Course Information

Title: Saving Seas: Resolving conflict and finding solutions in the marine realm

Location: Cape Cod Museum of Natural History, Rt. 6a, Brewster, MA

Dates: Tuesday evenings, January 17 & 31, February 14& 28, March 14 & 28, April 11 & 25, May 9 & 23, and one six-hour special Saturday workshop.

Time: 6:00 to 9:00 pm

Credit: 3 graduate credits for 30 hours of class time, a 6-hour Saturday session, and online participation (Fee: $250—$165 to enroll for graduate credit with Framingham State College + $85 class fees). (Other options: audit ($100); 3 PDPs per session, with minimum of 10 PDPs for teachers; members of the public are welcome to attend any of the sessions for a small fee: $8 for Cape Cod Museum of Natural History members and $10 for non-members. A limited number of partial scholarships will be offered to help cover the cost of auditing or class fees).

Instructor: Tora Johnson, adjunct faculty at College of the Atlantic and University of Maine, author of *Entanglements: The Intertwined Fates of Whales and Fishermen* University Press of Florida, 2005)

Course Description: This course is designed for a diverse audience of those concerned with marine environmental issues, including teachers (grades 6-12), non-traditional educators, fishermen, scientists, community leaders, regulators, and others concerned with the marine environment. The participants will explore how conflict arises in marine environmental issues, how conflict may be resolved, and how productive public discourse can lead to solutions to environmental problems. Each session will include a panel of experts, typically focusing on a particular contentious issue such as over-fishing, whale conservation, or conflicting uses of marine resources. These sessions will not only provide content on the issues at hand, they will also elucidate skills and processes in conflict resolution. In a special day-long Saturday session, we will have break-out workshops and hear from experts on the marine environment, conflict resolution, and maritime communities, and regulatory processes. A course website will offer links and additional resources, as well as a place for participants to post thoughts and questions. Participants will use newly acquired knowledge and skills to develop final course projects with practical applications related to personal or professional goals. Teachers in the course will focus on lesson plans and activities that blend science and social studies frameworks to place both in a broader context. The final session will include project presentations and concluding remarks.

Sponsored by Cape Cod Museum of Natural History and the International Fund for Animal Welfare

Course Objectives:

Participants will…

1. be able to name and describe at least four marine food webs in which human activities have an important impact.
2. be able to name and describe at least six conflicting human uses of or values regarding marine resources, including land-based activities that impact near-coastal marine resources.
3. be able to describe at least five recent major technological advances in marine science, fisheries or resource extraction, as well as their effects on marine food webs and conflicting human uses of marine resources.
4. be able to define and give examples of the terms natural capital, social capital, monetary capital, marginal costs, cost/benefit analysis, and the commons as they pertain to marine resource management.
5. be able to fully and faithfully explain important arguments on all sides of several marine environmental issues—even concerning views other than their own, considering factors of science, ethics, culture, economics, and logic.
6. be able to define the terms conflict, resolution, solutions, and discourse as they pertain to marine resource management issues, and understand that the definitions of these and similar terms may vary among people involved in such issues.
7. be able to describe the roles of each branch of government— executive, judiciary and legislative—in marine resource management issues, including their roles in the event of conflict over those issues.

8. be able to list and describe at least five key federal laws bearing upon marine environmental issues in the U.S.
9. be able to name the key agencies in charge of promulgating and enforcing federal marine resource regulations.
10. be able to describe mechanisms in the federal regulatory process intended to allow public comment and public participation in decision-making.
11. be able to describe the main challenges and complexities facing marine resource managers, scientists, environmental advocates, and a variety of resource consumers as they grapple with marine resource management issues.
12. be able to list at least five factors that lead to conflict in marine environmental issues.
13. be able to explain key methods used in conflict resolution in a public forum.
14. be able to explain and discuss the roles of trust, expectations, value systems, language systems, stereotypes, community and family relationships, and traditional cultural practices in conflicts over marine resource management issues.
15. be able to recognize, articulate, and document themes in public debate concerning trust, expectations, value systems, language systems, stereotypes, community and family relationships, and traditional cultural practices over marine resource management issues. Such debate may occur in public forums, the media, informal networks, or educational settings.
16. be able to examine their own values, beliefs, biases, and expectations concerning marine resource management issues.
17. have practiced leading and engaging in small group discussions regarding controversial marine resource issues, using their newly acquired skills and knowledge to maintain open dialog and constructive problem-solving.
18. have engaged in several discussions, both formal and informal, with other participants of differing backgrounds.
19. have a plan—in the form of a final project and presentation— for practicing, fostering, or implementing open dialog and constructive problem-solving in their own work as educators, resource consumers, scientists, regulators, etc..

Course Expectations:

Participants will be expected to attend all classes, including the Saturday workshop (unless a suitable make-up is arranged with and agreed to by the instructor), use reading materials and online resources to become familiar with panel topics prior to class, complete three assignments, participate in the online forum at least four times, and complete a final project. All assignments must be complete and handed into the instructor by 5pm on May 27th.

There will be three small assignments designed to give participants an opportunity to weigh in on issues discussed in class and to apply class concepts in analyzing current events in marine resource issues.

A final project will be required in which students will develop and present a plan for practicing, fostering, or implementing open dialog and constructive problem-solving in their own work. For example, classroom teachers may develop extended role-playing scenarios based upon a particular marine resource issue that addresses framework goals for science, social studies, and/or history. Non-traditional educators may develop new content for their marine-related education programs to incorporate the expertise of local fishermen or convey the complexity and interconnectedness of a marine resource issue. Other participants may develop and refine grant proposals to fund a cooperative projects. Participants interested in policy may develop a series of recommendations for novel approaches to public participation in the regulatory process and prepare a report to the appropriate agency. Group projects are strongly encouraged, especially for groups comprised of people from diverse backgrounds.

All classes will be held at the Cape Cod Museum of Natural History. Reading materials will be available at the museum's library for use on-site. Additional resources will be available on the course website. When applicable, photocopies will be provided for the participants.

Course Content/ Outline

Each session will begin with a brief discussion of class business, then the instructor will present some background material to place panel discussions in context and to help participants develop questions for panelists and an ear for themes in the discussion. After this preliminary business, the panel will begin.

The central focus of the course will be a series of panels made up of people who are (or would ordinarily be) on opposite sides of the most searing marine policy issues today. Panels will take on questions of protecting the critically endangered right whale, bringing back the North Atlantic groundfish populations, balancing conflicting uses of our precious ocean resources, the use of potentially harmful sonar to monitor our coastlines, and other issues. These panels will not be ordinary debates, however. Panelists on each side will have some time to outline their positions and rationales—very briefly. Then we will ask them to discuss, openly and candidly, how and why the issue at hand has become so rancorous or intractable. We will also ask panelists to describe past successes and to courageously envision how they might resolve the conflict and what an alternative future might look like.

In a special day-long Saturday session on April 8th, we will hear from experts on conflict resolution, trust, maritime communities, and marine ecology. The day will include break-out sessions, in which participants in the course will have a chance to begin building a new framework for peace in the marine realm. A course website will offer links and additional resources, as well as a place for participants to post thoughts and questions. The course will culminate in a presentation of final projects and a discussion about what we have learned and next steps.

Readings will come from a combination of sources, both hard copy and web-based. Links to web resources will be posted on the course website. A main source of content for teachers will include the New York Times Daily Lesson Plan website, which offers wide variety of lesson plans that are relevant to course content or adaptable to marine resource issues and conflict resolution. The NYT Lesson Plans also include links to additional content and guidelines for meeting curriculum requirements. Speakers may also recommend additional readings, and for many topics additional resources are provided for participants who wish to pursue certain topics further.

Course schedule:

Please note: Dates marked with an asterisk (*) are subject to change, due to the complexities of arranging travel and accommodating the schedules of our panelists. Final dates will be in place by the first class on January 17th.

January 17- Introduction to Saving Seas

Instructor Tora Johnson will discuss and show slides of her work with fishermen, whales and coastal communities and offer background on conflict, resolution and solutions. The session will conclude with break-out discussions on values and expectations, as well as practice hearing themes.

January 31- Whither the right whale?

Panelists:

Dan McKiernan- Massachusetts Dept. of Marine Fisheries
Sharon Young- Marine Mammal Advocate with Humane Society of the United States
Bruce Russell- Retired Coast Guard, Consultant on national and international shipping issues
Bonnie Spinnazola- Executive Director of the Offshore Lobstermen's Association
Dave Casoni- Science Liaison, Massachusetts Lobstermen's Association
Amy Knowlton- Right Whale Biologist, New England Aquarium & former Co-Chair of Northeast Implementation Team on Whale Ship Strike

Background lecture: Endangered Species Act & Marine Mammal Protection Act; branches of government, the regulatory process, and public participation—ideal versus reality

Summary: Sometimes whales collide with and become entangled in the ropes used in lobster and gillnet fishing gear. More than two-thirds of critically endangered North Atlantic right whales have scars from entanglement and many have died. In spite of a decade of federal management of the fisheries involved, whales continue to die from entanglement along the Atlantic coast, fishermen are angry about constantly changing regulations and threats of closures, and whale advocates are frustrated with ineffective rules. New rules due in the spring of 2006 are likely to fuel further animosity among the players. Fisheries that kill whales could be shut down by the courts if new whale rules don't work to prevent whale entanglements. Right whales are also vulnerable to collisions with ships, but the federal government has yet to implement regulations to prevent ship strikes. On the Pacific, a judge recently ordered NMFS to take steps to establish critical habitat areas for the exceedingly rare Pacific right whale. Could this be the beginning of another decade-long firefight in the Pacific, or can such conflict be avoided in favor of real solutions? We'll hear from fishermen, whale advocates, shipping industry representatives, regulators and scientists.

Reading:

Johnson, Tora. Chapters 3 and 4, pp. 43-80, and chapters 11 and 12, pp. 220-259 Entanglements: The Intertwined Fates of Whales and Fishermen. Gainesville: University Press of Florida, 2005. You may not have time to read all this information before this session, but you should read at least Chapter 3 and 4 and try to read Chapters 11 and 12 as soon as possible. The information here will help you track themes in all subsequent topics.

Rubin, Herbert J. and Rubin, I.S. Chapter 1 in Qualitative Interviewing: The Art of Hearing Data. Thousand Oaks, California: Sage Publications, 1995.

Additional resources:

"Giants in the Balance: The Race to Save the North Atlantic Right Whale" by Emily Dooley, Cape Cod Times Special Series, http://www.capecodonline.com/special/rightwhales/

Laist, David W., Knowlton, Amy R., Mead, James G., Collet, Anne S. and Podesta, Michela. "Collisions Between Ships and Whales." Marine Mammal Science, January, 2001. 17(1):35–75

Teacher resources:

"Starting Point-Teaching Entry Level Geoscience: Role-Playing Exercises" by Rebecca Teed, SERC, Carleton College This site has a clear and helpful intro to role playing and some sample exercises. It is geared toward geoscience, it includes some environmental debate material. http://serc.carleton.edu/introgeo/roleplaying/index.html

"A Duck's Bill on Capitol Hill?: "Taking a Stand on Wildlife Conservation Legislation." New York Times Daily Lesson Plan, December 28, 2005 by Annissa Hambouz, The New York Times Learning Network, and Javaid Khan, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20051228wednesday.html?searchpv=learning_lessons

"No Place Like Home? Arguing for the Protection of Endangered Species." (consider adapting this one to look at right whales, perhaps supported by readings in Entanglements or the Cape Cod Times series on the right whale) New York Times Daily Lesson Plan, May 11, 2005 by Jennifer Rittner, The New York Times Learning Network, and Javaid Khan, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20050511wednesday.html?searchpv=learning_lessons

"State of Affairs: Learning About the Organization and Roles in Your State Government." New York Times Daily Lesson Plan, Monday, August 26, 2002 by Annissa Hambouz, The New York Times Learning Network, and Jessica Levine, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20020826monday.html?searchpv=learning_lessons

February 14- Staking Claims to Georges Bank and Gulf of Maine groundfish stocks

Panelists:

Peter Baker, Campaign Director, Cape Cod Commercial Hook Fishermen's Association
Chris Zeman, Ocean Advocate, Oceana
Roger Fleming, Environmental Advocate, Conservation Law Foundation
Craig Pendleton or Jen Levin, Executive Director, Northwest Atlantic Marine Alliance
Vito Giacalone (not yet confirmed), Chairman, Governmental Affairs, Northeast Seafood Coalition

Background lecture: Social and natural capital and the commons; trust, blame and responsibility in marine resource issues; The Magnuson-Stevens Act and the Sustainable Fisheries Act

Since the crash of the North Atlantic groundfish populations in the early and mid 1990s, stocks have slowly increased in many areas. Now fishermen in different sectors of the groundfishery are vying for access to the still-meager stocks. As federal rules change, fishermen with smaller-scale operations, often in small rural ports, must compete with fishermen in large urban ports with multi-vessel fleets. Some fishermen have accused the National Marine Fisheries Service of favoring larger operations in their rule-making. Others are calling for an overhaul of the groundfish management plans to account for new information about groundfish distribution and to allow fishermen and fishing communities more of a say in management decisions on the local level. At the same time, environmental groups say the stocks are not recovering quickly enough, a violation of federal law. They want the Fisheries Service to implement more draconian measures in order to save the stocks. In implementing the most recent changes to the groundfish plan, called Amendment 13, the courts, fishery management councils, and the Fisheries Service struggled to walk a line between the conflicting camps, angering many on all sides of the issue.

Reading:

Groundfish links (see course website) will include statements from panelists' organizations and press coverage on the debates over Amendment 13.

Hall-Arber, Madeleine, Dyer, C., Poggie, J, McNally, J. and Gagne, R. 2001. New England's Fishing Communities; MIT Sea Grant College Program MITSG 01-15, 2001. Chapter 1: Introduction and Theory, pp. 1-19; also read through the reports on a couple of individual ports that are familiar to you. Auditors: for a more brief introduction to this material, read pages 9-19 (you may need to scan earlier pages to get the definitions of some acronyms). For those of you directly involved with policy debates, you will get a great deal out of reading this entire report—since it came out, I have referred to it dozens of times.

Additional resources:

Kurlansky, Mark. *Cod: A Biography of the Fish that Changed the World*. New York: Penguin USA, 1997.

Carey, Richard A. Against the Tide: The Fate of the North Atlantic Fisherman. New York: Mariner Books, 1999, especially, Chapter 13: In Cod We Trust.

For a Canadian perspective: Harris, Michael. *Lament for an Ocean.* Toronto: McLelland & Stewart, Inc., 1998.

For some interesting information on relevant international issues, particularly Canada's role, see also Porter, G., Brown, J.W., Chasek, P.S., Global Environmental Politics, 3e. "Straddling and Highly Migratory Fish Stocks." Boulder, Colorado: Westview Press, 2000, p. 135-141.

Teacher resources:

"Fishing for Solutions: Proposals to Solving the Global Overfishing Problem in the Classroom." New York Times Daily Lesson Plan, March 10, 1999 by Alison Zimbalist, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19990310wednesday.html?searchpv=learning_lessons

"Rescue at Sea, Marine Conservation: A Science Lesson Plan." (Note: Consider adapting this activity to dispel stereotypes of fishermen or whalers.) New York Times Daily Lesson Plan, September 22, 1998 by Alison Zimbalist, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19980922tuesday.html?searchpv=learning_lessons

February 28- Managing for Multiple Uses: The thorny life of a marine resource regulator (assignment 1 due)

Craig MacDonald, Manager of Stellwagen Bank Marine Sanctuary
Vin Malkoski, Senior marine fisheries biologist and coordinator of the Environmental Review Program for Massachusetts Department of Marine Fisheries
Steve Tucker, Coastal/Marine Resources Specialist, Cape Cod Commission

Background lecture: Fisheries management and the roles of science and technology; National Environmental Protection Act and other mechanisms of governmental accountability

The people charged with managing marine resources have the unenviable task of deciding how to pursue the law and serve myriad stakeholders in the process. Their position places them in the line of fire between conflicting interest, and they themselves often come under attack from stakeholders or their proxies: congressional representatives demanding answers or lawyers demanding a day in court. Though they are meant to manage conflict and develop solutions, many regulatory agencies are accused of fueling conflict. In this panel regulators and marine resource managers from a variety of government agencies will discuss the challenges in their work, their successes, and their visions for the future.

Reading:

Multiple uses links including websites for the panelists' agencies and press coverage for specific issues with which each is grappling.

Dobbs, David. The Great Gulf: Fishermen, Scientists, and the Struggle to Revive the World's Greatest Fishery. Shearwater Books, 2000. Chapter TBA

Fukuyama, Francis. "Chapter 1: On the Human Situation at the End of History" in Trust: The Social Virtues and the Creation of Prosperity. Free Press Paperbacks, 1995.

Additional resources:

Hall-Arber, Madeleine and A. Christopher Finlayson, "The Role of Local Institutions in Groundfish Policy," in Boreman, J.S. et. al., Editors. Northwest Atlantic Groundfish: Perspectives on a Fishery Collapse, American Fisheries Society, 1997.

Lewicki, Roy J., Gray, B. and Elliott M. Making Sense of Intractable Environmental Conflicts: Frames and Cases. Island Press, 2002. Chapters TBA

Teacher resources:

"Bench-Pressing Issues: Exploring Topics that May Appear Before the Supreme Court." (note: you can adapt this to look at some of the litigation we have discussed in class, appearing primarily in federal district courts) New York Times Daily Lesson Plan, September 30, 2005 by Michelle Sale, The New York Times Learning Network, and Javaid Khan, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20050930friday.html?searchpv=learning_lessons

"Strong Convictions: Learning to Write Persuasive Editorials about Current News." New York Times Daily Lesson Plan, July 24, 2003 by Clayton DeKorne, The New York Times Learning Network, and Tanya Yasmin Chin, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20030724thursday.html?searchpv=learning_lessons

March 14- Salmon and water rights in the Klamath River Basin of Oregon & California

Panelists:

Greg Addington, Executive Director of Klamath Water Users Association or another KWUA representative (tentative, pending confirmation)
Dave Bitts, California salmon fisherman and member of Klamath River Basin Fisheries Task Force (tentative)
Dave Hillemeier, Yurok Tribe Fisheries Program Manager and California Tribal Representative to the Pacific Fishery Management Council Habitat Committee (tentative, pending confirmation)

Background lecture: Land use, coastal development, and non-point source pollution; Time allowed for class work on projects after panel

In the Pacific Northwest, salmon fishermen, environmental groups and farmers are arguing over allocation of water in the region's many rivers. In the drought of 2002, hundreds of thousands of young salmon died in the Klamath River in Oregon because the river lacked sufficient water, and fishermen who depend on that stock are enduring very lean years as a result. Efforts at cooperation have been halting, and federal officials have been reluctant to engage in creative solutions to the water allocation problem. This panel will bring together representatives of the fishermen, government officials, environmentalists, and agricultural interests.

Reading:

Pacific salmon links, including statements from panelists' organizations and press coverage on the Klamath River water rights debate.

Braunworth, William S., Welch, T. and Hathaway, R. "Background" in Water Allocation in the Klamath Reclamation Project, 2001: An Assessment of Natural Resource, Economic, Social and Institutional Issues with a Focus on the Upper Klamath Basin. Oregon State University Extension Service, Special Report 1037, 2001 (pdf available online—see website)

Additional resources:

Safina, Carl. 1997. Song for the Blue Ocean. New York: Henry Holt. If you want a complete and very readable overview of the issues surrounding salmon, read all of "Book Two: Northwest," pp. 117-301.

Teacher resources:

"Between a Rock and A Hard Place: Debating the Fate of Endangered Wild Salmon and the Economic Viability of a Dam in an American History Class." New York Times Daily Lesson Plan, September 27, 1999 by Abby Remer, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19990927monday.html?searchpv=learning_lessons

"The Disappearing Fish: Investigating the Causes and Effects of the Vanishing Wild Salmon"
New York Times Daily Lesson Plan, September 14, 1999 by Abby Remer, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19990914tuesday.html?searchpv=learning_lessons

"Talking Over the Wall: A Lesson about Conflict Resolution." (Note: Consider adapting this activity to look at a marine environmental issue) New York Times Daily Lesson Plan, April 11, 2001 by Rachel McClain, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/20010411wednesday.html?searchpv=learning_lessons

March 28- Herring and mackerel pair trawl fishery (assignment 2 due)

Panelists:

Peter Moore, Director, American Pelagic Assoc. (represents mackerel and herring fisheries)
Gib Brogran, Ocean Advocate, Oceana
Rich Ruais, Executive Director, East Coast Tuna Association

Background lecture: Food webs and human roles in shaping ecosystems; end run: the role of non-governmental efforts and cooperative partnerships in resolving conflict

A fleet of boats targeting herring and mackerel in the Gulf of Maine uses mid-water trawl nets so large they must be towed by a pair of vessels. This fishery has come under attack in the last couple of years from several fronts. Pair trawlers often have a large by-catch of juvenile haddock, a species that is slowly recovering from a crash and is supposed to be under tight management by federal fisheries policy. Whale scientists and whale-watch operators have reported changes in the distribution of some whales that eat herring and mackerel; some attribute these changes in distribution to the pair trawlers' impacts on the prey fish population. Fishermen who target Atlantic bluefin tuna say that bluefin are smaller, less numerous, and less fat and healthy than they were a decade ago because herring and mackerel—main prey items with lots of fat—are more scarce. The herring fishery supplies bait for the economically and culturally important New England lobster fishery. During the summer of 2005, a coalition of representatives from the various interest groups got together to propose changes in herring management that would help satisfy many of these concerns. The New England Fishery Management Council considered and then rejected their proposal. A new set of restrictions went on the herring fishery went into effect this winter. Representatives from several camps will make up this panel.

Reading:

Herring and mackerel links, including statements from panelists' organizations and press coverage on the debate over herring and mackerel fisheries.

Pauly, Daniel and Maclean, Jay. "Chapter 2: The Decline of North Atlantic Fisheries and Chapter 3: How Did We Get Here?" in In a Perfect Ocean: The State of Fisheries and Ecosystems in the North Atlantic Ocean. Island Press, 2003. Non-science-oriented students might want to skim technical passages. Pay special attention to the discussions about changes in food chains and the differences among large-scale and small-scale fisheries.

Additional resources:

If you would like to read alternative perspectives to those expressed by Drs. Pauly and Maclean, you may want to read some of Nils Stolpe's critiques of current fisheries science, the Pew Commission, and environmental advocates in the series of essays called FishNet USA (http://www.fishingnj.org/sitemap.htm).

Teacher resources:

"Is the Environment in Deep Water? Exploring Natural and Human Threats on Fresh Water and Marine Ecosystems."New York Times Daily Lesson Plan, Tuesday, November 30, 1999 by Alison Zimbalist, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19991130tuesday.html?searchpv=learning_lessons

"Conflicts of Current Interest: Analyzing Conflicts in News from Around the Globe Using Conflict Resolution Techniques." (Note: Consider adapting to a conflict over marine resources) New York Times Daily Lesson Plan, August 29, 2001 by Annissa Hambouz, The New York Times Learning Network, and Javaid Khan, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20010829wednesday.html?searchpv=learning_lessons

April 8- Saturday all-day workshop

Confirmed speakers/ workshop leaders:

Madeleine Hall-Arber, MIT Sea Grant Program's marine anthropologist
David Straus, pioneer in conflict resolution and founder of Interaction Inst. for Institutional Change

Guest speakers will discuss…

- conflict resolution methods and principles,
- the biological stakes of marine resource management issues,
- challenges facing maritime communities in a changing world, and
- case studies of successful resolution and solutions.

Break-out groups will discuss and practice conflict resolution strategies regarding specific marine issues and will brainstorm ideas for applying these principles in novel ways to specific conflicts.

Reading:

Look through this reading again to refresh your memory, perhaps read through more port summaries; this will help you get the most out of Dr. Hall-Arber's talk: Hall-Arber, M., Dyer, C., Poggie, J, McNally, J. and Gagne, R. 2001. New England's Fishing Communities; MIT Sea Grant College Program MITSG 01-15, 2001. Chapter 1: Introduction and Theory, pp. 1-19; also read through the reports on a couple of individual ports that are familiar to you. Auditors: for a more brief introduction to this material, read pages 9-19 (you may need to scan earlier pages to get the definitions of some acronyms).

Straus, David and Layton, Thomas C. How to Make Collaboration Work: Powerful Ways to Build Consensus, Solve Problems, and Make Decisions. Berrett-Koehler Publishers, 2002. Pages TBA

"The Death of Environmentalism: Global Warming Politics in a Post-Environmental World," by Michael Shellenberger and Ted Nordhaus, pp. 1-13. Pay special attention to the discussions of values and coalition building. You can download the essay from the website of the Breakthrough Institute at http://www.thebreakthrough.org/. The essay itself is at http://www.thebreakthrough.org/images/Death_of_Environmentalism.pdf.
(If you want to pursue this material further, the Breakthrough site also has links to their report on the Strategic Values Initiative and follow-up coverage of the debate over the essay in The Prospect. Grist Magazine has provided a comprehensive website about the debate. Start here: http://www.grist.org/news/maindish/2005/01/13/doe-intro/ to read the back story and follow links to rebuttals and additional materials (links to these materials on the Grist site are at the bottom of the intro page).

Teacher resources:

"Showdown in the New Wild West: Cowboys vs. Radical Environmentalists: An Exercise in Conflict Resolution for the Social Studies Classroom." (Note: Consider adapting to a marine resource issue.) New York Times Daily Lesson Plan, September 21, 1998
http://www.nytimes.com/learning/teachers/lessons/19980921monday.html?searchpv=learning_lessons

"Pick a Mountain Side: Resolving Conflict Over National Land Use." (Consider adapting this activity to a marine environmental issue, including memorandum of understanding and resolution components). New York Times Daily Lesson Plan, October 24, 2005 by Sierra Prasada Millman, The New York Times Learning Network, and Tanya Yasmin Chin, The Bank Street College of Education in New York City
http://www.nytimes.com/learning/teachers/lessons/20051024monday.html?searchpv=learning_lessons

April 11- Navy sonar and marine mammals

Confirmed panelists:

Dr. Peter Tyack- Cetacean Acoustics Expert, Woods Hole Oceanographic Institution
Rear Admiral Richard F. Pittenger, US Navy (Ret.)
Naomi Rose, Marine Mammal Advocate, Humane Society of the US

Joel Reynolds, Attorney, Natural Resources Defense Council
Navy representative not yet confirmed

Background lecture: Conflicting governmental mandates and cost/benefit analysis; more on technology and its role in marine resource management

The US Navy uses mid-frequency sonar to detect submarines and other potential threats in the ocean. Low-frequency sounds travel farther in water, and the Navy has proposed a new generation sonar array that would use very loud low frequency sounds to detect threats further from shore. Both anecdotal and forensic evidence suggests that these types of sonar can kill whales and dolphins. Though the mechanism is not clearly understood, scientists now believe that when these animals are exposed to the sonar nitrogen that is normally dissolved in their blood comes out of solution to form gas bubbles in veins and arteries. This condition, often called the bends or decompression sickness, occurs in human scuba divers when they surface too quickly. Whale advocates say that the condition is not only fatal, but also very painful. Navy officials have recently admitted that sonar may be a problem for whales and have begun tests to better determine its impacts, but they are reluctant to abandon plans for the new sonar arrays, citing national security concerns. Whale advocates, scientists, and supporters of the Navy's position will discuss this difficult issue.

Reading:

Sonar links, including websites of panelists' organizations and Navy sites and documents on sonar technology and impact studies.

Jasny, Michael, Reynolds, J., Horowitz, C., Wetzler, A. "Executive Summary," p. iv-vii, Sounding the Depths II: The Rising Toll of Sonar, Shipping and Industrial Ocean Noise on Marine Life. Natural Resources Defense Council, 2005. (pdf available online—see website)

Teacher resources:

"Dolphin Demeanor: Exploring Dolphin Behaviors in the Science Classroom." (Note: Consider extending this activity to examine potential effects of sonar.) New York Times Daily Lesson Plan, July 6, 1999 by Alison Zimbalist, The New York Times Learning Network
http://www.nytimes.com/learning/teachers/lessons/19990706tuesday.html?searchpv=learning_lessons

*** April 25- Offshore Oil Exploration on Georges Bank (date and topic are tentative)**

*** May 9- Whaling (date for this session is tentative, pending availability of speakers)** (assignment 3 due)

Note: This will be an international panel of speakers and will take some time to assemble. I'm corresponding with members and advisors of the International Whaling Commission to find a representative of at least one whaling nation and at least one aboriginal group claiming rights to whaling. This will be a delicate diplomatic process and cannot be rushed. The date of this session is subject to change depending upon availability of distinguished speakers.

Current likely panelists:

Dr. Randall Reeves, chairman, Cetacean Specialist Group of the World Conservation Union, and author of National Audubon Society *Guide to Marine Mammals of the World*
Erin Heskett, Whale Advocate, International Fund for Animal Welfare

Background lecture: International conflict over marine resource issues. Time allowed for class work on projects

For the last 40 years, the International Whaling Commission has been the arena for heated conflict between whale advocates and whaling nations such as Japan, Norway and Iceland. Important issues before the IWC include scientific whale hunting by whaling nations and aboriginal rights to whale traditional whale hunts. This issue not

only allows us to explore international conflict, it raises difficult questions as we seek to resolve conflict in the marine realm: Are some conflicts simply unresolvable? If so, can we agree to disagree? In such cases, how would we define success or recognize solutions? This panel would bring together whale advocates, scientists/historians, and representatives of whaling nations and peoples on the IWC.

Readings:

Whaling links including statements from panelists' organizations and some materials on the website of the International Whaling Commission.

Ellis, Richard. 1991. Men and Whales. New York: The Lyons Press. For a thorough overview of modern conflicts over whaling, read chapters 11, 12 and 13, pp. 386-500. Auditors: for a more brief introduction, read chapter 12, pp. 434-456, and part of chapter 13, pp. 469-500

Porter, G., Brown, J.W., Chasek, P.S., Global Environmental Politics, 3e. "Whaling." Boulder, Colorado: Westview Press, 2000, p. 93-98.

Teacher Resources:

"A Whale of a Difference: Exploring Different Perspectives on Commercial Whaling in Japan." New York Times Daily Lesson Plan, May 29, 2002 by Annissa Hambouz, The New York Times Learning Network, and Tanya Yasmin Chin, The Bank Street College of Education in New York City.
http://www.nytimes.com/learning/teachers/lessons/20020529wednesday.html?searchpv=learning_lessons

May 23- Final Session

Wrap-up discussion and project presentations.

Note: Final project presentations are scheduled for May 23; completed projects are due May 27th.

Grading criteria:

- Participation in class and online forum: 20%
- Three Assignments: 40%
- Final Project: 40%

For teachers enrolled for credit or PDPs: Social Studies and History Frameworks

1. This course will, via topical case studies in marine environmental issues, specifically and thoroughly address the learning standards in the **Grade 12 Elective: American Government** (USG.1.1 through USG.5.10), including standards regarding…

- The Nature of Citizenship, Politics, and Government
- Foundations of Government in the United States
- Purposes, Principles, and Institutions of Government in the United States of America
- The Relationship of the United States to Other Nations in World Affairs
- Roles of Citizens in the United States

2. This course will also allow teachers to make links between history/social science and science/technology at all relevant grade levels to address standards in both areas, as suggested by Appendix V of the science frameworks**:**

Historical and Social Context for Science and Technology/Engineering: Topics for Study. This list involves cross-disciplinary cooperation to explore topics in…

- The history of science
- The nature of science
- Benefits of science and technology/engineering
- Unintended negative effects from uses of science and technology/engineering
- How science and technology address negative effects from uses of science and technology/engineering

3. This course will also address these learning objectives under Massachusetts Learning Standards/ Curriculum Frameworks…

History and Social Science

Grades 5-6

- Explain the importance of maritime commerce in the development of the economy of colonial Massachusetts. (History, Economics)

    A. the fishing and shipbuilding industries
    B. trans-Atlantic trade
    C. the port cities of New Bedford, Newburyport, Gloucester, Salem, and Boston

- Describe the responsibilities of government at the federal, state, and local levels (e.g., protection of individual rights and the provision of services such as law enforcement and the building and funding of schools). (Civics)

- Describe the basic political principles of American democracy and explain how the Constitution and the Bill of Rights reflect and preserve these principles. (Civics)

    A. individual rights and responsibilities
    B. equality
    C. the rule of law
    D. limited government
    E. representative democracy

- Identify the three branches of the United States government as outlined by the Constitution, describe their functions and relationships, and identify what features of the Constitution were unique at the time (e.g., the presidency and the independent judiciary). (History, Civics)

- Explain how American citizens were expected to participate in, monitor, and bring about changes in their government over time, and give examples of how they continue to do so today. (History, Civics)

- Give examples of several well-known international organizations and explain their purposes and functions. (Civics)

Grades 8-12

- Interpret and construct timelines that show how events and eras in various parts of the world are related to one another. (History)

- Interpret and construct charts and graphs that show quantitative information. (History, Civics, Government, Economics)

- Explain how a cause and effect relationship is different from a sequence or correlation of events. (History, Civics, Economics)

- Distinguish between long-term and short-term cause and effect relationships. (History, Civics, Government, Economics)

- Show connections, causal and otherwise, between particular historical events and ideas and larger social, economic, and political trends and developments. (History, Civics, Government, Economics)

- Interpret the past within its own historical context rather than in terms of present-day norms and values. (History, Civics, Economics)

- Distinguish intended from unintended consequences. (History, Civics, Economics)

- Distinguish historical fact from opinion. (History, Civics, Economics)

- Define and use correctly mercantilism, feudalism, economic growth, and entrepreneur. (Economics)

- Explain how people or communities examine and weigh the benefits of each alternative when making a choice and that opportunity costs are those benefits that are given up once one alternative is chosen. (Economics)

- Explain how opportunity costs and tradeoffs can be evaluated through an analysis of marginal costs and benefits. (Economics)

- Describe the purpose and functions of government. (History, Civics)

- Explain the varying roles and responsibilities of federal, state, and local governments in the United States. (History, Civics)

- Explain the rights and the responsibilities of citizenship and describe how a democracy provides opportunities for citizens to participate in the political process through elections, political parties, and interest groups. (History, Civics)

- Describe how decisions are made in a democracy, including the role of legislatures, courts, executives, and the public. (History, Civics)

- Explain the important consequences of the Industrial Revolution. (History, Economics)

    A. the growth of big business
    B. environmental impact
    C. the expansion of cities

- Define each of the productive resources (natural, human, capital) and explain why they are necessary for the production of goods and services (Economics).

- Describe how clearly defined and enforced property rights are essential to a market economy.

- Explain how government responds to perceived social needs by providing public goods and services. (Government)

- Describe how the costs of government policies may exceed their benefits because social or political goals other than economic efficiency are being pursued. (Government)

Science and Technology/Engineering

Grades 6-8

- Present and explain data and findings using multiple representations, including tables, graphs, mathematical and physical models, and demonstrations.

- Draw conclusions based on data or evidence presented in tables or graphs, and make inferences based on patterns or trends in the data.

- Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.

- Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.

Grades 8-12

- Pose questions and state hypotheses based on prior scientific observations, experiments, and knowledge.

- Distinguish between hypothesis and theory as scientific terms.

- Communicate and defend a scientific argument.

- Explain how biotic and abiotic factors cycle in an ecosystem (water, carbon, oxygen, and nitrogen).

- Use a food web to identify and distinguish producers, consumers, and decomposers, and explain the transfer of energy through trophic levels.

- Identify the factors in an ecosystem that influence fluctuations in population size.

- Analyze changes in an ecosystem resulting from natural causes, changes in climate, human activity, or introduction of non-native species.

4. The course will also allow teachers to build upon these and other grade 4 standards:

- Define and give examples of natural resources in the United States. (Economics)

- Give examples of limited and unlimited resources and explain how scarcity compels people and communities to make choices about goods and services, giving up some things to get other things. (Economics)