Sea Grant
Law Center

Ocean Frontiers

The Dawn of a New Era in Ocean Stewardship

DISCUSSION GUIDE

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PRODUCTIONS

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Introduction

At a time when conservation is equated with job destruction and our nation is paralyzed by a code of no-compromise, a new film called *Ocean Frontiers* is returning common sense to these troubled times.

Ocean Frontiers takes a balanced, bipartisan approach to both the problems we face in managing our oceans and the solutions at hand. The film features on-the-ground reporting from places across the country that are at the forefront of implementing promising new approaches to ocean and coastal management. Industrial shippers and whale biologists, pig farmers and wetland ecologists, sport and commercial fishermen, reef snorkelers and many more are embarking on a new course of cooperation, to sustain the sea and our ocean economies.

Ocean Frontiers shows unlikely allies coming together and crafting solutions for the good of ecosystems and industry, while not sugarcoating the conflicts or the sometimes-difficult road to the end result. The film shows the groups as true partners in the process.

This discussion guide was produced for Green Fire Productions by the National Sea Grant Law Center with the assistance of the Ocean and Coastal Law Committee of Vermont Law School's Environmental Law Society. This discussion guide was developed for use during screening events and to help professors incorporate *Ocean Frontiers* into the classroom.

Photo credits: Green Fire Productions, unless otherwise noted.

Be sure to check out the *Ocean Frontiers* website: www.ocean-frontiers.org.

Here you will find new video clips (www.ocean-frontiers.org/c/videos/) and links to many of the people and projects featured in *Ocean Frontiers*. An online discussion forum is coming soon!

Photo Credit: Roy Lowe, USFWS

"Big Picture" Issues

The stories in *Ocean Frontiers* help audiences understand key principles of ecosystem-based management and coastal and marine spatial planning, which are the cornerstones of the National Ocean Policy. These complex concepts come to life and are easy to grasp through the stories and people featured in *Ocean Frontiers*.

National Ocean Policy

On July 19, 2010, President Obama established our nation's first National Ocean Policy in order to protect, maintain and restore our ocean, coastal, and Great Lakes natural resources for present and future generations. The National Ocean Policy was formed through a multi-year process that included stakeholders from commercial and recreational fishing, shipping and ports, energy developers, conservationists, scientists, the Joint Chiefs of Staff, Homeland Security and other ocean users with diverse interests.

President Obama set forth this new policy in Executive Order 13,547, titled "Stewardship of the Ocean, OurCoasts, and the Great Lakes." E.O. 13,547 sets forth guiding principles, responsibilities, and actions for federal agencies to take "To achieve an America whose stewardship ensures that the ocean, our coasts, and the Great Lakes are healthy and resilient, safe and productive, and understood and treasured so as to promote the well-being, prosperity, and security of present and future generations." One such responsibility is to engage in coastal and marine spatial planning.

"Big Picture" Issues (cont.)

Coastal and Marine Spatial Planning

Coastal and marine spatial planning (CMSP), as defined by the National Ocean Council, is "a comprehensive, adaptive, integrated, ecosystem-based, and transparent spatial planning process, based on sound science, for analyzing current and anticipated uses of ocean, coastal, and Great Lakes areas." In simpler terms, CMSP is a public planning process being facilitated by the federal government to manage ocean uses, reduce user conflicts, and minimize environmental impact.

To implement CMSP, the National Ocean Council has divided the United States into nine regional planning areas: Northeast, Mid-Atlantic, South Atlantic, Great Lakes, Caribbean, Gulf of Mexico, West Coast, Pacific Islands, and Alaska/Arctic regions.

A regional planning body, made up of appropriate Federal, State, and Tribal representatives, will be established for each region and charged with developing regional goals, objectives, and a Coastal and Marine Spatial Plan. CMSP efforts are to be guided by twelve "National Guiding Principles," which include using an ecosystem-based management approach.

"Big Picture" Issues (cont.)

Ecosystem-Based Management

Traditionally, management of ocean and coastal resources focused on a particular resource (e.g., fisheries) or issue (e.g., wetlands loss). With this type of ecosystem management, the interconnections between species, habitat, and other systems can be lost. Managers focusing on increasing the numbers of a target species might not notice the habitat degradation caused by the increase in population. Efforts taken to save one endangered species may increase predation on another, as seen with Stellar sea lions and salmon in the Pacific Northwest.

Ecosystem-based management (EBM) is an integrated approach to management that considers the entire ecosystem, including humans. EBM shifts the focus away from managing the resource (sea lions or salmon) in isolation to managing the human uses (fishing or energy production) of the ecosystem in an integrated way, recognizing the complex and interconnected environmental, economic, and social impacts of management decisions. In addition, by broadening the scope of decision-making beyond a single resource or issue, EBM facilitates the consideration of the cumulative impacts of multiple human uses of the environment.

"BIG PICTURE" ISSUES (cont.)

Suggested Discussion Questions

1. What are the different uses that affect our coastal resources? Who regulates these uses? Who are the stakeholders?

2. How are humans part of the ocean ecosystem? How might changes in the ocean ecosystem affect the economy or society and vice versa?

3. How is coastal and marine spatial planning different from land use planning? How is it similar?

4. What types of information do managers need to effectively engage in CMSP and EBM? Is this information readily available? How might managers obtain this information?

5. National policy for coastal management was set forth by Congress in the Coastal Zone Management Act of 1972. President Obama laid out a national policy for our oceans through an executive order. What are the advantages and disadvantages of establishing national policy through the Executive,as opposed to the Legislative, Branch?

6. The National Ocean Policy is an example of a top-down approach to management, with the federal government establishing the framework for the planning process. But stakeholder input will be key to its success. How can the National Ocean Policy ensure local communities' voices are heard? What would be an effective outreach plan to involve diverse stakeholders?

7. In your opinion, what is the likelihood of success of the National Ocean Policy?

"BIG PICTURE" ISSUES (cont.)

Recommended Resources/Readings

- National Ocean Council website - http://www.whitehouse.gov/administration/eop/oceans
- NOAA's Coastal and Marine Spatial Planning website - http://www.cmsp.noaa.gov/
- Ecosystem-Based Management Tools Network - http://www.ebmtools.org/
- Pew Oceans Commission, America's Living Oceans: Charting a Course for Sea Change, A Report to the Nation (May 2003), available at http://www.pewoceans.org.
- U.S. Commission on Ocean Policy, An Ocean Blueprint for the 21st Century (2004), available at http://www.oceancommission.gov.
- National Ocean Policy, Executive Order 13,547 (July 19, 2010)
- Richard Burroughs, Coastal Governance (Island Press 2011)

Saving Whales at Stellwagen Bank

In the bustling shipping lanes of Boston Harbor, what was once a recurring collision of giant vessels and endangered whales, has become a model for conservation in a crowded sea. Marine biologists, shipping executives and an energy company have come together, taking cues from the great whales' travelways, and finding room for both commerce and wildlife.

Overview of Segment

The Gerry E. Studds Stellwagen Bank National Marine Sanctuary, established in 1992, sits at the mouth of Massachusetts Bay. This 842-square mile marine protected area is extremely productive, providing feeding and nursery grounds for dozens of cetacean species, numerous seabird species, and many important fish and invertebrate species such as Bluefin tuna, cod, lobsters, and scallops.

Due to its proximity to the Port of Boston, boat traffic in and around the Stellwagen Bank NMS is quite heavy. Over 200 large commercial vessels pass through Stellwagen Bank NMS each month, posing a significant challenge to some of the oldest resident on Stellwagen - the critically endangered North Atlantic right whales, humpback whales, and finback whales. An analysis of ship strikes along the East Coast from 1979-2002 indicated that Massachusetts Bay, including the Stellwagen Bank NMS, was a hotspot for lethal collisions between whales and vessels. With such low population levels, the death of only a few females can give rise to the real possibility of extinction.

To manage the multiple, and a times conflicting, uses of Stellwagen Bank, the Massachusetts Port Authority and the shipping industry engaged in marine spatial planning. They began by collecting data on vessel traffic patterns and whale locations. Their research revealed that the shipping lanes ran right through prime whale habitat, which increased the chance for ship strikes. To reduce the risk, Stellwagen Bank NMS proposed shifting the shipping lanes 12 degrees to the north into an area used less frequently by the whales. The United States submitted this proposal to the International Maritime Organization (the international body responsible for navigational safety), which approved the change in 2006. The shift in the shipping lanes is estimated to reduce the risk of ship strikes to large whales by more than 80 percent.

Photo Credit: Whale Center of New England. Photo taken under NOAA Fisheries Permit #981-1707.

Saving Whales at Stellwagen Bank (cont.)

Suggested Discussion Questions

1. What factors do you think contributed to the success of the planning effort in Stellwagen Bank? What role did the National Marine Sanctuaries Act play?

2. In addition to commercial shipping, what are some of the other human uses of Stellwagen Bank? How might they conflict with the conservation goals of the NMS? Could those conflicts be resolved in a similar fashion?

3. While the planning process was undertaken voluntarily, can you think of any federal laws that might have been influencing the process?

4. What underlying policies from the Endangered Species Act (ESA), as well as the Supreme Court's interpretation of the ESA in cases such as Tennessee Valley Authority v. Hill, 437 U.S. 153 (1978), may have played a role in the shipping and gas exploration industries taking such an active role in finding a solution to the ship strike problem?

Recommended Resources/Readings

- Gerry E. Studds Stellwagen Bank National Marine Sanctuary, http://stellwagen.noaa.gov/welcome.html.
- IMO's Ships' Routing webpage, http://www.imo.org/ourwork/safety/navigation/pages/shipsrouteing.aspx.
- National Oceanic and Atmospheric Administration, Press Release, NOAA & Coast Guard Help Shift Boston Ship Traffic Lane to Reduce Risk of Collisions with North Atlantic Right Whales, June 28, 2007, available at http://stellwagen.noaa.gov/news/newsreleases/2007_06_28_TSS.pdf.
- Jeremy Firestone, Policy Considerations and Measures to Reduce the Likelihood of Vessel Collisions with Great Whales, 36 B.C. ENVTL. AFF. L. REV. 389 (2009).
- Ocean Frontiers: Saving Whales at Stellwagen Bank, http://ocean-frontiers.org/saving-whales-at-stellwagen-bank/.

An Ocean Blueprint for Florida Keys

The coral reefs of the Florida Keys are America's most popular marine destination, home of myriad sea creatures, magnet of sport fishers, divers and sightseers. Lately they are also America's showcase of marine conservation zoning, providing refuge, recreation, and livelihoods, through a collaborative plan developed by all concerned.

Overview of Segment

Congress established the Florida Keys National Marine Sanctuary in 1990 through the Florida Keys National Marine Sanctuary and Protection Act. The Sanctuary covers 2,800 square nautical miles surrounding the Florida Keys, including the productive waters of Florida Bay, the Gulf of Mexico, and the Atlantic Ocean. After years of planning, design, and public input, the Florida Keys National Marine Sanctuary established the nation's first comprehensive network of marine zones in 1997. The sanctuary's five zones are designed to protect sensitive ecosystems within the Florida Keys NMS, while simultaneously allowing activities that do not threaten resource protection in suitable locations. The designated zones are: ecological reserves, sanctuary preservation areas, wildlife management areas, existing management areas, and special-use areas.

Today, a network of 24 fully protected, "no-take" zones cover approximately 6 percent of the Sanctuary, protecting 65 percent of shallow bank reef habitats and 10 percent of coral resources. Although ocean planning and the designation of zones can be quite contentious, as Billy Causey discovered in the early days of the Florida Keys NMS, it is an effective tool for reducing user conflicts.

Photo Credit: Jeremy Sterk

Through the Sanctuary's Marine Zone Monitoring Program, scientists conduct research projects to provide up-to-date information on, among other things, the abundance and health of marine species and habitats. Managers use this information to adjust management techniques for specific zones. In 2003, the Pew Oceans Commission concluded that marine zoning and the Florida Keys NMS's adaptive management approach has substantially improved management of the Florida Keys coral reef ecosystem.

An Ocean Blueprint for Florida Keys (cont.)

Suggested Discussion Questions

1. How did the establishment of no-take zones benefit charter boat captains and recreational fishermen?

2. Consider the following quote from the film – "… ironically in separating the people, [the council] brought them together." In what ways? How?

3. Local community members and businesses affected by the designation of a National Marine Sanctuary are given a voice in sanctuary management through a stakeholder advisory council. How do these councils improve sanctuary management? Are there other ocean resource management frameworks that might benefit from the establishment of similar councils?

4. The primary industry in Key West is tourism (sport fishing/charter trips), with very little commercial fishing. Do you think this type of management structure would be compatible with a different region where the economy relies more heavily on commercial fishing?

5. What might happen in the Florida Keys NMS when circumstances change? Economic changes, such as a recession or shift in dominant industry, might affect all interests in a region or just some. Do you think the council would/should reconsider a prior stance? If so, how should it go about making a determination to change a management scheme?

An Ocean Blueprint for Florida Keys (cont.)

Recommended Resources/Readings

- Florida Keys National Marine Sanctuary website, http://floridakeys.noaa.gov/welcome.html.
- National Marine Sanctuary Act, 16 U.S.C. §§ 1431-1445c.
- Florida Keys National Marine Sanctuary and Protection Act, Public Law 101-605 (H.R. 5909).
- Lindsey Etheridge, Terra Bowling, and Stephanie Showalter Otts, The Adaptive Management Experience of the National Marine Sanctuaries Program, 3 SEA GRANT L. & POL'Y J. 9 (2010).
- Ocean Frontiers: An Ocean Blueprint for Florida Keys, http://ocean-frontiers.org/ocean-blueprint-for-florida-keys/.

Iowa Farmers & Gulf of Mexico

The Mississippi Delta—terminus of America's mightiest river, nursery of one of the nation's premier fisheries, and lately an unfortunate poster child for ecological disaster—is getting help from an unlikely team of people, in an unlikely place. More than a thousand miles upstream, in the cornfields of Iowa, farmers are changing their ways to send cleaner water and new life to the nation's beleaguered Delta.

Overview of Segment

A zone of low oxygen, referred to as the "Dead Zone," forms every summer in the Gulf of Mexico. Hypoxia can be caused by a variety of factors, including excess nutrients. The Mississippi River carries nitrogen and phosphorus from agriculture fields and sewage treatment plants into the Gulf of Mexico where the excess nutrients promote algal growth. As the algae dies and decomposes, the oxygen levels in the water decrease. If the levels become too low, animals that cannot move to other waters with more oxygen will die. Hypoxia, therefore, results in severe decreases in marine life within the hypoxic zone.

The Mississippi River/Gulf of Mexico Watershed Nutrient Task Force was formed in 1997 to reduce and control hypoxia in the Gulf of Mexico. The Task Force's membership includes epresentatives of 5 federal agencies, 12 states, and the tribes within the Mississippi/Atchafalaya River Basin. In 2001, the Task Force released its "Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico." The action plan was revised and updated in 2008.

Under the Clean Water Act, regulation of non-point sources of pollution (i.e., runoff from fields and parking lots) falls to the states. Few states regulate non-point sources directly, choosing instead to encourage voluntary reductions in nutrient runoff through alternative farming techniques, wetlands conservation, and other best practices. As Iowa's wetland program demonstrates, voluntary measures can be successful if the right incentives are in place. For instance, the USDA sponsors a program that provides state and federal matching funds for farmers to preserve and/or create wetlands.

Iowa Farmers & Gulf of Mexico (cont.)

Suggested Discussion Questions

1. What are some of the advantages and disadvantages of a voluntarily pollution control approach?

2. The Gulf of Mexico Alliance is a partnership of the five Gulf states which provides for increased coordination and collaboration on priority issues at the local, state, and federal level. To adequately address the environmental threats facing the Gulf of Mexico, is a similar partnership needed for the Mississippi River Basin? Would such a partnership be feasible?

3. Are we as a society better off having farmers addressing the pollution issue on their own rather than as directed by the government? Would a top down one-size fits all approach be a better solution? Should the Clean Water Act be amended to authorize the EPA to directly regulate non-point source pollution?

4. While it is important for farmers to take an active role and recognize the need to reduce their own phosphorus and nitrogen output, is it realistic to think that the majority will follow suit? The Mississippi River Basin drains 40 percent of the U.S. with contributions from over 30 states, can we really expect that many people to take measures on thier own? Are there other incentives besides the ones mentioned, such as tax incentives, that could be used to motivate people?

Iowa Farmers & Gulf of Mexico (cont.)

Recommended Resources/Readings

- Gulf of Mexico Alliance website, http://www.gulfofmexicoalliance.org/index.php.
- Mississippi River/Gulf of Mexico Watershed Nutrient Task Force website, http://water.epa.gov/type/watersheds/named/msbasin/index.cfm.
- U.S Environmental Protection Agency, Hypoxia in the Northern Gulf of Mexico: An Update by the EPA Science Advisory Board (2007).
- 2008 Action Plan, http://water.epa.gov/type/watersheds/named/msbasin/actionplan.cfm.
- Clean Water Act, 33 U.S.C. § 1251 et. seq.
- Ocean Frontiers: Iowa Farmers & Gulf of Mexico, http://ocean-frontiers.org/iowa-farmers-and-gulf-of-mexico/.

Port Orford Fishermen Protect Ocean & Way of Life

In a small fishing community on the coast of Oregon, the people of Port Orford are taking control of their destiny, by conducting their own brand of conservation. They are using local science to inform their fishery management, and protecting upstream forests to save their salmon—a farsighted perspective that considers both their links to the land, and the future of their children.

Overview of Segment

The fishing community of Port Orford, Oregon is a model of a "bottom-up" approach to environmental management. The Port Orford Ocean Resource Team (POORT) has helped the community organize and develop a vision for the long-term sustainability of their ocean resources. POORT focuses its efforts on the community-designated Port Orford Community Stewardship Area. The Community Stewardship Area covers 1,230 square miles – 385 square miles of terrestrial habitat and 935 square miles of ocean habitat – and seeks to protect the community's traditional fishing grounds and the upland watersheds that feed into them.

POORT has been incredibly successful in obtaining state support and recognition for the protection of the Community Stewardship Area. On September 28, 2008, POORT submitted a local proposal for a marine reserve/marine protected area, the Redfish Rocks Research Reserve, under Oregon's statewide marine reserve planning process. The State of Oregon formally designated the Redfish Rocks Marine Reserve and Marine Protected Area in 2009. The upland watersheds within the Community Stewardship Area were awarded permanent protection in 2009 when the U.S. Congress designated the

Copper Salmon Wilderness Area. The Wilderness Area includes 13,700 acres of new wilderness and 9.3 miles of rivers at the headwaters of the Elk River designated as "Wild and Scenic."

Port Orford Fishermen Protect Ocean & Way of Life (cont.)

Suggested Discussion Questions

1. Successful community-based ocean management initiatives, such as POORT, are rare. Why do you think that is? What might be some of the regulatory and social barriers to effective local management of ocean resources?

2. Why did the local fishermen feel disenfranchised from the U.S. fisheries management system? What changes could be made to existing law and policy to address their concerns?

3. POORT was successful over time in obtaining legal protections for the Port Orford Community Stewardship Area, but those protections are fragmented. Parts of the Community Stewardship Area are protected by state law, others federal law. Do you see any problems with this governance structure? Were there other ways the community's management goals could have been achieved?

4. Best Management Practices, such as buffer zones, can be implemented through local land use ordinances in regards to the landward stewardship areas to help protect the oceans and coasts. How might local governments act to protect oceans and coasts through their land use authority?

Port Orford Fishermen Protect Ocean & Way of Life (cont.)

Recommended Resources/Readings

- Port Orford Ocean Resource Team, http://www.oceanresourceteam.org/.
- MRAG Americas, Review And Development of Nearshore Legal and Policy Framework for Community-based Management Opportunities in Port Orford, Oregon (2009), available at http://www.mragamericas.com/wp-content/uploads/2010/06/FINAL-Port_Orford.pdf.
- Oregon Department of Fish and Wildlife, Redfish Rocks Marine Reserve Site Management Plan (2012).
- The Wilderness Act of 1964, 16 U.S.C. §§ 1131-1136.
- Wild and Scenic Rivers Act, 16 USC §§ 1271-1287.
- Ocean Frontiers: Port Orford Fishermen Protect Ocean & Way of Life, http://ocean-frontiers.org/port-orford-fishermen-protect-ocean-and-way-of-life/.