commission on Marine Science, Engineering and Resources. United States Government Printing Office, Washington, D.C., 305 pp., January 1969.
[5] See http://www.ibiblio.org/wm/paint/auth/monet/first/impression/sunrise.jpg.

away from dawn’s darkness, and the landscape and activity on the docks is beginning to awaken and come into light.

Chapter 2. Defining and Conceptualizing ROG

Oceans and coasts are complex places of interdependent human and natural processes and activities. As a result, these places warrant special management approaches that incorporate or consider holistically the impacts of human activities and natural processes on regional well-being, more so than existing but limited area-based approaches. ROG is one such approach that utilizes EBM, a place-based management approach. This chapter explores the origins and meanings of key concepts fundamental to cross-jurisdictional management of places to establish what is generally meant by ROG in principle. These concepts are place, regionalism, and place-based management.

First, clarification of the differences between area and place are needed to establish that oceans are places and thus require place-based management approaches. This is particularly important since throughout the field of marine affairs and ocean and coastal management the two terms are described differently or possess different meanings. A discussion of regionalism provides insight into the justification for cross-jurisdictional coordination to overcome the inherent problems with managing complex ecosystems and activities within the confines of discrete political boundaries. The concept of place-based management illustrates what is meant by managing socially, politically, and ecologically complex and interconnected places such as oceans and coasts. Around these concepts begins to form the notion of ROG and will require presenting definitions of region, ocean, and governance individually in the broader concept of ROG. The logic of ROG emerges from these concepts and allows more detailed discussion of the practical and operational aspects of the concept in Chapter 3.

a. Concept of Place

The notion of place is perhaps the best-suited notion to launch discussions of ROG. The emphasis and focus on "region" as an organizing unit for ocean governance suggests that the notion of "place" may be helpful in understanding what is meant by "region". Therefore, we draw on knowledge and experience from the fields of geography and land use planning. It is important to recognize the functional role of place in society and planning and understand how place plays a role in ocean and coastal issues.

According to the Alliance for Regional Stewardship (ARS), regional governance practiced in land use planning involves the normal decision making processes of business, government, and community collaboration focused around a common regional "place" (ARS 4, 2000; ARS 2004). There are a variety of conceptualizations of place in the social sciences that have relevance to discussions of ROG. Four such notions – *locale, sense of place, location, and process*[6] - are worth discussing and understanding because they affect and are affected by human activities and can help us see the relationships between human activities, natural processes, and our oceans and coasts[7].

A very simplistic or one-dimensional notion of place is *locale. Locale* is described as the "setting or backdrop" for normal daily activities (Kruger and Jakes 2003, 819). In this notion, place is a passive platform or arena in which human activities occur but it is not formed or affected by those activities. Thus there is a clear separation between human activities and the place in which they occur. While valuable, this notion of place is too

[6] Kruger and Jakes 2003 review concepts of place for application to natural resource management in a special "place" focused issue in Forest Science. Some of the following descriptions of place paraphrase their writings and are referenced accordingly.
[7] To understand the conceptual development of space and place see Tuan 1977 and Relph 1976.

limiting since ROG is to be a tool for influencing current or future human activities that impact a place (i.e., a region).

Another notion of place is *sense of place. Sense of place* is one's (individual or group) identification with a particular place based on experiences with that place (Relph 1976, 65; Kruger and Jakes 2003, 819). The experiences or human activity in that place forms one's definition of sense of place. Thus, perspective greatly affects sense of place: a policymaker for a place will have a different sense of place than a fisherman or tourist. Each identity's experiences are functional in nature (i.e. policymaking, economic rent seeking, leisure and pleasure seeking, respectively) but for each individual there may develop different psychological or spiritual meaning or connectedness (Relph 1976, 65). While this definition of place does not fully acknowledging the specific type of activities that occur or their resulting impacts on place, it does recognize the importance of the human interactions with place and resulting social perceptions and values (i.e., economic, intrinsic, etc.).

Location is a third notion of place and is defined as the physical space within which social and economic activities are distributed based on varying costs of doing business in different locations (Kruger and Jakes 2003, 819). Essentially, a place has interdependent physical and social properties whereby the location of a human activity is driven by transaction costs of that activity in a defined space[8]. Thus place both affects and is affected by human activities. This could not be clearer than in places such as the Gulf of

[8] This notion of place raises the concept of territorial embeddedness whereby people or organizations become anchored in a place as a result of economic, social, and political interactions with the place (Hess 2004, 117). See Hess 2004 for a thorough discussion of embeddedness and its role in new regionalism and economic geography.

Mexico where the presence of harvestable or extractable resources prompts related economic activities that have negative impacts on those resources.

The previous three definitions of place offer incremental changes to the notion of place, increasingly linking humans and physical space. A fourth definition of place takes a more holistic perspective – that place is a *process* in which space and society are constantly and interdependently transforming one another (Pred 1984, 279). This definition acknowledges the interactions and products of interactions between humans, natural processes and physical spaces. At a micro level of interaction (the individual level), human activities and places (for our purposes - regions) are interdependent and transform one another. Imagine the complexities in the relationships that arise when we also consider other existing social interactions, such as management institutions, or additional natural processes, such as decadal oscillations or climate change. Thus, if we consider place as a process we must consider not only the physical or natural space but also the human interactions and natural processes within that space and how they interdependently transform one another. A geographer and philosopher of places synthesizes the above quite clearly:

> *"Places are fusions of human and natural order and are the significant centres* [sic] *of our immediate experiences of the world. They are defined less by unique locations, landscapes, and communities than by the focusing of experiences and intentions onto particular settings. Places are not abstractions or concepts, but are directly experienced phenomena of the lived-world and hence are full with meanings, with real objects, and with ongoing activities. They are important sources of individual and communal identity, and are often profound centres* [sic] *of human existence to which people have deep emotional and psychological ties. Indeed our relationships with places are just as necessary, varied, and sometimes perhaps just as unpleasant, as our relationships with other people" (Relph 1976, 141).*

With such emotional and psychological ties wrapped around places, they become more difficult to manage by technique – an approach that both the planning and ocean fields are prone to do. The concept of technique in planning refers to the propensity to see and manage places strictly using objective and quantifiable tools such as efficiency, productivity, economic output, and organization or other numbers and principles that are widely accepted as "best practices" (Relph 1976, 87-88). As soon as the first line was drawn on a map our sense of the interconnectedness and complexity of the oceans began eroding and enabled us to overlook the natural properties and variance below the surface (Vallega 2002, 730) in a more technical way. Through training the planner learned to ignore and devalue the existential and intrinsic qualities of a place and see it as uniform and malleable in order to achieve an intended goal (i.e., economic development, slum removal, etc.) (Relph 1976, 87-89). The result of such a practice is often the destruction of places once known by the people that experienced them and a privileging of technical knowledge of a place over local knowledge[9] (Relph 1976, 89; Cheng and Daniels 2003, 843). Such a technical approach to management of the oceans, for example in marine reserve design where the goal is an increase in quantifiable biomass, inevitably threatens fishermen's sense or knowledge of place. What once was fishing ground for generations and holds significant emotional and psychological value is now relegated to an objective space. Therefore, when making management decisions we should look to not just which *areas* will best achieve our quantifiable goals but which *places* best fit our ecological and

[9] Cheng and Daniels delve into this topic further, discussing how the scale of place-based planning greatly affects the success of collaborative processes. Local knowledge of place is smaller in scale than the scale of an ecosystem managed under EBM or ROG. Overcoming this disparity requires developing and building shared ways of knowing (843-844). See Cheng and Daniels 2003 and St. Martin 2001.

societal needs. Doing so requires understanding the ecological context of a place and also the social context (Guerry 2005; 206). Understanding ocean areas as places allows us to be cognizant of the reality of competing ways of knowing place and the interdependencies between humans and the oceans when engaging in large-scale or regional coordinating activities (Cheng and Daniels 2003, 843).

b. Regions and Regionalism

Regionalism has strong roots in land-use planning practices where economic, social, transportation, and environmental issues prompt regional coordination (ARS 2004; Basalo 2003, 449).

> ***Regionalism:*** *1. Tendency to, or practice of, regional systems or methods; localism on a regional basis. Also, on a national or international scale: the theory or practice of regional rather than central systems of administration, or of economic, cultural, or political affiliation; the study of such phenomena as they relate to geographic factors (Oxford 1989).*

Using terms from the last definition of place in the preceding discussion, a region is a place or collection of interacting places (Katz 2000, 3). Thus, regional-ism is place-ism, or the process of interdependent human-space interactions in a specific place or places. According to Paasi:

> *"Regions…are social constructs that are created in political, economic, cultural and administrative practices and discourses. Further, in these practices and discourses regions may become crucial instruments of power that manifest themselves in shaping the spaces of governance, economy and culture" (Paasi 2001, 16).*

Thus, regionalism exists in urban and land use planning for many of the same reasons we are considering regionalism as a way of better managing oceans and coasts:

> *"[i]t is a tool for social planning, because it takes into consideration the rights, privileges, and resources of people and areas and stresses self-government and self-development as opposed to coercive centralized power, and also because it offers specific technical workable ways of developing and conserving resources for human use ends" (Odum 1951, 405).*

With the pressures of growing populations, changing urban and environmental landscape, devolution of government and inevitability of fluctuating economies, the land-use planning field recognized that negative impacts to social and ecological welfare warranted cross-jurisdictional responses (Forster 2001, 1, 4; ARS 2000, 4; Katz 2000, 3). Regionalism is implemented to advance the common good across jurisdictions, benefiting from economies of scale, and reducing negative externalities (Gerber and Gibson 2005, 7-8; Kimball 2002, 2; USCOP 2004, 57). The common good refers to economic growth, enhanced public services, and improved environmental conditions and communities (ARS 2001, 7). Recognizing the interdependence of regional economies, environment, and societies, regional leaders collaborate vertically across levels of government and horizontally across different sectors creating "networks of responsibility" (ARS 2000, 16-17; ARS 2004; Forster 2001, 16).

Four benefits or goals of this regional coordination are developing new economies, making communities livable, creating inclusive community-based regionalism, and reforming government (ARS 2000, 14). Other more specific benefits include sharing and learning from others, encouraging economic development by providing the private sector with predictable and consistent policies, and improved coordination for negotiating and dealing with higher levels of government (Cicin-Sain et al. 1990, 88).

There are several challenges when implementing regionalism. The first is defining the region – a function of social, economic, and political processes and contexts (Paasi 2002, 805; MacLeod 1998, 836-837; Juda 2002, 23). Region definitions describe the region's physical and administrative characteristics (Jones and MacLeod 2004, 435-6). Other examples or hurdles that must be faced in dealing with regionalism are: "…overcoming a weak sense of regional identity; finding consensus on political strategies for regional change; forming and benefiting from a "big tent" coalition…; overcoming a bias to shy away from contentious issues…; and responding to often inconsistent federal and state policies" (Forster 2001, 25). Despite these hurdles, regionalism offers a more comprehensive opportunity to address cross-jurisdictional and cross-sectoral ocean and coastal issues.

c. Place-Based Management and Planning

Single-sector approaches to management abound in ocean and coastal management (Cicin-Sain and Knecht 2000, 287; Davis 2003, 339). In the field of marine affairs, area-based and place-based are often times used interchangeably to qualify management foci of integrated, multi-sector approaches to management. Some authors use area-based to discuss single-use management, such as fisheries management or other special management areas such as marine protected areas (see St. Martin 2001, Guerry 2005) while others use place-based (see Norse et al. 2005, 303). Cicin-Sain and Knecht use area-based to characterize integrated, multi-sector management programs such as National Estuarine Programs (NEPs), National Marine Sanctuaries (NMSs), and coastal

zone management (2000, 287). Clearly there is confusion or disagreement over the terms and clarification is needed. This can be accomplished simply by restating the definitions of the two terms.

An area is a space bounded by a line, or the extent of a surface (Oxford 1989). It is very easy to understand and is a technical term (i.e., it can be measured) which may be why it is a popular term with technique-oriented fields such as ocean and coastal management. It makes no mention of human activities or values though our management is inherently geared towards some aspect of human interactions with the oceans.

As illustrated in the previous section, place is much more complex and involves the social sciences because of the interdependence of human interactions and the oceans or intrinsic values people hold. Therefore, while intended and often used to indicate integrated, multi-objective management within an ecosystem, the phrase area-based management is imprecise and not comprehensive enough since the ecosystem or spaces being managed under this term are truly *places* by definition and require such acknowledgement. For future discussions, the term place-based management should be used to describe an approach that uses geographic places for managing multiple goals, objectives, problems, uses, interests, users, resources and shared ways of knowing (adapted from NOAA 2005c; Davis 2003, 340; and Cheng and Daniels 2003, 843). It is now time to discuss place-based management and planning in greater detail. A review of place-based planning in land-use planning reveals many of the same goals and functions of place-based management in the oceans and offers us greater insight into ocean applications.

In ocean management, current planning institutions are limited in practice and are primarily equipped to manage single issues or subject areas, not multiple issues or systems (Cicin-Sain and Knecht 2000, 280). This is often characterized as a “stove pipe” approach (ARS 2001, 7; NRC 2001, 4). Place-based planning engages in interdisciplinary and holistic community and environmental planning to make communities more livable and sustainable (NRC 2001, 4-6). Clearly defined boundaries help policymakers and managers integrate multiple management objectives and authorities, interests, and ecosystem processes (Davis 2003, 340). In addition to improving communities and the environment, place-based planning seeks to incorporate a more inclusive decision making process involving the public and improve decision support systems and the integration of scientific information into planning processes (NRC 2001, 5-6). To accomplish these goals, place-based planning requires: new management models, methods, technologies, and decision strategies; knowledge of geographic, social, and cultural characteristics of a place; legitimate derivation and clarity of goals and objectives for improving communities, and understanding and improving ownership of place by its inhabitants (NRC 2001, 5).

Place-based planning involves not only how we manage human activities within the constraints of natural systems but also how we understand and define a place or region and how that impacts how we manage our resources and ourselves. The concept of ROG attempts to achieve the objectives of place-based management in the ocean and coastal realm. Breaking down ROG into its terms will illustrate this further.

d. Regional Ocean Governance

Geographic Scope of Regions. In geography and metropolitan planning, the geographic scope of regions is variable in scale and reflects the extent of common problems or interests (Pollard 1951, 206). In some instances region refers to towns and in other situations it refers to whole nations (MacLeod 1998, 836). Regions are derived by the interaction of economic, social, and political forces (Paasi 2002, 805; MacLeod 1998, 836-837; Juda 2002, 23). The boundaries are sometimes diffuse (e.g. ecosystem boundaries) and sometimes clearly defined (e.g. legal jurisdictions) (MacLeod 1998, 837). The same variety exists in ocean and coastal management. In the US there are seven recognized LMEs[10], sizes of which are upwards of 200,000 km^2, with scientifically derived boundaries based on bathymetry, hydrography, productivity, and trophically dependent populations (Sherman 2002, 59; URI 2005). There are also watershed management regions delineated by hydrology and topography (EPA 2005a; Beatley et al. 2002, 175). These are just two of the handful of regional approaches that exist in ocean and coastal management.

In using region to focus ocean governance, both Pew and USCOP intended to cast a net over a vast range of ocean issues. Driven by principles of EBM, the underlying rationale for regions is biogeographic and not political or jurisdictional, though as already discussed the cause for such a rationale is the limitations of political or jurisdictional

[10] The seven US LMEs are: East Bering Sea, Gulf of Alaska, California Current, Gulf of California, Gulf of Mexico, Southeast U.S. Continental Shelf, and Northeast U.S. Continental Shelf (URI 2005).

approaches[11]. Attention is given to LMEs for the initial extent of regions (Pew 2003, 94; USCOP 2004, 58) subject to regional revision because they cover large ocean and coastal areas and their upland watersheds and cross jurisdictions (Sherman 2002, 59; URI 2005). A broad spatial scale such as LMEs is needed to overcome problems with historic development of separate management regimes for ocean and coastal areas (Juda 1999, 90) and a lack of integrated policies to address impacts of one use or activity on another (Cicin-Sain and Knecht 2000, 16). Since regions cover and cross multiple jurisdictions, states and federal agencies are provided greater opportunity to increase coordination between and among each other (Cicin-Sain and Ehler 2002, viii).

Scope of "ocean". Consistent with the USCOP recommendations, in the context of ROG "ocean" is the area from the upland watersheds seaward to the exclusive economic zone (EEZ) in a very general sense. Such a large area includes upland watersheds and inland estuaries, shorelines, and state and federal waters. When dealing with upland watersheds and inland estuaries and coastal regions, there exist well-established and tested legal regimes, coordinating mechanisms and leadership for many of the common issues tackled. Federal, state, interstate, and tribal governance arrangements already exist for many inland and coastal areas, driven by issues such as endangered species, urbanization, beach erosion, and many other coastal issues.

However, when dealing with offshore areas of the ocean either at the boundary of state and federal waters or in strictly federal waters, there is an increased recognition of

[11] Some boundaries such as the EEZ cannot be ignored and do limit the scope of coverage, though it does not preclude international cooperation on shared or common issues.

the role of oceans in resource management, hazards, climate change, exploration, and technology that was under-appreciated in the past (USCOP 2004, 30-31). Scientists are learning more about the effects of ocean conditions and processes on phenomena such as harmful algal blooms (HABs) and hypoxic events that impact commercial and recreational fisheries and human health (Hoagland et al. 2002; Dubravko et al. 2003; Horner et al. 1997). Thus, there is greater societal need to focus attention on the ocean areas.

There is also a lack of coordinated offshore management policy for growing activities such as bioprospecting, mariculture, wind farms, wave and current energy, observing systems and research stations (Firestone et al. 2004, 72; Cicin-Sain 2002, 2). No comprehensive regulatory authority currently exists for mariculture or bioprospecting and an incongruity between the regulatory needs and regulating agencies for wind farms and alternative energy projects (Firestone et al. 2004, 72-3). Thus, there is a regulatory need to extend coordination into the oceans. By adding "ocean" to regional approaches in an arena with abundant coastal regional coordination, these new factors are explicitly included.

Defining "governance". So what is governance and why do we want governance? Applicable excerpts from the Oxford English Dictionary define governance as

> *1b. Controlling, directing, or regulating influence; control, sway, mastery. 2. The office, function, or power of governing; 3. The manner in which something is governed or regulated; method of management, system of regulations. A rule of practice, a discipline. 4. Conduct of life or business; mode of living, behaviour, demeanour.*

There also exist multiple definitions of governance throughout the field of marine affairs. Table 2 provides five definitions from marine affairs, one of which is specific to ROG. Each of these definitions provides a different perspective. Kimball (2002) and Cicin-Sain and Knecht (2000) emphasize a legal "regime" approach. Cicin-Sain and Knecht limit the geographic coverage of ocean governance to the territorial sea, EEZ, and depending on the location, parts of the continental shelf, with the ultimate goal of maximizing long-term public benefits; interestingly, there is no mention of including coastal and inland areas (2000, 14). Juda (1999) and Rosenau (1999) are more inclusive of non-legal

Table 2. Selected Definitions of Governance

Author(s) *Concept*	Definition
Cicin-Sain & Knecht 2000 *Ocean Governance*	"…the architecture and makeup of the regime used to govern behavior, public and private, relative to an ocean area and the resources and activities contained therein" (14).
Juda 1999 *Governance*	"…the formal and informal arrangements, institutions, and mores which determine how resources or an environment are utilized; how the problems and opportunities are evaluated and analyzed; what behavior is deemed acceptable or forbidden; and what rules and sanctions are applied to affect the pattern of resource and environmental use" (91).
Kimball 2002 *Regional Ocean Governance*	"…the international legal and policy frameworks governing ocean use at the regional level and the international organizations active in any particular region" (1).
Rosenau 1999 *Governance*	" …activities backed by shared goals that may or may not derive from legal and formally prescribed responsibilities and that do not necessarily rely on police powers to overcome defiance and attain compliance…a more encompassing phenomenon than government" (4).
Young 1996 *Governance*	"…a social function whose performance is crucial to the viability of all human societies; it centers on the management of complex interdependencies among actors (whether individual, corporations, interest groups, or public agencies) who are engaged in interactive decision-making and, therefore, taking actions that affect each other's welfare" (2).

regimes such as mores and informal institutions. Young (1996) is most inclusive of all types of regimes and players in his definition which focuses on the social function of decision-making.

Why governance? There is clearly no shortage of management of ocean and coastal places. The list includes reserves, estuary programs, LME management, special area management planning, watershed planning, estuary reserves, marine sanctuaries, refuges, coastal zone management (CZM) and others. Most of these are legally constituted and controlled or managed by rules and regulations. While governance may share these prescriptions for management, it offers the possibility and utility of non-legal measures for influencing behavior through norms (Miles 1999, 1-5), mores, agreements, and other "soft" or less rigid approaches.

Many of the existing management approaches to ocean places lack a holistic approach described earlier or are not well positioned or designed to address continued problems or emerging issues. For example, sanctuaries only regulate certain activities designated in their management plans, and defer to regional FMCs for fishing regulations (16 U.S.C. 1434(a)(4-5)) and LMEs possess the mismatch between ecosystem scale and jurisdictional boundaries (Juda 1999, 93). The distinction to be made between ocean management and governance is simple: most management regimes deal with managing resources for preferred outcomes or directives (Cicin-Sain and Knecht 2000, 14) or they deal with managing a limited set of human activities without regard for impacts on other activities (Cicin-Sain 2002, 2). Governance focuses on managing the full spectrum of

human activities within the scope and context of the ecosystem (Cicin-Sain 2002, vii), including consideration of its properties and processes (Cicin-Sain 2002, x).

Generally, there is a move towards governance and away from government as a result of significant changes caused by economic and technological change (Madanipour et al. 2001, 1). Traditional government institutions focused on process and space planning are no longer capable of keeping up with the ever-distributed network of economic activity and its impacts (ARS 2000, 3). The fast flow and access of information has also led to a public more informed and skeptical of its authority (Madanipour et al. 2001, 1). The result is a geographic mismatch between government and the activities it governs. In oceans and coasts, there is greater realization of the geographic mismatch between ecosystem processes, human activities and traditional jurisdictions. The sources of some of the problems facing the oceans and coasts lie outside the jurisdictions of the coastal zone and ocean political boundaries. Similarly, many ocean activities impact multiple jurisdictions (Cicin-Sain and Knecht 2000, 279). Fundamentally, governance is needed to better manage human uses and impacts on resources while also managing resources themselves.

Summary

Regional coordination is common in land use planning when shared interests or problems of a place require greater coordination of jurisdictions and institutions to find solutions. The places in or for which this coordination occurs are complex and are a function of social, economic, and physical interdependencies. As such, regional entities attempt to coordinate across jurisdictions to reduce negative externalities on others and to

benefit from economies of scale. The result is improved economic growth, an improved environment, and more effective public services. The concept of place-based management reflects the needs and functions of regionalism.

While many ocean and coastal area-based management activities exist, few look holistically at the notion of place and incorporate combined social, economic and physical processes, actors, and properties making effective and sustainable management difficult. Thus, there is a distinct difference between more technical area-based management and more holistic place-based management.

Defining place is a challenge in both land use planning and marine affairs. The complexity of the social and ecosystem processes make drawing a static regional boundary line a challenge and often undesirable. In some cases, limitations are imposed by jurisdictional boundaries that cannot be ignored, such as the EEZ. It is critical that the boundaries drawn reflect the scale and extent of the common problem or opportunity and all its social, economic, and ecosystem attributes. In some cases this may be an LME, while in others it may be a sub-ecosystem of an LME. In all cases, consideration should be given to the reach of governance to include upland or inland watersheds and estuaries since human activities in those places impact activities and resources in the oceans. Preference is for regional definitions that allow integrated management of the place and activities.

Chapter 3. Developing an Analytical Framework

By defining ROG in it most simple terms and discussing notions of place, place-based planning, regionalism, and governance it was clear there are several key principles and elements required for ROG. This chapter seeks to establish an analytical framework that can be used to assess existing ocean management activities or conceptualize new regional ocean governance activities. To do so requires expanding and building on the previously described key principles in Chapter 2. Expansion of these principles draws from three sources or concepts: ROG in the USCOP report (herein referred to as USCOP ROG), EBM, and Regional Stewardship (RS). Each of these sources promote or use key concepts to overcome problems with jurisdictional constraint, inequity, top-down decision making, decline in environment health, and other hurdles. The USCOP ROG concept provides a broad framework that is applicable to all aspects of marine affairs – conservation, economic development, resource management, national security, human health, tourism, and many other areas. Its focus is primarily on new approaches and greater consideration of fit, scale, and interplay and other institutional dimensions[12]. EBM provides a framework for centering regional coordination on ecosystems instead of single resources. It also introduces a focus on sustainability in approaching human-ecosystem interaction issues. RS provides a new focus in achieving the sought after changes in USCOP ROG and EBM by emphasizing the power of the individual and a distributed network of influence and authority to enhance existing institutions or organizations. Combined they provide three different components for a well rounded

[12] For a more formative discussion of fit, scale and interplay see Young 2002.

analytical framework for ROG, the utility of which is to: (1) provide a tool for assessing existing management activities; (2) serve as a compass for fleshing out new ROG activities like the many nascent activities forming around the country; and (3) simplify often misnamed or described components of USCOP ROG, EBM and RS into a common language.

Among and between these three concepts are commonalities and differences. Often they are defined or constructed differently. Terms such as goals, purposes, principles, elements, functions, and tools are inconsistently used to describe key concepts, including ecosystem management (Wang 2004, 43), making it difficult to compare or contrast two different concepts.

With that in mind, this section utilizes the terms *principles* and *elements* as classification categories. Principles refer to general concepts or theoretical foundations that underpin the regime. Elements are goals, functions, actions, and tools. Since terminology is inconsistently used it is also sometimes difficult to directly relate elements to underlying principles. Therefore, principles and elements will be highlighted separately and a cursory attempt will be made to correlate principles to elements when possible. Once practitioners agree on consistent terminology it may then be possible to directly and clearly link all proposed elements with driving principles making for a more thoroughly defined concept of ROG. Finally, goals and purposes will not be discussed since they will vary by region and issue, though undoubtedly there are a few common overarching goals or purposes that will be a factor in most ROG activities (i.e., ecosystem restoration, conservation, water quality improvement, etc.).

Concepts or terms that fall under the categories *principles* or *elements* also exhibit definitional variations and further complicate attempts to compare and contrast[13]. As with most aspects of ROG, attempts to define concepts or terms may require adjustment to the context in which they are applied. Therefore, the intent of this section is to highlight those that can play an important role in ROG, not to define each of these terms or concepts in the abstract.

a. ROG concept from USCOP

Chapter 5 of the USCOP report and earlier discussions of ROG in Chapter 1 offer a variety of principles and elements to guide or be incorporated into ROG. The following tables identify each of the principles (Table 3) and elements (Table 4) discussed[14]. The left column lists the principles or elements raised in USCOP ROG and the right column indicates the corresponding elements or principles (respectively) discussed in the USCOP report. It is clear from both lists that gaps and overlap exist in the approach offered. For example, the bottom up principle (P2) raised by USCOP ROG is not supported with specific elements. The concept is discussed generally but no specific functions, actions, or tools are recommended. A lack of supporting elements does not reduce the value of the principle, nor does a lack of corresponding principles reduce the value of an element, it merely highlights the need for a more developed and structured concept or framework – work that can be done by regions.

[13] For example, precaution and precautionary principle can be used and defined in a variety of ways (Vanderzwaag 2002).
[14] The principles and elements listed were identified by reading the USCOP section on ROG and are in no order of importance.

Table 3. USCOP ROG Principles

ID	Principles	Corresponding Elements
P1	Ecosystem Based Management Approaches and Scale	
P2	Bottom up	-
P3	Voluntary	-
P4	Flexible, incremental coordination	E5, E15
P5	Broad scale, scope and membership	E4, E7, E9, E12, E13.E14, E15
P6	Region specific focus	E1, E5
P7	Wide range of issues	E1, E3, E6, E7, E9, E13, E14
P8	Build on existing activities	E4, E5, E10
P9	Federally supported	E7, E10
P10	Information needs identified by user community	E1, E13, E14
P11	Use best available science	E11, E12, E13
P12	Strives to balance diverse societal objectives	E1, E4, E6
P13	Adaptive	E8
P14	Considerate of multiple external influences	E12
P15	Watersheds	-
P16	Oceans	-
P17	Coasts	-
P18	State supported	-
P19	Place-based	-

The USCOP ROG concept also adds several more principles: ecosystem-based management and approaches (P1), bottom-up (P2), build on existing activities (P8), and use best available science (P11). These additions reflect the unique needs of ocean and coastal governance that are not necessarily quintessential to land-use governance. They highlight the need for a regionally driven ecosystem-based approach supported by existing and unique governance approaches and informed by robust information. It will be clear in the next two discussions that EBM and RS may offer principles or elements to fill these gaps, simplify overlaps, or provide something new to the concept.

Table 4. USCOP ROG Elements

ID	Elements	Corresponding Principles
E1	Develop regional goals and priorities	P6, P7, P10
E2	Develop measurable goals and implementation strategies	E12
E3	Conflict resolution	P7
E4	Horizontal and vertical coordination	P5, P8
E5	Enhance existing activities	P4, P6, P8
E6	Stewardship	P7
E7	International Cooperation	P5, P7, P9
E8	Monitor and evaluate effectiveness	E13
E9	Public awareness	P5, P7, P9
E10	Federal agency coordination	P8, P9
E11	Generate and use information products	P11
E12	Research, data collection, monitoring, and observations	P5, P11
E13	Comprehenesive regional information plan	P5, P7, P10, P11
E14	Conduct ecosystem assessments	P5, P7, P10, P11
E15	Outreach, education, training and technical assistance	P4, P5
E16	Regional councils	P2, P5

b. Ecosystem-Based Management

Both Pew and USCOP emphasize ecosystem-based management (EBM) as essential to ROG. There are a variety of definitions of EBM yet there is no consistent terminology for describing the concepts that embody or make up EBM (Wang 2004, 43). This section highlights more recent discussions of EBM/EAM from significant national movements and key influential experts on the subject and is divided into sections using terminology similar to that used to describe the USCOP ROG concept: *definitions* refers to general statements that summarize the concept; *principles* is used to describe fundamental notions that drive EBM; and, *elements* is used to describe functions, activities or tools.

Definitions

The Scientific Consensus Statement on Marine Ecosystem-Based Management signed by 219 science and policy experts in academia defines EBM as:

> *"…an integrated approach to management that considers the entire ecosystem, including humans" (McLeod et al. 2005, 1).*

In his discussion of sustainable natural resource development, Schlaepfer defines EBM as:

> *"…a systematic process, based on good judgment and sound science, and aiming, for a defined area, at the sustainable use of natural resources, by increasing the ecological sensitivity and content of management practices, and by integrating economic, ecological, social, and technological considerations, over both the short and long terms, from the site to the landscape-scale ecosystem" (1997, 19).*

Perhaps the most concise and brief definition comes from Christie et al.:

> *"…an integrated comprehensive approach to management of all human activities in the ocean" (2005, 5).*

These three definitions are among a dozen or more definitions specific to marine affairs. They illustrate the spectrum and suggest a plethora of principles, goals, elements and functions. Emerging from them very clearly are the principles of integrated management and consideration of the whole ecosystem, including incorporation of all human activities at varying spatial and temporal scales – two very important departures from existing management approaches. A review of the explicit principles and elements often cited in these concepts further supports this understanding.

Throughout the literature there are dozens of principles, goals, elements, functions, concepts, and tools deemed foundational or critical to EBM and thus to ROG. It is possible that those descriptors that appear most frequently are generally accepted as

useful to constructing notions of EBM. However, many times the same descriptor is used differently. The difficulty with interpreting from the literature is that the purview of the article or source may not have allowed the author to include that descriptor in his or her commentary. Therefore, important descriptors may be absent from any list generated.

The following Table 5 and Table 6 synthesize the descriptors of EBM mentioned in the selected sources. As with the earlier discussion of USCOP ROG in this chapter, the tables utilize *principles* and *elements* to represent categories of descriptors. Table 5 cross-references the principles from the left column with the literature sources in the right columns. Table 6 cross-references the elements from the left column with the literature sources in the right columns. Neither table represents a complete list of principles or elements, only those commonly found in the cited definitions of EBM. Information was transcribed from articles or publications. A black dot indicates authors discussed that element directly. Descriptors in the left columns are listed in order of highest to lowest frequency of occurrence in the cited literature.

In Table 5, several principles are supported by a majority of the references cited. As expected, many of these (i.e., P1, P4, P5, P6, P8, P10, P12, P15, P16, P19, P20, and P21) align with those found in Table 3. Additions to the growing list of principles include adding oceans (P2), coasts (P3), and watersheds (P7) to the scope of coverage, the concept of sustainability (P11) as a principle and goal, and the principle of equity (P22) – that costs and benefits should be equitably distributed across all sectors and levels. Other

Table 5. EBM Principles

ID	Principle	Schlaepfer 1997	Juda 1999	USCOP 2004	Wang 2004	NOAA 2005b	McLeod et al. 2005	Christie et al. 2005
P1	Considerate of multiple external influences	●	●	●	●	●	●	●
P2	Oceans		●	●	●	●	●	●
P3	Coasts		●	●	●	●	●	
P4	Integrative/Integrated	●	●		●		●	●
P5	Strives to balance diverse societal objectives	●	●	●	●	●		
P6	Flexible, incremental coordination	●	●	●	●		●	
P7	Watersheds		●	●		●	●	
P8	Humans are part of the ecosystem		●		●		●	●
P9	Adaptive	●	●	●		●	●	
P10	Ecosystem specific planning and action		●	●	●		●	
P11	Sustainability	●	●		●		●	
P12	Consider multiple scales and time horizons	●	●		●		●	
P13	Takes account of ecosystem knowledge and uncertainty				●	●	●	
P14	Place-based			●			●	
P15	Use best available science			●	●			
P16	Regionally directed, bottom up			●		●		
P17	Consider cumulative effects		●				●	
P18	Precaution		●				●	
P19	Build on existing activities			●				
P20	Federally supported			●				
P21	Voluntary			●				
P22	Equity		●		●			

notable additions illustrate the emphasis of science and information as crucial to decision making: adaptive (P9); takes account of ecosystem knowledge and uncertainty (P13); consider cumulative effects (P17); and precaution (P18). Although most of these principles fall under P1 in Table 3 (EBM approaches and scale), explicit mention of them allows a greater understanding by those not already loyal to a particular EBM definition. Once again, the list of principles in Table 5 is by no means comprehensive or appropriate for all ROG approaches. However, they do offer what many believe to be the key

principles that should underlie all EBM activities, an extension or application of which is ROG.

Table 6 illustrates the breadth of elements that could be considered. Despite its length, the list is not comprehensive and will likely change depending on the regional circumstances. However, it does begin to present more specific elements directed at ecosystem function, such as E19-24 which emphasize maintaining biodiversity through tools such as marine reserves, zoning, protection and restoration, and market based and economic incentives (E24). Several of these could be grouped into a general element "consider all available management tools such as reserves, zoning, market incentives, etc.)," since no one of these is necessarily vital to all EBM approaches in all regions but to address specific needs.

Other important new elements provided by EBM in Table 6 contribute to institutional dimensions or process and include: adaptive management (E1), assessment of human uses (E9), boundary determination (E13), regional councils (E15), and co-management (E16). Adaptive management and assessment of human uses are similar to E8 and E14 in Table 3. In Table 6, boundary determination (E13) is a critical element and is one of the first challenges to regional coordination as mentioned in Chapter 2. Co-management is a useful tool though its use comes primarily from fishery management in LMEs and its utility to EBM or ROG must align with regional needs. As with previous discussions of Tables 3 and 4, many of these elements correspond to several principles in Table 6. Correlating each of these would result in an unreadable list as most elements connect to many of the broader principles in Table 5.

Table 6. EBM Elements

ID	Element	Schlaepfer 1997	Juda 1999	USCOP 2004	Wang 2004	NOAA 2005b	McLeod et al. 2005	Christie et al. 2005
E1	Adaptive Management	●	●	●		●	●	
E2	Generate and use information resources	●	●	●	●		●	
E3	Development of institutions and policy that is integrative both vertically and horizontally	●	●	●			●	
E4	Oversight, evaluation, monitoring, and assessment for mid-course changes	●	●	●			●	
E5	Federal agency coordination		●	●	●		●	
E6	International Cooperation		●	●	●		●	
E7	Outreach, education, training, and technical assistance	●	●	●	●			
E8	Establishment of scientifically and sociologically appropriate goals, objectives and priorities	●	●	●	●			
E9	Assessment of human uses	●	●	●				
E10	Broad participation; involve all stakeholders	●		●			●	
E11	Ecosystem assessment	●	●	●				
E12	Regulation, monitoring, and enforcement	●	●	●				
E13	Boundary determination		●	●				
E14	Stewardship			●			●	
E15	Regional councils		●	●				
E16	Co-management		●				●	
E17	Conflict Resolution			●				
E18	Enhance existing activities			●				
E19	Facilitate connectivity among and within marine ecosystems						●	
E20	Maintain historic levels of native biodiversity						●	
E21	Protection and Restoration Primary Focus						●	
E22	Use marine reserves						●	
E23	Use Zoning						●	
E24	Market based and economic incentives		●					
E25	Advisory boards		●					

The principles and elements offered by EBM enhance those provided by USCOP ROG. The breadth and diversity of principles and elements is indicative of the ongoing attempts at EBM throughout the field. In EBM, we see a convergence of institutional

dimensions with ecosystem properties in principles such as adaptive management, maintaining sustainability, using precaution, and considering cumulative impacts. Similar to USCOP ROG there is strong emphasis on using scientific information to guide decision making through the use of best available science and advisory boards.
As discussed in Chapter 2, the NOAA EGT, FMCs, and individual states are already exploring and operationalizing many of these principles and elements. In due time, we will learn from these experiences the value of these principles and elements and about the process of implementing them on an ecosystem scale.

An important element highlighted in the USCOP ROG and EBM discussions is *stewardship*. Both the USCOP (2005) and scientific consensus statement on EBM (MacLeod et al. 2005) highlight the importance of stewardship to ROG and EBM respectively. In the EBM statement, stewardship is an outcome of co-management involving multiple levels of government and all stakeholders. In USCOP ROG, stewardship is a pillar of all ocean policy and management activities, and involves development of advice and collaboration on ocean issues (see Figure 1) and is a role to be inspired in everyone (USCOP 2003, 57). A different or more developed notion of stewardship that offers new principles and elements to ROG is discussed in the next section.

c. Regional Stewardship

This section discusses *regional stewardship* and regional stewards as developed by the Alliance for Regional Stewardship (ARS) and is the third component of the analytical

framework[15]. Earlier discussions explained the reasoning for and benefits of regionalism and governance over traditional government and sectoral management of the oceans. These discussions highlighted the importance of cross-boundary approaches to better manage places and their inhabitants and resources. In the context of oceans, EBM and USCOP ROG are two such approaches that focus on institutions and ecosystems respectively. However, fundamental to each of these perspectives and approaches and receiving less attention in discussions on ROG are *people*. People are the leaders, decision makers, scientists, resource harvesters, recreationalists, and aestheticists and wield enormous influence over the fate of their regions or ecosystems. Therefore, in one sense USCOP ROG and EBM only address the symptoms but not the cause of those symptoms – people. After all, people are just as, if not more, influential over ecosystem health as ocean currents or benthic fauna. RS addresses the cause by highlighting the importance of the role of the individual as a regional steward. While much of the ARS literature emphasizes the role of high-level stewards, I expand RS to include stewards at all levels of social hierarchy so that stewards range from high-level regional leaders to mid-level managers to the lay public. Each of these three groups can become regional stewards and influence the welfare of their regional ocean ecosystems.

RS arose in the metropolitan planning field out of recognition that traditional government and leadership were unable to adequately address cross-jurisdictional problems, particularly as the political, economic, and social environments in which they

[15] Regional stewardship is a concept developed and promoted by the Alliance for Regional Stewardship. Much of the following discussion of regional stewardship comes from several useful white papers and other useful references published by the Alliance for Regional Stewardship available on their Web site at http://www.regionalstewardship.org.

operated were changing rapidly (ARS 2000, 4-7). The effects of this inadequacy were a new “anonymity of leadership” and institutional mismatch such that leaders became less committed to specific places, and existing institutions (i.e., traditional local governments) were unable to address the scale and scope of the problems they faced (ARS 2000, 5-6). The resulting need for new ways of approaching these challenges produced RS. Thus far, this story sounds much like that of ocean and coastal management; simply add “ecological” changes to the list of rapidly changing factors contributing to the failures of traditional institutions and the story is all too familiar.

Throughout the ARS literature there are four goals that drive all RS activities. These include promoting economic activity, creating “great” places to live and work for present and future generations, ensuring broad participation, and exploring new and creative governance (ARS 2000, 14, 22). The result appears to be greater attention to the processes for addressing problems and acknowledgement of the necessity of sustainable human interaction with places. Each of these goals is applicable to ocean and coastal management. Promoting economic activity is easily found in fisheries, marine transportation, offshore energy, and other activities. Creating great places to live can be found in coastal management programs where states attempt to harmonize economic and environmental welfare. Ensuring broad participation as described by ARS is not often found, except perhaps at more local levels. Finally, exploring new governance is the purpose of this new debate on ROG. These parallels suggest RS is directly relevant to ocean management and offers important principles and elements.

So what is RS? It is the commitment of regional stewards to the long-term well being of a place (ARS 2000, 3). According to the ARS model, this means regional stewards link people and organizations in different jurisdictions, sectors, and disciplines to create what is called a "network of responsibility" or broad coalition to promote vibrant regions (ARS 2000, 4-5). They are in effect attempting to fill the voids of leadership and authority or make connections for regional problems that transcend multiple boundaries and where no regional institution exists. Underlying this practice are the principles of integration, equity and inclusion.

Consistent with principles promoted by USCOP ROG and EBM, RS networks coalesce through the use of more voluntary, flexible, and non-legal arrangements (ARS 2000, 12-13). Another key principle and function of RS is to develop regional stewards by linking stewards to those within and outside their respective regions in peer-to-peer learning networks (ARS 2000, 26-27). The premise is that informed stewards with support from each other make for better stewards and therefore better regions. Therefore, learning from others and developing regional stewards are key principles.

So who are regional stewards? When describing them, ARS uses terms such as courageous, innovative, risk-takers, strong convictions and regional vision (ARS 2000, 9). Much of their discussion alludes to high-level leaders. While high-level leaders do have large-scale impacts, middle- and lower- level stewards are equally important, as the cumulative effects of their actions can be significant.

It is possible to detect examples or components of RS in ocean management today. An example of a network of responsibility between bordering states and nations that

share common waters is the Gulf of Maine Council on the Marine Environment (GOMC), which is advocated by David Keeley who could be described as a regional steward for the Gulf[16]. We also see peer-to-peer networks taking shape in ocean management as exemplified by the meeting of regional leaders from across the nation this summer at the Coastal Zone 2005 conference[17]. However, these examples came from inspired individuals and not a deliberate attempt to build and support RS and a cadre of regional stewards.

Table 7. Traditional Leadership vs. Regional Stewardship

Traditional Leadership	Regional Stewardship
One jurisdiction, one organization	Multiple jurisdictions and organizations
Specific problem or goal	Integrated vision for the region
Single network	Diverse collaborative networks
Commitment to an idea/cause	Commitment to place

(Source: ARS 2000, 8)

Table 7 offers a comparison of traditional leadership and RS. We can see that three of the four key elements of RS are consistent with EBM: multiple jurisdictions and organizations, integrated vision for the region, and commitment to place. Table 8 illustrates there are also some similarities with EBM and USCOP ROG principles: inclusive, educational, empowering, flexible and adaptive, professional, collaborative, balances human uses and the environment, equity, and open and accountable processes (ARS 2001, 19-21). Naturally, many of the elements related to these principles are also similar to USCOP ROG and EBM: public education, cross-jurisdictional and cross-

[16] For more information on the GOMC see Appendix D.
[17] See discussion in Ch. 1(g) and footnote 3.

sectoral institutional approaches, adaptive management, broad participation, ecosystem specific focus, regionally driven and many others (ARS 2001, 15) (see Table 9 for a complete list of RS elements). The new contributions of RS are: learning from others, developing leaders, supporting regional networks, and developing peer-to-peer learning networks.

RS is driven by the desire for more livable communities and is similar to the marine affairs community desire for more sustainable ecosystems and economies. It brings to attention the very processes and leadership at all levels that facilitate success in regional efforts. Adopting the principles and elements of RS injects ROG with a new understanding or approach to leadership and new tools to enhance leaders' abilities to address the challenges we currently face and those that lie ahead. Combined with USCOP ROG and EBM there are plenty of principles and elements around which to form an analytical framework.

Table 8. Regional Stewardship Principles

ID	Principle
P1	Strives to balance diverse societal objectives (economic, environment, and social well being)
P2	Flexible, ad-hoc, incremental coordination
P3	Adaptive
P4	Voluntary
P5	Region/Ecosystem specific planning and action
P6	Regionally directed, bottom up
P7	Federally supported
P8	Considerate of multiple external influences
P9	Watersheds
P10	State supported
P11	Commitment of leaders to place
P12	Wide range of issues
P13	Broad scale, scope, membership in coalitions
P14	Governance reform and innovation
P15	Integrative/Integrated
P16	Equity
P17	Sustainability (environmental well being, health environment)
P18	Broad prosperity (economic, environment, and social well being)
P19	Inclusion
P20	Learn from others
P21	Development of regional stewards
P22	Regions as partners with federal & state governments
P23	Support regional networks
P24	Inclusive communities for present and future generations
P25	Leaders are catalysts for change
P26	Long term well being of places

Table 9. Regional Stewardship Elements

ID	Element
E1	Mobilize coalitions
E2	Networks of responsibility
E3	Regional networks
E4	Connect within and across regions
E5	Peer-to-peer network
E6	Knowledge networks
E7	Distributed/networked governance
E8	Innovative arrangements or institutions
E9	Public-private partnerships
E10	Involve leaders, citizens, interest groups, and policy professionals
E11	Recruit and engage policy professionals
E12	Develop national and state support
E13	End top-down stovepipe models
E14	Leverage federal funding
E15	Experimentation
E16	Regional plans
E17	Develop regional stewards
E18	Understand pathways to leadership
E19	Share best practices and lessons learned
E20	Information sharing

d. The Analytical Framework and Process: A Three-Step Approach

Previous discussions of principles and elements revealed some commonalities and differences between USCOP ROG, EBM and RS. Table 10 presents the complete list of principles and highlights where there is consistency or agreement and gaps[18]. The primary conclusions to be drawn from observing these tables is that the three sources (USCOP ROG, EBM, and RS) share in common at least 10 principles, but that each offers a different perspective. Each perspective brings its own focus and offer three different ways of approaching challenges: the USCOP ROG concept provides an

[18] Discussing or review the elements across ROG, EBM, and RS would detract from the broader thinking required for the analytical framework. However, a compiled list of elements is available in Appendix D.

institutional perspective; EBM provides an ecosystem perspective; and RS provides a leadership or individual steward perspective. When combined they form a solid foundation or starting point from which to assess existing regional activities or begin conceptualizing new ones.

The ten shared or overlapping principles are very general but promote an adaptive, evolving holistic approach that is regionally driven and federally supported. This dichotomy of a bottom-up, yet federally supported, approach is indicative of the desire for and efficacy of smaller scale control over governance that is facilitated and joined with federal coordination and funding. The shared recognition of "place" as a unifying factor communicates understanding and acceptance of the interdependence of human activity and space and a departure from previous area-based approaches. USCOP ROG and EBM share five principles that incorporate and contextualize an approach specific to ecosystems and science. USCOP ROG and RS share three principles related to institutional membership, function, focus, and leadership. EBM and USCOP ROG share three principles – integration, equity, and sustainability – providing the foundation for fairness, inclusion, and long-term thinking. It could certainly be argued that the USCOP ROG concept represents integration or integrated approaches however the term was not explicitly used suggesting either it is difficult to define broadly or is understood to be a part of any future change in ocean management approaches. Continuing down the table, EBM offers five principles representative of the scientific approach, understanding, and information required when dealing with complex ever-changing natural systems. The ten principles offered only by RS are clear reflections of its focus on social and political

Table 10. USCOP ROG, EBM and RS Principles

Principle	USCOP ROG	EBM	RS
Strives to balance diverse societal objectives	●	●	●
Flexible, ad-hoc, incremental coordination	●	●	●
Adaptive	●	●	●
Voluntary	●	●	●
Region/Ecosystem specific planning and action	●	●	●
Regionally directed, bottom up	●	●	●
Federally supported	●	●	●
Considerate of multiple external influences	●	●	●
Watersheds	●	●	●
Place-based/Commitment to place	●	●	●
Ecosystem based management	●	●	
Oceans	●	●	
Coasts	●	●	
Use best available science	●	●	
Build on existing activities	●	●	
State supported	●		●
Broad scale, scope, membership	●		●
Wide range of issues	●		●
Integrative/Integrated		●	●
Equity		●	●
Sustainability		●	●
Consider multiple scales and time horizons		●	
Humans are part of the ecosystem		●	
Precaution		●	
Takes account of ecosystem knowledge and uncertainty		●	
Consider cumulative effects		●	
Governance reform and innovation			●
Broad prosperity			●
Inclusion			●
Learn from others			●
Development of regional stewards			●
Regions as partners with federal & state governments			●
Support regional networks			●
Inclusive communities for present and future generations			●
Leaders are catalysts for change			●
Long term well being of places			●
Info needs identified by users	●		

interactions as critical to any regional approach. Most of these principles relate to functions but several go beyond function to include intended or desired goals (i.e., “regions as partners”, “inclusive communities for present and future generations”, “leaders are catalysts for change” and “long-term well being of places”). Although it is recommended that goal setting occur at the regional level by the regional coordination group, few would argue that these goals are not universal and would not or should not be embraced by any new or existing regional approach. Finally, the USCOP ROG principle “information needs should be identified by the users”, suggests the importance of creating need-driven information resources. While not shared by RS or EBM, the principle is consistent with principles of “inclusion” and “regionally directed” from RS and EBM. Table 10 shows strong similarities between USCOP ROG, EBM and RS. It also draws attention to the differences in underlying thinking of USCOP ROG, EBM and RS. It is through these differences that the framework emerges.

The USCOP ROG vision is greatly focused on the institutional dimensions of a regional approach. Particular attention is given to the mechanics of integration and cooperation necessary for a regional approach on all issues that may present themselves. Their principles support changes in bureaucratic approaches. The underlying statement seems to be, “in order to move forward or reverse ecosystem decline we must change how we do business and work together more effectively at all levels.” This thinking is essential in an arena crowded with existing entities unable to reverse the decline in our oceans and coasts.

EBM brings the focus on information and knowledge, emphasizing the impacts of how we think about and understand ecosystems or the end state of resources. The first extension of this thinking is in how we view natural resources. EBM offers the more holistic ecosystem concept as an organizing unit. The second extension is that research, observation, ecosystem assessments and characterizations all lead to how we understand natural processes and our impacts on them. Accordingly, these should be used to effect our decisions and actions. Its core principle or mission statement could be, “through continuous and improved understanding of ecosystems, not just select resources, more appropriate decisions can be made to protect and sustain them and their functions, for all to enjoy.”

The RS approach emphasizes the importance of leadership and developing coalitions or networks of leaders to carry regional efforts forward. RS is intended to supplement not supplant existing regimes and institutions. It is an emerging arena for action and offers a more fluid and adaptive way for people dedicated to a specific place to come together. Embedded in this approach is the long-term perspective of regional stewards that is essential to any attempt to manage or conserve the marine realm. By identifying, connecting and developing regional stewards, greater attention can be devoted to the well being of places, in a unique way other than that offered by EBM or USCOP ROG concepts. Therefore, the RS foundational statement is, “networks of regional stewards committed to ecosystems and regions can facilitate and catalyze cooperative, equitable approaches to ensure a healthy environment and communities.”

With these three thoughts in mind, a simple three-step process can be formed to help assess existing ROG activities or explore developing new ones. This process is purposefully general to provide a starting point. A more detailed process could be developed appropriate to the specifics of a particular region. Since the formulation of the process was not quantitative, the framework is not intended to provide quantitative analysis or quantifiable results, but to serve as a guide.

Step 1. The first step is to confirm that the institutional dimensions necessary for ROG exist. Does an appropriate institutional context exist? Are the institutional components in place to support a regional approach? A starting point for this assessment is to describe the regional entities or processes in terms of their principles and elements. The tables of principles and elements discussed earlier offer several of these important principles and elements. If existing regional or sub-regional activities exist, this could be done for each. What are the priority issues? Who is addressing them? How are existing approaches voluntary, balanced, flexible, inclusive, regionally-directed, federally supported, and place-based? The benefit to establishing a baseline of institutional dimensions is to help identify what is missing or needed to move forward with an ROG approach. Of course, if the purpose is to assess existing approaches, a common language is developed to characterize and compare each in terms of ROG.

Step 2. The next step aims to determine whether or not the scope of the effort is broad and integrated enough to capture all inputs into and knowledge of the region or ecosystem so informed decisions can be made to ensure a sustainable future. This will help identify what else is needed to satisfy the principles of equity, sustainability,

precaution, and others specific to dealing with ecosystems. It also allows for identification of the appropriate tools (e.g. marine reserves) in use or needed to address issues or priorities identified in Step 1. Ecosystem specific questions related to the coverage of temporal and spatial scale, variations, cumulative effects, human impacts and others can be asked. A critical question to be asked is whether or how "humans as part of the ecosystem" is incorporated into the decision-making processes? From these questions, it will be possible to identify what an ecosystem approach means for a specific region, or whether or not existing approaches are ecosystem-oriented.

Step 3. The fundamental question this step is, "Is the leadership in place to advance a regional approach?" What is the landscape of leadership? Who are the leaders dedicated to broad prosperity (economic, social and environmental health) for the place and how are they working with others on the issues or priorities identified in Steps 1 and 2? How are they thinking and acting long-term? Are efforts made to develop leaders into regional stewards? Are regional stewards connected to one another within the region and with those in other regions? The objective is to ensure that dynamic leadership is in place or will be developed to forge new paths and solutions, not stay the steady course of institutionally focused solutions. Identifying existing or potential stewards and what role they play in regional priorities will help identify if there are gaps or overlap in leadership, if all audiences or relevant players are being reached, and what must be done to fulfill these needs to ensure sustainable places.

By completing Steps 1 through 3, the groundwork is laid for identifying the needs for advancing a regional approach or modifying existing ones to satisfy the needs and

principles of ROG. Assessing the institutional landscape, ecosystem-specific requirements, and presence of regional stewardship provides a starting point to facilitate more refined questions or next steps in proceeding with a formal process to develop or enhance ROG in a region. As the framework is applied, undoubtedly new questions will surface that may be included. The tables of principles and elements provided here will hopefully trigger new ideas and thinking about what other key principles and elements are important to ROG in general or specific to a region.

Summary

The analytical framework offered in this chapter attempts to overcome the conceptual hurdles common to such new ways of thinking as found in ROG. USCOP ROG, EBM, and RS provide three different perspectives through which to view and attack assessing existing regional approaches or designing new ones. They also offer a common language of shared principles and elements that underlie or are a part of ROG. While the range of principles is vast, there exist common principles that should be a part of any new approach in order to overcome difficulties encountered with the status quo. Equity, sustainability, balance, flexibility, long-term thinking, stewardship and many others highlighted earlier indicate a move towards more holistic approaches that seek to satisfy the needs of all interests while maintaining awareness and sensitivity to the impacts of those interests on the ecosystems on which they depend. The framework is offered as a starting point in anticipation that as ROG develops around the country, new ideas, principles, and elements will be identified. However the framework is adapted or modified for individual regions, the three essential components – institutional

dimensions, ecosystem properties and understanding, and regional stewardship – should continue to guide new regional approaches to ocean and coastal management. In a field searching for new solutions to old problems and new ones on the horizon, the analytical framework based on ROG, EBM and RS offers a new path through attention to process, scope, and leadership that may help ensure sustainable economies and ecosystems.

Chapter 4. Applying the Analytical Framework to the Gulf of Maine Council on the Marine Environment

The general framework described above has utility to both evaluating existing ocean governance activities and conceptualizing new ones. When evaluating existing ocean governance activities it is important to recognize that few if any existing governance activities embody the notion of ROG discussed earlier. Absent an existing ROG activity, it is still valuable to apply the framework to all activities in the region of interest to see how they compare, identify what is missing, and where growth or expansion is possible. In this example application of the framework as an evaluative tool, I will explore just one regional activity in New England, the Gulf of Maine Council on the Marine Environment (GOMC). The GOMC was selected because it is an example of one of the very few regional efforts in the US that is well documented. A brief overview of the GOMC and the related Gulf of Maine Ocean Observing System can be found in Appendix D. This overview and several other sources were reviewed to learn about the GOMC. The evaluation below will be exploratory and general as an illustration of the framework. The GOMC is not by definition ROG since it does not address fisheries management, transportation, offshore energy, and other issues. Therefore, in addition to the GOMC all other management activities in the region that address these other topics will also require evaluation to develop a complete picture of the region's ocean governance needs. Also, a more detailed or specific evaluation of the GOMC could yield more precise findings with additional fieldwork, research, and development of additional sub-questions. Accordingly, this review also will not delve into questions of why the GOMC exhibits specific characteristics, as others have already done (see Springer 2002).

Step 1. Institutional Analysis

The first step is assessing the institutional dimensions of the GOMC. This involves describing the principles, elements, priorities, and other areas of interest. The principles exhibited by the GOMC are in fact aligned with several of those listed in Table 10 in Chapter 3. In a 2004 presentation, GOMC consultant David Keeley (also considered the founder of GOMC and long time leader before retiring) discussed the evolution and activities of the GOMC (RNRF 2005, 23) and in doing so, illustrated how the GOMC incorporates or implements several of the key ROG principles:

Regionally directed/bottom-up: The genesis of the GOMC began through interstate cooperation on coastal zone management programs, eventually engaging bordering Canadian provinces. This led to the 1989 Governor's and Premier's Agreement on the Conservation of the Gulf which formed the GOMC. Membership is comprised of state and provincial representatives and governor appointed NGO representatives (RNRF 2005, 23).

Builds on existing activities: In its 1996-2001 Action Plan, the GOMC stipulates it will build upon existing programs as a way of building stronger connections across the region (GOMC 1996, viii). Per the 2001-2006 Action Plan, they also plan to link to and build upon existing regional activities such as National Estuary Programs (NEPs) (GOMC 2002, 8). The GOMC also leaves to existing mechanisms those issues that do not require a regional approach (RNRF 2005, 23).

Incremental: As a result of limited funding, the approach has been an incremental one that tackles a handful of regional priorities at a time (RNRF 2005, 23). For

example, to address water quality issues the Council used the years 1996-2001 to understand the distribution of trace metals and organic compounds and is using the period of 2001-2006 to better understand three of these that were determined to be of primary concern (sewage, nitrogen, and mercury) (GOMC 2002, 20). In regard to the GOMC overall, it began working primarily on environmental quality and later started addressing economic development issues (GOMC 2002, 24).

Strives to balance diverse societal objectives: Areas of focus include habitat protection, water quality issues, public education, marine debris, and sustainable maritime activities (i.e., trade, etc.) (RNRF 2005, 23; Springer 2002, 15). However, the Council is focused primarily on environmental quality and does not engage in regional trade coordination or other non-environmental objectives not previously mentioned.

Federally supported: Early coordination between the states on coastal zone management originated from federal funding through NOAA (Springer 2002, 10). In addition, the GOMC received several grants from Canadian and US federal agencies to support education, habitat restoration and citizen projects (GOMC 2002, 25, 29).

Place-based: The entire focus of the GOMC activities and those of its partners is the Gulf of Maine, a geographically defined place of unique resources and human interactions. This conclusion does not necessarily suggest the GOMC is an ecosystem-based approach to management as will be discussed in Step 2.

The preceding select examples are not exhaustive of all that should be evaluated, but they illustrate the characterization portion of this step. Additional assessment of the elements of USCOP ROG could follow. After characterizing what exists, it is then possible to determine what is missing that would further align the GOMC to the USCOP concept of ROG discussed earlier. Following this gap assessment, further analysis of reasons or solutions for these challenges could follow. In the case of the GOMC, Springer highlights many of the reasons why the GOMC exists as it does, how it can overcome the challenges it faces with funding and public and NGO participation, and in addressing fisheries issues (2002, 20-28). The GOMC does exhibit a strong institutional foundation for an ROG approach; however there are areas for improvement or enhancement to better match the concept of ROG outlined in this thesis. For example, the GOMC does not engage in policy making or planning which are fundamental to governance. It is primarily a coordination, information and extension services group that promotes a sustainable Gulf of Maine. A more thorough analysis of all principles of USCOP ROG, including some elements, will reveal specific changes necessary to make the GOMC an ROG activity.

Step 2. Ecosystem-Based Management

The next step assesses whether the GOMC follows an EBM approach. Table 10 provides a starting point to begin this assessment. Some principles that will be investigated are integration, equity, sustainability, humans as part of the ecosystem, consideration of ecosystem knowledge and uncertainty. Another area of inquiry is the overall emphasis in EBM on science and information. Whatever the final assessment, it

should be noted that the GOMC states its support for EBM in one of its four primary principles (GOMC 2005).

Integrative: "Integrative" for the purposes of ROG refers to the vertical and horizontal integration embodied by the approach. The GOMC on one level is very integrative since it engages in one way or another various levels of government (vertical) and different sectors (horizontal). However, GOMC membership is composed of primarily state planning and environmental interests and lacks representation from transportation, energy, and other non-environmental interests. However, the GOMC has supported or sponsored meetings with these groups (GOMC 2002, 10). It is also unclear how well integrated it is: are all state and federal agencies, or those appropriate to the issues involved in the formal decision-making, or are some absent from the table? Are the coastal managers engaging the marine transportation, offshore energy, and other sector principals in other ways? Springer highlighted the difficulty with integrating fisheries management (2002, 21-24) so we know the GOMC lacks integration with one of the primary economic activities in the region. It is also clear from the GOMC Web site that local entities are not partners but are implementers of the GOMC Action Plan, and other important players on specific topics are not members of the working group or committees (GOMC 2005). For example, neither the primary Working Group that guides the GOMC or the Environmental Quality Monitoring Committee possesses representatives from private sector or economic interests (GOMC 2005). Certainly, in any ROG activity, local and private sector interests should be involved (Pew 2003, 34; USCOP 2004, 56-57).

Boundaries: EBM boundaries should cross jurisdictional boundaries and align to ecosystems, from the uplands to the EEZ (USCOP 2004, 56). The GOMC crosses jurisdictions by recognizing the Gulf of Maine as a trans-boundary ecosystem but does not include all upland areas (Springer 2002, 12-13).

Sustainability: The GOMC seeks to achieve both economic and ecological sustainability (GOMC 2005) through focus on ensuring ecological integrity and sustainable maritime activities (RNRF 2005, 23; Springer 2002, 15). Its mission statement is, "to maintain and enhance environmental quality in the Gulf of Maine to allow for *sustainable* resource use by existing and future generations" (GOMC 2005). Their Habitat Restoration Strategy also emphasizes sustainable resource use as a driver and goal of habitat restoration (GOMC HRS 2004, v).

Consider cumulative effects: In the Environmental Quality Monitoring Committee report, there are efforts to understand the individual and cumulative effects of human activities on the Gulf of Maine ecosystem (Hinch 2002, 48).

Precaution: One of the four driving principles of the GOMC is protection through precaution (GOMC 2005). How this occurs is not described or apparent in the literature reviewed.

Ecosystem knowledge and uncertainty: One of the five major Committees of the GOMC is the Data Information and Management Committee that operates as a facilitator, translator and clearinghouse for data collection, research, and other information needs (GOMC 2005). In addition, GOMC partners with the Gulf of

> Maine Ocean Observing System (GoMOOS) that collects and produces data and information products for a variety of users (GoMOOS 2005; RNRF 2005, 24). They are also working on developing ecosystem indicators to measure ecosystem integrity over time (GOMC 2004, 1).

In reviewing the above assessment, it is clear GOMC supports EBM but does not engage in EBM since it is not fully integrative and lacks decision-making authority. The GOMC recognizes the trans-boundary, human impacted ecosystem of the Gulf of Maine, and is seeking integrative and precautionary approaches to a sustainable ecosystem but comes up short in satisfying some key principles. Nevertheless, it is active and provides valuable EBM-related services. It is not possible to determine without additional research and questions the efficacy of these efforts. Some additional question to be asked may include: whether the extent of GOMC activities are broad enough to match the extent of the sources and solutions to the problems addressed; what performance measures have been met and what have not; whether the level of non-government participation in GOMC activities is on par with government participation to effect a fully integrated approach; whether efforts to achieve sustainable economic activities in the Gulf are successful and how so; and how precaution is implemented in practice.

Step 3. Regional Stewardship

The final step involves assessing the regional stewardship characteristics. As with the previous two steps, Table 10 provides some initial principles to investigate. Principles such as existence of stewards, development of stewards, long-term commitment to place, broad prosperity, inclusion, learning from others, and governance reform and innovation are just a few that appear in the GOMC.

Develop regional stewards: Two of the three GOMC priority goals for 2001-2006 contain an objective to enhance citizen stewardship (GOMC 2002, 13-14) through education, training, funding of local initiatives and public awareness (GOMC 2002, 15) and by capitalizing on existing stewardship programs (GOMC 2002, 18). The Public Education and Participation Committee purpose is to "cultivate a sense of stewardship" in the public (GOMC 2005).

Regional Networks: Development of stewardship networks is also an objective and strategy of the GOMC (GOMC 2002, 19) and will foster the development of regional stewards. There exists a strong contingency of regional professionals from the coastal management and science communities whose names reappear in most of the GOMC publications. Yet, it is unclear if these professionals engage and develop networks with those outside of their fields or regions beyond the GOMC – a key role played by regional stewards.

Long-term well being of place: Fundamental to RS described in Chapter 3 is the commitment of regional stewards to the sustained health and prosperity of a place. The first GOMC principle titled "Ecologically sustainable development" includes the

statement, “to sustain ecological processes and enhance the region’s quality of life” (GOMC 2005). In addition, the GOMC develops comprehensive five-year action plans to guide their activities – a clear statement of their commitment to the region beyond a single short-term coordination activity (GOMC 2005). Combined with consistent support from various levels of government and sectors over the last fifteen years, the GOMC embodies this principle. Leaders such as David Keeley who continue to promote the GOMC and Gulf of Maine illustrate this principle in action.

Governance reform and innovation: By stepping beyond the borders of traditional government jurisdictions and developing a bottom up approach, the GOMC embodies this principle. However, it is not a clearly stated principle of the GOMC and reforms that have occurred may be the inevitable result of regional coordination. The GOMC could implement this principle by developing a new governance reform committee.

Broad prosperity: The GOMC set one of its three priorities for 2001-2006 on sustainable maritime activities (RNRF 2005, 23; GOMC 2004, 13). The objective appears to be directed towards ensuring continued and sustained activities (i.e. fishing) and the GOMC is interested in developing new economic activities (i.e. tourism) to sustain local communities (GOMC 2002, 13).

Inclusion: Through its various committees and projects the GOMC involves the public and other stakeholders in Council activities and has done so from the beginning of its formation (Springer 2002, 24-25; GOMC 2005). However, challenges that hinder public and NGO participation still remain (Springer 2002, 25-

26). For example, the large quantity and diversity of foci of interest groups in the region make it difficult to bring them into the Council (Springer 2002, 25).

A brief analysis of the information discussed in this step reveals that the GOMC embodies several of the principles of RS. The GOMC is committed to the long-term, broad prosperity of the region and actively seeks to develop regional stewards at multiple levels. However, the GOMC could improve how well the general public and non-government interests are included in GOMC activities so that inclusion and stewardship principles are strengthened. Additional investigation into how well in practice each of these principals is accomplished is needed to fully assess consistency with RS. From a general overview, it appears the GOMC is moving towards RS in principle.

Summary

Overall, this cursory evaluation suggests the GOMC exhibits some of the principles and qualities desired and necessary for an ROG approach. Some institutional, EBM, and RS dimensions are consistent in many ways with those outlined in Chapters 2 and 3. The GOMC is a place-based approach dedicated to its overall prosperity. Additional connectivity to upland sources of many of the pressures on the Gulf is needed. Further, local involvement in the GOMC Working Group and Management Committee is necessary to ensure that the activities remain bottom-up from all perspectives. As it is, many of the decisions are made by state or province level agency representatives. The GOMC does however attempt to include the public and other interests through a variety of mechanisms and supports developing regional stewards who will continue to be involved in promoting the welfare of the Gulf of Maine and its communities. Further

expansion into areas of policy making and advising would complement the GOMC's coordination, extension and information activities moving it closer to becoming ROG.

By delving deeper into the principles and elements, conducting interviews, and reviewing additional progress reports a more complete assessment of the GOMC is possible. However, the purpose of demonstrating the analytical framework in practice does not require such detailed inquiry. It is hopefully clear by the above discussions that the three-step framework can help assess existing regional approaches for their ROG qualities and how that helps advance a new or modified ROG approach. The challenge with any assessment is identifying through a rational process the focus and level of detail needed to develop a complete understanding of a regional activity so that changes or improvements are readily identified. The illustration above does not offer much help with those details but provides a starting point and ideas for increasing the output of the assessment. As discussed, these decisions will be based on the goals and priorities determined by each region. It is also unclear from this example assessment how the framework would help the development of a new ROG activity. Further testing with a new activity is needed to determine its utility in this area. Hopefully, the 3-step framework offered will help those seeking ROG with developing their own process and approach for determining how best to move forward with ROG. At the least, the framework offers a variety of important principles and elements of ROG, EBM, and RS that can help frame the discussions and lead to the long-term well being of ecosystems and places.

Chapter 5. Conclusions

ROG is promoted as the next major development in ocean management. Two national reports make clear that our efforts at managing the oceans leave room for improvement, particularly in harmonizing sustainable ecosystems with sustainable human activities. Regional ocean governance seeks to refocus attention on managing human activities in the context of vast and ever-changing ecosystems for which we have only a limited understanding. Moving away from solely ocean management to include ocean governance accurately reflects what is needed and intended – the coordination, management, and establishment of rules for human activities in the oceans. Historically, this has been a challenge. Territorial seas, coastal zones, special management areas, exclusive economic zones all were driven and directed at managing human uses. Yet these efforts were not always successful.

The new attention on ocean regions seeks to overcome these historic challenges and ensure sustainable use and protection of the oceans. Fundamental to this task is recognizing ocean regions as dynamic, interconnected ecosystems; *places* within and external to which exists human activity with significant influence over ocean health. Regions are not lines drawn on a map; they are constantly changing places of natural and human activity. Ocean regions are not limited to political delineations but reach upland and seaward to include all natural and human processes or activities within them.

It was shown that USCOP ROG, EBM, and RS are conceptual components to the overall concept of ROG. The combination of these three concepts forms a multidisciplinary and detailed concept of ROG that addresses the three key aspects of any

management regime: institutions, ecosystems, and people. As such, it offers a useful framework for evaluating or designing ROG in a given region. A three-step approach that evaluates the institutional, EBM, and RS dimensions provides ROG advocates with a tool for beginning to identify how best to build upon existing regional activities to achieve ROG. The evaluative example offered in this thesis also raises the importance of ensuring that such an assessment is comprehensive enough to paint a full canvas of what exists and what is missing. Evaluating a single existing regional coordination activity will not contribute to this understanding the way evaluating all appropriate activities in a region will. The result is a framework that offers a general foundation for understanding ROG in a region that can be modified or built upon to seek more refined answers to regional questions about advancing ROG.

Approaching the advancement of ROG through the use of a new understanding of what ROG means, an analytical framework for evaluation and a new perspective on the oceans as places, requires awareness of and sensitivity to the current policy context. The policy context provided here indicates there is interest and movement at the federal and state levels to develop ROG around the country. States in particular are actively pursuing increased coordination with neighbor states and bordering countries. Federal agencies are beginning to implement necessary changes to achieve an ecosystem-based approach to fisheries management, developing new RAs to support decision-making and exploring ways to broaden the issues covered to become an inclusive EBM approach. It is clear from the policy context that state leadership and federal support are both essential ingredients for advancing ROG, with state activity paving the way for federal support.

Additional activity at both levels is still needed. Some states must first establish a clear approach to improving state ocean policies before they can coordinate beyond their boundaries. Federal EBM efforts need to become more holistic and inclusive of other economic activities beyond fisheries and marine resource management. IOOS RAs must embrace the policy and governance activities as customers and partners for mutual benefit. Other changes or adaptations will also be needed as the policy context evolves.

There are many activities already underway that partially fulfill the needs and functions of ROG. While it is an important player in ocean issues for the Gulf of Maine, the GOMC is only one part of what is necessary if the region is to achieve ROG. Better integration with a wider array of human activities and interests is required. Since so many of the pressures on the Gulf originate upland those related upland issues and areas covered should also be captured. Finally, the GOMC must engage in more activities that foster governance and stewardship at all levels beyond state and provincial governments. The strength of the GOMC lies in its ability to cross-jurisdictions and provide information and funding to improve ecosystem health. The foundation for ROG exists but more is needed.

While the above policy context and analytical framework contribute to our discussions, the future of ROG hinges on additional questions: Will other states currently silent in the discussion begin to take steps towards ROG? Will the federal government move to further support ROG and provide federal funding, legislation, and coordination to help state ROG efforts materialize? Will the wide variety of interests potentially covered by ROG in a region come to the table to act as regional stewards? The answers to

these questions and countless others are difficult to predict but through continued dialog and exploration of what we mean by ROG we will perhaps one day achieve it. Our future and that of the oceans may depend on it.

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Workshop Proceedings

WORKSHOP ON REGIONAL OCEAN GOVERNANCE

Held at the Coastal Zone 2005 Conference

July 20, 2005, 2:00-5:00 pm

Marriott New Orleans, Balconies I-K

New Orleans, Louisiana USA

August 12, 2005

Introduction

The Regional Ocean Governance workshop held on July 20, 2005, in New Orleans, was a huge success! Thank you very much, again, for your participation and your interest in the emerging concept of regional ocean governance in the US. The workshop generated lots of good information and considerable enthusiasm!

These proceedings contain the output of the workshop and include plenary notes, speaker notes, breakout group notes, and breakout group reports. Attached or referenced are several additional files available at the noted URLs below. These files were not included in this document due to file size restrictions but they are important pieces of the workshop and continued dialog.

Additional Comments: Written comments submitted during the workshop

http://depts.washington.edu/oceangov/czdocs/ROGWSComments.pdf

Agenda for Action: Revised statement – with and without track changes

http://depts.washington.edu/oceangov/czdocs/ROGWSAction.pdf

Revised Overview of ROG Activities in US: Updates and corrections

http://depts.washington.edu/oceangov/ czdocs/USRegProfiles_Rev1.pdf

Workshop Participant List: Registrants and others

http://depts.washington.edu/oceangov/czdocs/ROGWSParticipants.pdf

We added information to the background paper in a number of categories, particularly for SE New England and for IOOS activities in various regions. The action statement is considerably revised based on the many useful suggestions we received from the four breakout groups.

Feel free to circulate this information to your colleagues. We hope that the topic continues to get the attention it deserves.

We encourage additional comments on the documents and will post them in a separate file labeled “commentary”. Unfortunately we cannot do another iteration, but hope that a future project can build on this one and move the regional ocean governance idea forward.

Marc Hershman, Workshop Moderator
Craig Russell, Workshop Coordinator
John Hansen, Proceedings Coordinator

University of Washington
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OPENING PLENARY

Welcome and Overview of Workshop

Marc Hershman, University of Washington

Background:

Credit to NOAA Ocean Service, Craig R., and the TCS assistants
Introduces Facilitators
Reviews Action Statement

Why this interest in ROG?

The USCOP Report, ROG received great deal of attention
ROG reflected in more than half of the chapters in USCOP—Governance, information generation, stewardship issues. Central concept, linked to the federal level via the NOC. USCOP added the concept of "oceans" to the idea of regionalism, using LMEs.

Four Objectives of this workshop:

1. Recon—Who's out there, what's happening?
2. Community building
3. Recognize the fact that we have a complex and poorly defined concept (ROG), explore the parameters--players, variables, forces that play upon the activities.
    - Existing players
    - Looking at ecological forces in large marine ecosystems
    - Movement towards OOS
    - Existing resource mgmt, activities, such as FMCs
4. Examine draft Action Agenda

Overview of Regional Initiatives

WEST

Alaska

Kurt Frederiksson, Alaska Department of Environmental Conservation; Chair, Alaska Ocean Policy Sub-Cabinet

Far too often AK is depicted as a small insert next to Guam! However, it is a significant state, takes the ocean initiative seriously, region on to itself, 2/3 coast line of the nation, 50% of the nations wetlands—Ocean state.

AK has a healthy, productive ecosystem and is an example of good ocean mgmt. Where as many states border other states, AK is unique, international boundaries with Russia, Canada, etc.

AK has taken the USCOP seriously, active Governor: Adopting admin order 223—Ocean policy office, recognizes large scale ecosystems, heavily dependent on fisheries resources and is thus concerned with their protection.

AK Ocean Coordination: Internal state agency coordination, state/federal partnerships, priorities and funding agreements to make more effective use of the resources that they have.

Pacific Northwest

Marc Hershman, University of Washington, School of Marine Affairs; PI of Northwest Regional Ocean Governance Project

PNW, "tale of two OPACS".

1. OOPAC, Oregon Ocean Policy Advisory Council, set up in 1991, four meetings in June.

2. Washington Ocean Policy Advisory Council—Just beginning to explore important ocean issues.

Two would like to work together:

NANOOS
Cabled observatory
Ocean renewable energy projects
Tribal rights and jurisdictional issues
ESA issues with salmon

Combo of OPAC and WOPAC will be the two pillars of regional activity in the PNW

Also, TNC doing eco-regional planning off the Washington Coast

California

Amber Mace, California Resources Agency, Ocean Resources Management Program; California Ocean Protection Council

CA Secretary of Resources just met with white house, urged the secretary to look at ROG for the west coast, so this meeting is very timely.

ROG not new in CA: 1100 miles of coastline, region on to itself. Regional break at point conception dividing the north and south. Many different regions and habitats and a growing population.

Long beach Ocean Economic Summit this week, releasing a report of the ocean economy.

Regional efforts currently exist at different spatial scales

1. CA wetlands recovery project
2. Coastal Sediment mgmt working group
3. Marine life protection act init., mandate to establish MPAs, taking regional approach.

Governor has made ocean protection a top priority.

Ocean Protection Council—Established in Sept. of 2004 (COPA). Council met twice. High level, executive. Engaged in reauthorizing CZMA, moratorium on oil and gas.

Have begun discussion with WA, OR, and AK—Want to take a look at multi state approaches, but do so with caution. Don't want to create a solution in search of a problem

For ROG to be successful, need to work on strong state incentives, value added for state efforts, which includes support ($).

Hawaii and Pacific Islands

Peter Young, Hawai`i Department of Land and Natural Resources; Chair, Hawai`i Ocean and Coastal Council

Started in 11/03, informal gathering of five cabinet levels, trying to see if they could come up with the top five ocean issues related to the state of Hawaii. Tough job.

Gathered again to address the USCOP. Finally the governor formalized the Hawaii Ocean and Coastal Council. 30 members. Met three times, updating the states ocean resources management plan. Committed as a group to meet every 3 weeks to come up with recommendation for a draft plan.

CENTRAL

Gulf of Mexico

Katherine Andrews, Florida Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA); Gulf of Mexico Alliance

Gulf of Mexico Alliance—When USCOP released report, governor Bush wrote a letter to the other four gulf governors to figure out this regional thing. Wanted FL in a leadership role, and wanted states to lead the effort.

Five states got together along with the GOMEX Program, and picked 5 priority areas, added to US Ocean Action Plan. Meeting in June, states formed action plans to develop five white papers to address the five priority areas.

The meeting will be a springboard to turn the white papers into an action plan. August 11th, next meeting will develop a draft action plan.

Next steps:
Involvement of Mexican Governors
Talk about a long-term sustainable effort

Great Lakes

Mike Donahue, URS Corporation, Water Resources and Environmental Services; Former Executive Director, Great Lakes Commission

"The 4th coast"

Institutional ecosystem of great lakes governance: Collection of laws and people that work together and against each other for ROG

Key message—the complexity of the hydrological system pales to the complexity of the geopolitical system. State and international jurisdictions very much an issue.

G Lakes are a huge, but finite, resource, intensively used from an economic standpoint

From an ROG perspective, Great lakes are a mature system, dealing with ROG for over 100 years. Had to, because of the geopolitical complexity.

Trends:

Great lakes have been "rediscovered" as a resource.

Comp planning returning with a vengeance
Heightened political interest
Emerging consensus
Gaining more stature as a national resource

Important developments:

USCOP recognized the GLs as part of the ocean governance structure
Recognized as resource of national sign., presidential exec. order.

Priorities for restoration and sustainable use: See slides

Opportunities for new approaches to regional governance: Long history of institutional experimentation, recognize the concept, understand how ROG works, have drivers (USCOP) moving them forward, degree of existing political complexity.

Challenges:
Agencies can fear the unknowns
Jurisdictional differences
Binational status
Funding is a constraint, states in a recession
Unique freshwater needs
Equal status for the nation's fourth seacoast. Freshwater, but still oceans.

SE Aquatic Resources Partnership

Doug Fruge, U.S. Fish and Wildlife Service, Gulf Coast Fisheries Coordination Office
Gulf of Mexico fisheries coordinator

Summary of SARP:

Exists through the combined efforts of member organizations in the partnership. Established in 2001 in response to aquatic crisis. Series of meeting focused on one issue, but needed to expand as well. Steering committee, 16 resource agencies in 13 states, U.S. Fish and Wildlife Service (FWS), NOAA fisheries, and councils.

Modeled after N American Water Fowl

Mission:

Key concepts, steering committee operates through consensus, coordinate mgmt and advocacy, builds upon existing programs, maximizes efficiency through joint ventures, integrating inland and coastal resource mgmt.

Next Steps:

Employ full time coordinator
Develop SE fish habitat plan
Establish exec, advisory board
Expand partner base to tribes

Opportunities and constraints:

Opps—Favorable attention, consistent support among steering committee, see an opportunity to better integrate coastal and inland waters

Const—Lack permanent infrastructure, fiscally challenging environment, social awareness and values regarding aquatic resources.

EAST

Gulf of Maine

David Keeley, The Keeley Group; Policy and Development Coordinator, Gulf of Maine Council on the Marine Environment

Watershed to EEZ—US and Canada

Priority Issues:
Habitats
Human health and ecosystem integrity
Sustainable maritime activities
Helping people connect (Gulf of Maine Times, people finder, workshops (tools))

Gulf of Maine Council

Governors, premiers, and Federal Governments

Principal issues:

Focusing on regional needs:

Lessons learned:

Shared vs. those things that we have in common
Need time to set priorities
Collegial and genuine—working with people
Hallmark is action plan

Maintaining staffing commitment:

Lessons learned:
Participation and turnover are a challenge
Inertia and culture to get regions to work together, must be overcome
Working in a regional setting
Duties assigned

Build capacity and empower others to act:

Lessons learned:
15 years to create foundations with cracks
partnering is key to leveraging resources

Mid-Atlantic

Sarah Cooksey, Delaware Coastal Management Program

Ongoing programs in the area, populated part of the country with many established governance programs.

What's new?

DelMarVa Atlantic watershed network established, Working to define issues that we can't solve with a regional approach.

Need good science and regional assessments in Delaware bay and out into the ocean, collaboration opps.

What can we do with the information we have?

What's needed? Regional energy plan for alternative energy sources, governed cradle to grave. Also need an LNG plan.

South Atlantic

Paul Sandifer, NOAA/NOS; Chief Scientist, National Centers for Coastal and Ocean Science

New, what's happening, opportunities.

SE activities in relation to regional governance, 2 areas:

1. SECOORA and other OOS.
2. Delineation of Regional Ecosystem based management concepts and areas. How do you organize around eco-regional boundaries? What are they? LMEs a good place to start, but as you move inshore things get much ore complicated. SE is still looking at this. TNC a major player, as is NOAA.

Next regional workshop in Wilmington

Three priority areas for discussion…

Overview of Selected National Activities and Perspectives

John H. Dunnigan, NOAA Fisheries

Lead, Ecosystem Goal Team

Most of its all been said already, will provide comments on the last hour:

Federal government under the ocean action plan has begun to move forward at the federal level on ROG. Cabinet level commitment that is indicated in the president's ocean action plan. States are fully at the table and understand the importance of the problem and are willing to step up and do something. States are positioned to help the federal government.

Aquabox, sub cabinet coordinating body—This is a system that the agencies are being expected to take very seriously.

Very actively engaged, at the federal level we have begun to address ways to make the federal agencies play together better in the sandbox.

LME's, NOAA push. Trying to base it on science. Struggling with ways to divide the country up into ecosystems, and aligning the nation in common policy areas and collaboration.

Great Lakes not an LME at first, but because of its importance, NOAA is dealing with it as such. Also Pacific Islands are clumped together as is AK, though there are differences. Convenient politically and administratively.

LME model seems to be getting a lot of attention. Nested ecosystems, further delineation needed. Spatial scale of your ecosystem depends on what's important to you. Coastal management is in a different spatial scale.

Four Atlantic Coast FMCs have begun to develop pilot projects related to LMEs and ecosystem management, as have the Pacific Council. Fisheries side, regional councils are trying to be as creative as they can, moving beyond single species management

Ecosystem management is not new. Have been doing aspects of it for decades, we need to move ever more deliberately towards applications that recognize the interconnection and interrelatedness.

Far more complicated and challenging than they ever would have imagined it would be.

Beginning to look for areas of opportunities: GOMEX alliance, Great Lakes, also recognized that within NOAA there is an opportunity to improve with how we produce products on an ecosystem level.

Recognize that this is hard, complex, but looking for state and federal partners to move forward.

Suzanne Schwartz, EPA, Office of Water

Oceans and Watersheds; Director, Ocean and Coastal Protection Division

Program Overview:
Watershed management—More than a decade of experience, multi stakeholder efforts within the states.

NEP—estuaries of national significance, 28. Stakeholder driven local collaborative process

Great Lakes Regional Collaboration—Draft strategy released July 7th

Gulf of Mexico Regional Partnership—Hypoxia dead zone fueled by an enormous watershed, requires a lot of upland partnerships and large effort. Nested levels, ecosystems.

Ocean Action Plan Governance Structure—Getting high level of attention within the federal government. Cabinet level sitting together and talking about ocean issues, looking for progress. That's dramatic, will filter down and cause lots of stirring and production work.

Subcommittee on Integrated Management of Ocean Resources: Support regional and local collaboration, developing a work plan under that priority. Trying not to create a new national program for establishing regional programs, but to improve existing structure and federal government wherever possible.

Lessons Learned:

Base efforts on locally/regionally identified priorities
Invite broad base participation into strategy development from the beginning
Start with realistic, achievable goals
Environmental and programmatic monitoring critical

Issues for Discussion:

- Tension between being comprehensive and having manageable and effective structure
- How to successfully integrate science and resource management.

Amanda Leland, Ocean Policy Project
Ocean Policy Director, OPP, A Coalition of Environmental Defense, Natural Resources Defense Council, and The Ocean Conservancy funded by the Packard Foundation

Focused on growing support for a new vision and new approach for healthy oceans through public outreach and education.

USCOP—Need a new vision for how to do business in the oceans. New vision needs new approach.

Vision for Ocean Stewardship: Protect maintain and restore the health of ocean and coastal resources, sustainable use.

In order to align governance with an ecosystem approach, need an approach that recognizes ROG.

Establish a national oceans policy
Enhance federal leadership
Strengthen NOAA
Strengthen partnerships

Who should be in a ROG partnership: Who? Government officials, States, Tribes. Advisors, Academics etc.

What is a ROG partnership?: National network of regional alliances that: ID Key regional ocean and coastal problems, determine solutions that address the problems, and implement the solutions that get results.

Where is an ROG? Organized around LME's and the Great Lakes, but need flexibility to take up issues at the local level. Argue against smaller scale approaches principally, need large scale approach

When? Today with a long-term commitment.

Why? Need a regional approach

How? Build momentum among regional stakeholders, grow leadership (governors, executive, leg), need to organize efforts underway

Oceans-21 bill (hr 2939)
Title 4 discusses regional coordination and planning, guiding principals and 8 regional ocean partnerships, provides $1 billion dollars to states

Opportunities:

Leg, exec, states, outreach

Tom Malone, Ocean.US

Director, Ocean.US, Office for Integrated and Sustained Ocean Observations

NOPP

Ecosystem-based adaptive mgmt, need rapid and repeated detection of changes, timely predictions of such changes. Don't have that capability today. Why? Data mgmt systems ineffective right now.

IOOS Multi scale system that goes from climate to local coastal ecosystems

Regional assoc. are responsible for organizing goals and priorities. Responsible for engaging federal bodies, for informing federal agencies of user needs for data and info, Enhance the backbone and build on existing data.

EBMGT in CAZ, Coastal component needs to address basin scale changes and two other things (?)

Regional assoc. 11 groups funded to meet requirements for certification

Main reason to worry about fixed boundaries: collaboration, funding,

IOOS regional association establish a governance mechanism by incorporating enhancing and supplementing existing OS
Legal structure
Business Plan
Linking to ed and training in the region

BREAKOUT SESSION

Breakout Group Notes

Breakout Group A – Purpose & Goals of ROG Projects

Moderator: David Keeley, The Keeley Group

-Scale of threat: Scales of threats help ID regions

-Stakeholders needed: Input of stakeholders in process needed, process cannot be ignored

-Gather info: Instead of bullet one, gather more information

-Regions too big: Rare to find issues that encompass entire regions

-Common problems: To get people to work together, must ID problems that multiple people/groups have.

-IOOS: IOOS arbitrarily divided up because nat'l observing system needed divisions, more out of convenience than purpose.

-Tactical solutions: No indication that group in action would actually do anything tactical, but only delegation, ought to be clear

-ID problem: Hard to solve problem if it hasn't been identified first, will require mitigation and changes in behavior, not something willingly done.

-5th bullet: Doesn't say anywhere that other stakeholders would be involved; stakeholder better term, includes more than general public

-Governance mechanisms: No direct reference to governance mechanisms, must be created in some instances, ROG should support mechanisms that address measurable goals, ecosystem health, etc…

-Ocean Action plan: OAP says prior authority would be respected, everyone must be assured that their authority will not be removed; current structure built brick by brick, do we just start over?
-Fishery mgmt councils: FMCs completely unintegrated with other coastal mgmt, someone should hold door open to integrate councils in other mgmt

-1st page, 2nd bullet: Should be fleshed out more, what are existing mandates among existing entities?

-Good guidelines, but…: When you go to region, you actually have to do something. Somewhere, must be ID of pilot project that is working or will work, an actionable item, that will get attention and momentum behind it, this document doesn't quite set that out.

-Int'l: Can't really say ecosystem without including Mexico, Canada, contiguous borders cannot be ignored, and they must be included from the beginning of any effective ROG. South America needed in some cases (shorebirds), ecosystems cannot be ignored.

-Regional boundary fit issue addressed

-But now have 25 boundaries for 25 problems, isn't that what we're already doing? How do we address multiple problems.

-How many problems? Maybe really only 5.

-Gulf of Mexico IOOS, know what information is needed in order to support, what system will provide that information is needed. Don't just tell us what problem is, tell us what you need.

-Purpose should be healthy ecosystems, healthy/productive/sustainable, must remember that is why we are doing this, not just moving boxes around. Need for a system/network, all regions should be talking/continuity.

-Why do you need continuity? Ans: whole earth is ecosystem.

-Should be some consistency among regions, but must allow each region to determine its own structure (council here, governance body there, etc.)

-But plan is needed, agreement on why we are doing this at all.

-If region wide problems are addressed by this body, will sub-regional problems be inevitably tackled as well?

-Governance mechanisms must have some common: Authority, responsibility, decision-making, execution/follow-through, info systems, evaluation; without these not really governance mechanisms, rather just support systems for decision-makers.

-Just moving people around will really do anything? PEW vs. USCOP: regulation vs. just movement.

-Find balance between existing authority vs. effective solutions.

-Must agree that something needs to change, problem ID key.

-Keeps coming back to shared problems, agree that something needs to be done, THEN figure out what to do.

-Need to be comprehensive, see how problems interact in order to reach goal of healthy entire ecosystems, don't let issue drive boundary but begin to link looking at all problems together.

-Must id procedural mechanisms to do this, once political momentum dies there will be nothing left to work on this/continue, need to convince legislators that this needs to be done long-term.

Breakout Group B – Attributes of ROG Structures

Moderator: Mike Donahue, URS Corp.

Boundaries

Tom Malone: should be clear that primary rationale for fixed boundaries should be for groups to partner for funding and accountability; ecosystem boundaries should be flexible depending on issue

Jessica Landmin: "contain contributing watersheds" – impossibility for large watersheds, needs to be clarified to reflect realistic view; realistic approach to focusing efforts for these entities

Jim Good: ocean, coastal and great lakes commission, obscured by title 'Regional **Ocean** Governance' – the general public is going to think of the sea, coast needs equal billing with 'ocean'

Don Roman: the whole thrust of the ocean concept is to get away from the blinder view of the ocean to recognize that the ocean issues extend all the way up the watershed, the minute you start to emphasize specific areas, you emphasize parochial concerns instead of the issues we're trying to address

JG: need to integrate, regional ocean does not imply this to the guy on the street

JG: on Tom's comment, boundaries need to be focused on collection of issues you are dealing with

Jack Dunnigan: why are boundaries important? We should be talking about things that are together

Moderator: need to draw the circle around something

Tom: Have to have boundaries, can't have a set of fixed boundaries, but can address things by…it's going to be hard..

Rick Schwabacher: interesting to think about the ability for boundaries to change over time based on needs and what's learned, understanding of issues

JG: really liked the term "institutional ecosystems" – maybe think of boundaries not just in terms of landscape, but in terms of institutions, economic and social landscape; who needs to be involved, for instance, thinking in terms of the other kinds of boundaries

Moderator: NG did a survey of college students, asked to draw circle around the Midwest on a map, varied greatly, good point

Jessica Landman: if addressing marine ecosystems through gov't entities, should be looking at existing government entities to rationalize those boundaries against ecosystems

Tom kitchens (?): involved in USCOP, started to back off from federal agencies, could not tell the EPA what to do, our hope is a bottom-up consensus would help the realignment

Heather Brandon: ecosystem mgmt should be based on biological boundaries first and foremost; boundary issue of nested ecosystems should be secondary to biological

Tom Malone: that works well for hard-bottomed, rocky communities, but does not work for pelagic systems

Representation

TM: too limited, a little bit of tension b/t second and third bullet, rep. should not be limited to government, should be public and private sectors

Tom Kitsos: As you reach out to NGOs, public, etc., where do you draw the line?

RAs are doing this now…very important to bring NGOs and public to the table

Jessica Landman: missing key question: what is the legal authority of this entity? Do they have any authority that supercedes the authority of the entities it is bringing together. This is a very central issue for Reg. Gov.

Unk: Responsibility and reliability, as well

Doug Fruge: Maybe having different levels of participation… we have a steering committee…it's also important for everyone who wants to participate should be able

JL: Do you mean having voice be heard or have a vote?

DF: Not practical to have a vote, I think having their voice be heard

JG: Policy-makers should have some kind of lead role, as well…those who implement policies (in agencies), resource users (fishing, marine transportation, etc)…thinking of representations in the form of different clusters

Moderator: other categories: Participation, Integration, Coordination, Other

Unk: What is the entity going to govern?

TM: USCOP addresses this nicely, says there will not be

HB: In our region, using 'binding' and 'nonbinding' – very strongly leaning towards 'nonbinding' b/c people do not want to lose authority

JM: integrated coastal management focuses on integration across horizontal, vertical…it's well-defined, focuses on sustainable development, seeks to harmonize…regional ocean governance is trying to reinvent something that is already defined in ICZM…this is already described and vetted in the literature that has come out over the past few years…it started here, but got better defined elsewhere

TM: Add 'interoperability' under coordination, being able to share information and data

JL: would endorse the national backbone, a base level of consistency

JL: if these are organizations with their own legal ability, they will not be able to reconcile inconsistencies, cannot say 'no additional legal authority' and also expect to resolve consistencies; replace "reconcile" with a non-regulatory word

Don Roman: No mention of funding, budget authority…what control is the agency going to have over the regional program

Unk: go beyond "enable" and focus on promoting regional and local interest; focus on reach out and engagement (participation section)

JG: why not require?

Peter Young: How does participation work if not voting? We're about ready to have regulatory community based management of resources.

Don Roman: most of this

Breakout Group C – Actions to be taken in next 12-18 months

Moderator: Lynne Hale, TNC

Important to come up with a statement of purpose and also some action objectives. Building on actions that we have already heard about, what other good action would be good to do?

Action Plan Draft, Comments:

Purpose:
We should build on what we've done, not reinvent the wheel. Recognize and build on past efforts. Mitchell bill mentioned.

Economy of scale and achieve efficiencies.

Not clear who accomplishes bullet points. Maybe the purpose needs to better define the institutional structure. But, are we really trying to create an institutional structure?

Mandating some form of interagency communication. Is this captured in the 6th bullet? This might be coming out more within the action strategy.

For at least three of these regions, there are international jurisdictional boundaries and institutions to consider.

To ensure that effective institutional integration and collaboration occurs across sectoral and jurisdictional lines

The need to create a sense of place or purpose for people. So people engage, so it's important to them.

Attributes
Let's not create a huge new "encrustation" of government. An attribute should be that it maximizes or leverages existing government structures. Look for easy ways to do this rather than cumbersome.

Learning issue, part of the purpose, not captured in attributes. Need to add a learning bullet.

The modern buzzword "transparency" getting the public to be able to find out how these things are happening. Could be picked up in the participation attribute? No, this is general knowledge we're talking about, not specific public participation. We need to be sure that the general public knows what we're doing with ROG.

Make the attribute points explanations more general

One of the attributes should be that this will be science driven

Service-driven, and services science driven.

No place for the private sector here, though they are major players in global ocean use. Needs to be highlighted.

How are the actions going to be determined? Who will execute these actions? These are ideas for action. Priorities not yet set. The idea is to get some concepts and thoughts on the table. Some concern over how the action agenda will be used after the meeting.

What are some of the actions that the community as a whole can take in the next 12 to 18 months?

Increasing the availability of data to aid Ocean and Coastal mgmt.

Sea Grant program could do something about a needs assessment. Carry out a needs assessment with user groups. Research needs assessment, to support eco-regional assessment, market assessments, needs, delivery routes.

A lot of activities are occurring towards identifying priorities, mapping, etc,. A lot of things out there that can help us move along. Share that info right across. Info is potentially available for anyone out there. ID and share existing regional planning efforts, look to NGOs and others. Plenty out there, use it!

Look at existing legal authorities. Review existing federal, state, and local authorities and see how they apply to the oceans and coasts. Building on the existing legal and institutional analysis, have regions review what additional work needs to be done.

Public health is a priority that needs to be developed. The list is a little ad hoc as it exists now.

It is clearer to say: Aims, objectives and measurable goals: (referring to second bullet).

In addition to documenting positive and negative experiences in the US, we should look at international efforts as well. This will reduce competition between regions and foster a sense of learning in good faith about what works and what doesn't.

Time to see some action. At the state and local level, need to see more folks like Kacky Andrews to take the initiative and to get out on the road and talk to other regions. Support active sharing of ongoing work, successes, and constraints.

Increase capacity to fund. Feds needs to support existing regional activities and sustain them. ($)

Still unclear on what this story is all about. Who reacts, when and why? How will this whole thing be organized? Can we put organization on the action list?

Governors need to get involved. Governors' councils need to coalesce around what their priorities are. Need some executive leadership direction to the federal agencies.

Breakout Group D – Links with Regional Information Initiatives/Information Needs

Moderator: Margaret Davidson, NOAA/NSC

- Draft agenda needs more IOOS description (Margaret Davidson)
- Every region needs to develop a regional info system or systems (MD)
    - Everyone agrees
    - (MD) How do we go about finding out what info systems we need?
        - Engage stakeholders, find out what we need
        - Who does it serve? State, local, private needs? Need to figure out who we are serving
            - First priority: gov't systems, then private. (Dan Dorfman)
            - Second priority: people who are impacted- public, private, whoever

- (MD) Public sector = government parties, local, state, national, international, first priority
- (MD) Second = NGOs, private sector, whoever is impacted
- The actors and the acted upon

- Public/private NGOs (impacted parties, include NGOs)

- What do we want to do? **Process:**
  - Education, outreach, research, user needs assessments
  - Use existing assessments, for example, Sea Grant programs
- Where would you get this information?
  - Existing assessments, surveys, public interactions
- Are there any other processes you would want to do? Draft document maybe?
  - Synthesis report
  - Performance assessment of existing processes, and how they work
  - An inventory assessment of existing info systems
- (MD) Assessments:
  - They are about quality,
  - gap analysis,
  - scope,
  - user satisfaction surveys,
  - look at the requirements ahead of time
    - It will be a complicated system, but you have to know what exists, and where the gaps are; where you are going in order to figure out how they can all come together.
    - Compatibility
  - Question: What do we mean by "requirements"?
    - (MD): information needs and products
  - Question: How do they know what they need?
    - An example is that AK fishermen need climate/weather data
      - They need to know NMFS and DFG have good data and science to manage fisheries well (Kurt Frederickson)
      - Real time data
      - What kind of data sets do they need? Need to get down to all that
- (MD) Do we want to make a matrix of data requirements, then see how much we can fill in, and what we still need to collect? Can we do anything with the data with confidence?
  - Need QA/QC for that data
  - Need confidence and reliability of data
  - QA/QC in the data management communications… (DMAC): Some systems are not going to address QA/QC, need to know if

the system will provide QA/QC or not, some don't (DMAC) (Tony Lavoi). Some are saying we need to make sure that happens.
        - Resource managers NEED data confidence. There is never enough data, so this is very crucial that the data is good.
    - (MD) Where and how often do you do the QA/QC process?
        - Need to filter your system to make sure you get accurate data.
        - There may be multiple screenings/filters (EX: Level 1 for fast, real time monitoring data and Level 2 to clean up data, look at trends, etc.). Depends on the data. Ex: water quality data
        - The process needs to be consistent
        - Ascribe/understand the different levels of confidence
    - Comment: We are missing something in the integration
        - (MD): How do we get around this?
            - Never have enough data. There are main drivers, maybe we don't always need as much information. Some stakeholders just need to know what the key drivers are of the system.
            - Who should be involved? EVERYONE. Need to know the key drivers (Scott Rehmus)
            - Also test the models
            - Sensitivity analyses
            - Everyone wants endless, 100% data. But that doesn't exist, it's not real. So we need risk assessments: who is accountable to the receivers and to the investment (EX: oil drilling)? (Kurt Fredriksson) It's all about accountability, for decisions, and for how much is enough, etc. Investment strategy
            - Frequency/accuracy, aka RISK
            - Ken: We don't have endless funding, so they will only invest money if they feel they are at the proper risk level. They won't invest in an oil drill unless they KNOW there is oil. There are economic and political risks.
            - Risk analysis and decision.
        - (MD): Product design and service
        - We need to look at this with an ecosystem perspective. How do we do all this in an ecosystem way?
        - (Dave Fluharty): Data and trends develop models. Models have to be multi-variable, i.e. bio, geo, physical, etc. Habitat, water quality, cause and effects, etc.
        - Interoperable, accessible, transparent
        - Linkages/relationships
            - Modeling, representation

CLOSING PLENARY

Breakout Group Reports

Breakout Group A Report, David Keeley

Came up with 4 things:

Issue must drive boundary, probably a small set of issues that drive large ecosystem area need for mgmt

Clarity on why are we creating these ROG structures? More work possibly needed.

While we want network for ocean governance structures, but must recognize flexibility needed. Goals could be created, ROG responds.

Ying/yang on authority/responsibility; some said great to preserve entities existing, others said we created them, we can take them down b/c its not working anymore, must look at all of it to make decisions for next 200 years. Do we hold everything inviolate, create decision-support teams, or do we really make new governance structures.

Breakout Group B Report, Michael Donahue

Lots of similarity with A;

Boundaries should be fixed and defined, but flexible, bio characteristics go into boundary def.

Coastal/GL secondary to ocean issues.

Represenation: shouldn't be limited to simply public officials; public, NGOs must be involved, address by having varying levels of authority/involvement

Should not be fed dominated.

Participation: statement should be more aggressive in outreach, look at existing models for ROG

Integration: build on what we have, if institutions not fully utilized use them before creation

Reconcile replaced with non-regulatory

Recognize historical/cultural practices

Coordination: interoperability implemented into statement, ensure base level of consistency for all regions

New category: define authority (level of authority, consistent with USCOP, soft mgmt not regulatory) address issues of funding entities, operational control, sustainable over long-term.

Issue-driven flexible boundary, fixed boundaries should be in place for collaboration as needed.

Do entities have legal authority, or should soft mgmt or new legal authority be put in place?

Breakout Group C Report, Lynne Hale

Considered purpose and attributes in our group

Purpose: sense of place for ocean area, needed to create effective ROG; recognize and build from past

Attributes: key attribute of transparency, people need to know and care about ocean in order to make progress, make issues real

Short term actions: Q: who is going to execute these actions? Ans: up to all of us in this room, ideas for everyone here, advance cause we believe in. –Reinforce need for continued leering, need assessment key. – Clear aims/obj/goals, look internationally for examples; States/regions learn from each other, tell everyone else about your experiences, feds should facilitate. –Fed agencies needed to take more national level approach in order to support ROG efforts, need to figure out how to support/sustain all of them, in order to share info and keep them going.

-Continue dialog, must commit

-Build/leverage form what exists

-Expand support to all regions

-Do it and learn as you go.

Breakout Group D Report, Margaret Davidson

Action plan should have something about central importance of info systems

First thing to do is engage stakeholders (people who have public responsibilities, people impacted by those who have responsibilities, scientists/general pub/public and private entities)

Develop requirements, people in public sector don't know what they need, first have assessment/inventory, data you already have and how fit is it? Look at what are current info systems

Requirements: products you need, decision-support tools, models that would drive those products all way down to data, then test to fit against existing systems, check for gaps. Compatibility, QAQC for accuracy, precision, confidence in using data for science/politics. Levels for different people based on their needs, must be able to understand different levels so that decision makers can understand parameters.

How much data is enough? Should come from those accountable for decision being made. Based on level of risk (econ/political).

Key point: whatever you set up, however used, whatever produced, → should be interoperable, accessible, transparent, show linkages and relationships in order to get robust ROG info system

Closing Discussion

MJH – what have we started? What are you willing to do to continue? What is most useful to you?

Output will be: take comments and revise agenda for action statement and get back out to everyone. Too early for consensus. –Revise background paper to be more up-to-date. –Contact list for roster (some didn't get it, check at back to make sure you are on list) –Could check with Gale, someone with conference. –Turn in comments forms. –Have a report on workshop, summary, brought together with other documents. Workshop will conclude with record on what we actually did.

What do you feel is appropriate next? (Our ability at UW ends with report from this workshop, do you have vehicles for keeping it going)

-Depends on how you expect action plan to be used, and who will take advantage of it? –Ans: certainly get to players here, turning into action plan is next step

-Hill staff might find this useful, folks trying to write bills, deeper treatment of ROG could be useful. Provide this document/report etc back to regions, ask groups here to respond and confirm/deny in order to get additional input.

-Concerned that funding needs to addressed enough, lack of money to do what we know we need to do. Don't send message to hill without addressing this, cant say we want to do this without accounting for getting money for it.

-Consider annual ROG workshops in order to update what regions are doing, coincide with CZ or TCS conferences, keep communication and lesson sharing info going forward. Would take some initiative from people here in order to achieve that; CSO could add this to their portfolio

-Interested in what is happening at federal level as relating to each region, region by region. Must address what states are doing/starting, then what feds are doing to respond at each regional level.

-DUKE law school hosting symposium on this topic, in Oct.

End of Workshop

ADDITIONAL WORKSHOP MATERIALS

(See http://depts.washington.edu/oceangov/cz05_workshop.html)

Additional Comments

Agenda for Action

Revised Overview of ROG Activities in US

Workshop Participant List

Appendix B. State Ocean Management Initiatives

State	Organization	Scope	Authority	Effective Date
California	California Ocean Protection Council	Coordination and improvement of the protection and management of California's ocean and coastal resources.	California Ocean Action Plan; California Public Resources Code, Division 26.5 §§ 35500-35650	December 2004
Massachusetts	Massachusetts Ocean Management Initiative	Establish a more proactive ocean management process; use ecosystem approach by working with federal government on ocean management; and review, revise, and strengthen management policies for State and federal waters.	Governor Romney's Ocean Management Initiative	March 2003
Oregon	Oregon Ocean Policy Advisory Council	Coordinated collaboration of State agencies involved in ocean and coastal management.	Oregon Revised Statute Title 19, § 196.438	January 2004
Alaska	Alaska Ocean Policy Cabinet	Coordinated collaboration of State agencies involved in ocean and coastal management.	Governor Murkowski's Administrative Order No. 223	December 2004
Hawaii	Hawaii Ocean and Coastal Council	Gather information and provide advice and recommendations on direction and planning for addressing Hawaii's ocean and coastal matters to foster coordinated approaches that support local initiatives on ocean and coastal concerns.	Governor Lingle's Executive Order No. 5	January 2005
Washington	Washington Ocean Policy Work Group	Identify recommendations of the U.S. Commission on Ocean Policy report appropriate for immediate implementation; provide comrephensive report on State ocean resource policies.	Washington ESSB 6090.PL § 116 (7)	April 2005
Florida	Florida Oceans and Coastal Council	Develop a research plan and performing a resource assessment (including patterns of use, natural resource features, location of research and monitoring infrastructure, commercial and recreational transit patterns, and socioeconomic trends of the state's oceans and coastal economy.	Florida Statutes Part IV of Chapter 161, §§ 161.70 – 161.76	May 2005

(Source: Hershman & Hansen)

Appendix C. Overview of Gulf of Maine ROG Activities

The following overview is an excerpt from: Russell, C., Hansen, J., Meyer, M., Geerlofs, S., and C. Byron (unpublished). "Preliminary Overview of US Regional Ocean Governance Initiatives", pp. 29-32, prepared for the Workshop on Regional Ocean Governance, Coastal Zone 2005 Conference, July 20, 2005, 2:00-5:00pm, New Orleans Marriott, Balconies I, J, K, New Orleans, Louisiana. The author, also a co-author of the cited report, granted permission to reproduce the material for this thesis. Additional credit and thanks goes to David Keeley of The Keeley Group for reviewing and updating the overview in July 2005.

Gulf of Maine

Summary

The Gulf of Maine Council on the Marine Environment is one of a handful of existing regional ocean governance initiatives in the US and involves coordination with three US states and two Canadian provinces in what is historically one of the world's most productive fishing grounds. Primary drivers of coordination are long-term sustainable management of coastal and marine resources, habitat restoration and conservation, information management, monitoring and research to support a diverse group of users.

Regional Definition or Description

The Gulf of Maine is one of the world's most biologically productive environments. The coastlines of Massachusetts, New Hampshire, Maine, New Brunswick, and Nova Scotia make up its western and northern boundaries. It is a semi-enclosed sea of approximately 33,000 square miles, bounded by the underwater banks, including Georges Bank. Its marine waters and shoreline habitats host some 2,000 species of plants and animals. Two currents control temperatures and bring nutrients and food to the plants and animals that occupy the rich undersea terrain, including 18 marine mammal species. Its watershed, totaling 69,115 square miles, encompasses much of Nova Scotia, New Brunswick, Maine, New Hampshire and Massachusetts, and a small portion of Quebec. The Gulf of Maine was one of the most productive and active fisheries in the world, though it witnessed declines in yields due to over fishing. As with most coastal areas in the US, the Gulf of Maine feels the pressure of growing population of approximately 5 million people. Impacts include changing land use, habitat modification and point and non-point source pollution from industrial, commercial and residential development. (Adapted from GMC 2005; Springer 2002).

Overview of Major Activity

1. Gulf of Maine Council on the Marine Environment

a. Players, Leaders, and Organizations Involved

The Gulf of Maine Council on the Marine Environment (GMC) administers the 1989 Gulf of Maine Agreement on the Marine Environment, a US/Canadian partnership of

governmental and non-governmental organizations. (www.gulfofmaine.org) Participation is not legally binding and is characterized by informality and consensus. In addition, Federal governments are not signatories but are practical, full members. Membership is composed of 2 cabinet officials/administrators from each of the three states and two provinces, US and Canadian federal officials, and 1 private sector/NGO representative selected by each of the five jurisdictions. In addition, working committees involve over 200 others from other public, academic and private interests in the region. A working group and a number of committees, task forces and panels implement action plans and strategies.

b. Key Issues Addressed

The focus of the GMC is to maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations. At five-year intervals the Council, with extensive stakeholder engagement, produces a 5-year Action Plan that contains measurable goals and objectives. The 2001-2005 Plan has three focal points.

- Protect and restore coastal and marine habitats
- Protect human health and ecosystem integrity
- Encourage sustainable maritime activities

Within each of these priorities the Council has articulated a series of measurable objectives and 51 specific actions that it seeks to address in partnership with public and private interests.

c. Geographic Scope

At inception in 1989 the Council established its area of purview as extending from the furthest headwaters of the Gulf's coastal watersheds out to the EEZ. (This approach is consistent with the large marine ecosystem recommendations of the US Commission on Ocean Policy.).

d. Tools Used (examples)

- Working Group and multiple Committees, task forces and panels to implement specific initiatives to address the priority actions
- Regional consensus through 5-yearAction Plans that identify and target priority issues
- Form coalitions and build the capacity of it non-government partners through annual grants program and projects
- Marshal resources and decide how best they should be used to further the mission
- Support projects, when possible, as part of a region-wide focus (e.g., $1M/year for on-the-ground habitat restoration, etc.)
- Conduct long-term environmental monitoring, prepare State of the Environment reports and produce indicators of ecosystem health

- Educate the public and raise awareness

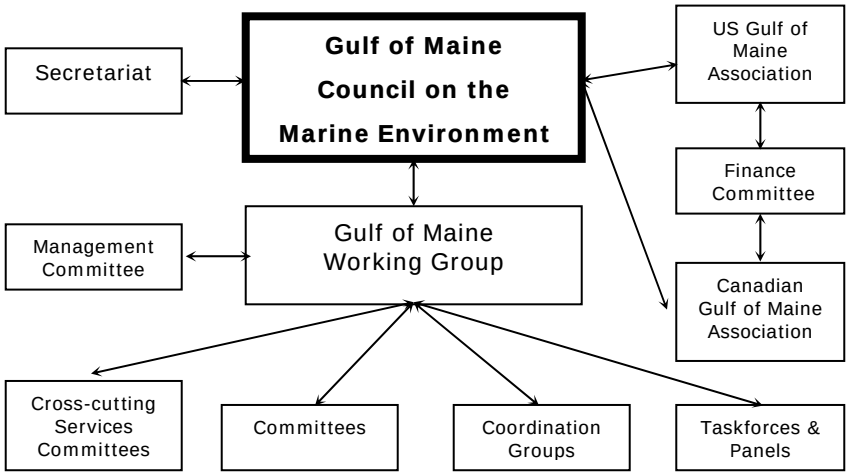

Figure 1. Gulf of Maine Council Organization Chart

e. Use of Information

An early focus of the Council was on data and information management. Example of this work include: the Gulf of Maine Times (a free quarterly newspaper) is distributed to 10,000 readers; the PeopleFinder is a web-based directory of people active in Gulf of Maine affairs; the Non-governmental Directory is a web-based tool of over 600 coastal and marine non-profit organizations; the Council produced the Gulf of Maine watershed map and the Undersea Landscape map to introduce people to the region they live in; the Gulfwatch Program (blue mussel contaminants based monitoring) has 11-years of data; the Agreement between the Regional Association for Research In the Gulf of Maine and the Regional Marine Research Board; and partnering with the Gulf of Maine Ocean Observing System (GoMOOS).

f. Timeline (Adapted from Springer 2002)

1964 – Canadian authorities issue permits for oil and gas exploration on parts of Georges Bank

1970s – US and Canada extend coastal state jurisdiction to 200 miles; claims overlapped

1973 – Conference on New England Governors and Eastern Canadian Atlantic Premiers begin regional coordination

1979 – East Coast Fisheries Agreement created controversial bilateral fisheries management; US withdraws from agreement.

1984 – World Court redraws single boundary in Gulf of Maine between Canada and US.

1988 – Gulf of Maine Working Group first meets

1989 – Gulf of Maine Council on the Marine Environment formed

g. Funding
Agency commitments (e.g., $2M/year) comprise the bulk of the resources used by the Council each year.

Regional Integrated Ocean Observing Systems:

Gulf of Maine Ocean Observing System (GoMOOS) is a non-profit corporation that provides data and information to public and private users for decision-making, prediction, and ecosystem understanding. Membership includes universities, port authorities, industry, government, and other non-governmental organizations, and is open to any legal entity. GoMOOS has a Board of Directors, staff, and partner scientists.

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Appendix D. USCOP ROG, EBM and RS Elements

Elements	ROG	EBM	RS
Conflict resolution	●	●	
Enhance existing activities	●	●	
Federal agency coordination	●	●	
Generate and use information products	●	●	
International Cooperation	●	●	
Outreach, education, training and technical assistance	●	●	
Regional councils	●	●	
Stewardship	●	●	
Adaptive Management		●	
Advisory boards		●	
Assessment of human uses		●	
Boundary determination		●	
Broad participation; involve all stakeholders		●	
Co-management		●	
Comprehenesive regional information plan	●		
Conduct ecosystem assessments	●		
Develop measurable goals and implementation strategies	●		
Develop regional goals and priorities	●		
Horizontal and vertical coordination	●		
Monitor and evaluate effectiveness	●		
Public awareness	●		
Research, data collection, monitoring, and observations	●		
Development of institutions and policy that is integrative both vertically and horizontally		●	
Ecosystem assessment		●	
Establishment of scientifically and sociologically appropriate goals, objectives and priorities		●	
Facilitate connectivity among and within marine ecosystems		●	
Maintain historic levels of native biodiversity		●	
Market based and economic incentives		●	
Oversight, evaluation, monitoring, and assessment for mid-course changes		●	
Protection and Restoration Primary Focus		●	
Regulation, monitoring, and enforcement		●	
Use marine reserves		●	
Use Zoning		●	
Connect within and across regions			●
Develop national and state support			●

Elements	ROG	EBM	RS
Develop regional stewards			●
Distributed/networked governance			●
End top-down stovepipe models			●
Experimentation			●
Information sharing			●
Innovative arrangements or institutions			●
Involve leaders, citizens, interest groups, and policy professionals			●
Knowledge networks			●
Leverage federal funding			●
Mobilize coalitions			●
Networks of responsibility			●
Peer-to-peer network			●
Public-private partnerships			●
Recruit and engage policy professionals			●
Regional networks			●
Regional plans			●
Share best practices and lessons learned			●
Understand pathways to leadership			●