

MAF 100: Human use and management of the marine environment

www.uri.edu/cels/maf/dalton/maf100/home.htm

Fall 2007
T, Th 11:00-12:15

How do humans use the ocean? What are the potential impacts of such uses on the natural environment? In what ways (legal, economic, political, or social) can we reduce or eliminate negative impacts and enhance positive impacts?

Welcome to Marine Affairs 100, *Human Use and Management of the Marine Environment*. In this course, we will begin to answer these questions by exploring coastal and marine resources and the ways in which humans interact with these resources. Throughout the semester, you will become familiar with some of the laws that have been developed to manage human interactions with the ocean, the people who use and/or appreciate marine resources, and the different approaches available for managing human activities.

Management of human uses in the marine environment requires creative ideas and solutions to complex problems. As we spend time examining current management issues, I encourage you to think about how we might improve upon the traditional ways of dealing with these issues. Be prepared to share your thoughtful and creative ideas during class discussions!

Description

In the first part of the course, you will gain a basic understanding of the natural features of the ocean and you will learn how coastal and marine resources are currently managed. Specific attention will be given to management efforts in the United States and in the Rhode Island region. In the second part of the course, we will explore several management issues in detail. Discussion of each management issue will be accompanied by a case study of a recent regional example. In the final part of the course, we will concentrate on comprehensive approaches to marine and coastal resource management. Ecosystem management approaches that we will examine in some detail include watershed management and marine protected areas management.

Readings

- (1) The following book is available for purchase at the URI bookstore:
An Introduction to Coastal Management, 2nd edition, Island Press
Timothy Beatley, David J. Brower, and Anna K. Schwab (2002)

In the syllabus, this book is referred to as Coastal Management.

- (2) The following book is on reserve at the URI main library:
Oceans, Facts on File Inc.
Trevor Day (1999)
There will be one class (Sept. 13) that will draw heavily from readings in this book. You are expected to read the assigned pages.

In the syllabus, this book is referred to as Oceans.

- (3) This course will draw on a number of on-line sources. All websites are indicated by <> and are hyperlinked from the syllabus. The web address of this syllabus is www.uri.edu/cels/maf/dalton/maf100/home.htm.

Many of the readings for the case studies are from various newspapers which can be accessed at URI through Lexis-Nexis. After clicking on the links for these readings on the online syllabus, you will be directed to the Lexis-Nexis Academic General Search page. You will need to search for the article listed on the syllabus by entering some terms. The best way to do this is to click on the red News tab near the top of the page and then enter:

Enter Search terms: type in the headline
Required terms: leave blank
Select sources: leave the default “News” selected
Specify date: click on the drop-down menu and highlight “Date is...” then enter the date of the article as listed in the syllabus
HIT THE RED SEARCH BUTTON

If your search results provide more than one title, click on the title that matches the title in the syllabus.

NOTE: If the syllabus link does not bring you directly to the Lexis-Nexis search page, go the databases page of the URI library website (www.uri.edu/library/reference_databases/title.html) and scroll down and click on Lexis-Nexis Academic. YOU WILL NEED TO ENTER YOUR NAME AND LIBRARY BARCODE TO ACCESS THE DATABASE FROM AN OFF-CAMPUS COMPUTER. If you have problems accessing the online readings, take a look at the Lexis-Nexis user guide at www.uri.edu/library/guides/databases/lexisnews/lexisnews.html and/or contact me as soon as possible.

Course Requirements

You are expected to complete and pass in four assignments. In the first assignment, you will be asked to answer short-answer questions based on the readings that we discuss in class. In the second and third assignments, you will be asked to write position statements about proposed management actions. In the final assignment, you will take part in a role playing exercise during class time and you will submit a reflection paper on your experience. I will provide handouts with more details on each of these assignments in class. Passing in assignments beyond their due date is not advised—I will deduct 10 points for each class day that the assignment is late.

There will be a mid-term exam and a final exam. These exams will consist of short answer questions and brief essay questions on the management issues discussed in the case studies. We will talk about the structure of the exams in class. Being absent on exam days is highly discouraged--see me before the exam if you absolutely cannot make it to class on the day of an exam.

Class participation is an essential part of this course. In addition to participating in a role playing exercise for assignment #4, you will be expected to participate in small in-class exercises throughout the semester. You will get credit as part of your class participation grade for participating in these in-class exercises.

You are expected to attend class, read the assigned readings, complete the assignments, and participate during class.

Grading

Assignments

#1 Short answer questions	75 pts.
#2 Public comment paper (Includes outline-10 pts.)	50 pts.
#3 Public comment paper (Includes outline-10 pts.)	50 pts.
#4 Paper on role playing	50 pts.
Mid term exam	100 pts.
Final exam	125 pts.
Class participation	50 pts.
Total	500 pts.

Grade scale	
Grade	%
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	60-66
F	below 60

Policies

Email

Feel free to contact me via email (dalton@uri.edu), however please use appropriate grammar (include punctuation marks, write in complete sentences, capitalize the word "I", etc.).

Attendance and participation

Attendance and participation in class is expected. In particular, if you miss an in-class exercise due to a medical or family emergency, University-approved activity, or religious observance, you must submit documentation in advance of the absence (if planned) or as soon as possible afterward (if due to an emergency).

Cheating and plagiarism

Cheating on exams or assignments is unacceptable in this class. In addition, I will not accept work that has been plagiarized (plagiarism: using someone else's ideas, statements, words, or thoughts without giving credit to the source of that information). Plagiarism/cheating includes copying a classmate's work. **THE DEPARTMENT OF MARINE AFFAIRS HAS A POLICY OF ZERO TOLERANCE FOR PLAGIARISM AND CHEATING.** Following department policy, I must give a zero on assignments in which plagiarism is evident. It is important to note that you can refer to information or ideas from another source, but you must cite that source in your work. If you are uncertain about what plagiarism is or how to properly cite sources, consult: Plagiarism—what it is and how to recognize and avoid it <http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>, and Sources <http://www.dartmouth.edu/~sources/contents.html>.

Disability Services

Any student with a documented disability is welcome to contact me early in the semester so that we may work out reasonable accommodations to support your success in this course. You can also contact Disability Services for Students, Office of Student Life, 330 Memorial Union, (401) 874-2098.

The Academic Enhancement Center

At the Academic Enhancement Center (AEC) in Roosevelt Hall, tutors can answer questions, clarify concepts, check your understanding, and help you to study for any course, including MAF 100. You can make an appointment or walk in anytime during office hours. For a complete schedule, go to www.uri.edu/aec, call (401) 874-2367, or stop by the fourth floor in Roosevelt Hall.

Overview of course schedule

WEEK	DATE	CLASS	ASSIGNMENT
Week 1	Sept. 6	Setting the context	
Week 2	Sept. 11	Introduction to ecosystem and coastal management	
	Sept. 13	Overview of the natural environment	
Week 3	Sept. 18	Overview of the natural environment	
		FINAL DAY TO ADD A COURSE	
	Sept. 20	Human connection to the marine environment: Federal management	
Week 4	Sept. 25	Human connection to the marine environment: State and regional management	
	Sept. 27	Human connection to the marine environment: Local involvement	Assignment #1 handed out
Week 5	Oct. 2	Human connection to the marine environment	
	Oct. 4	Conservation & development, <i>Case studies: Block Island (RI) and New London (CT)</i>	DUE: Assignment #1 Assn # 2 handed out
Week 6	Oct. 9	Vessel sewage discharge, <i>Case study: No discharge zone in RI</i>	DUE: Outline Assn #2
	Oct. 11	Oil spills	DUE: Assignment #2
Week 7	Oct. 16	<i>Case study: North Cape Oil Spill</i>	
	Oct. 18	MID-TERM EXAM	MID-TERM EXAM
Week 8	Oct. 23	Marine transportation	
	Oct. 25	<i>Case study: Liquefied natural gas terminals</i>	
Week 9	Oct. 30	Renewable energy sources, <i>Case study: Proposed wind farm in Nantucket Sound</i>	Assignment #3 handed out
		LAST DAY TO DROP NON-EARLY DROP COURSES	
	Nov. 1	Coral Reefs	
Week 10	Nov. 6	<i>Case study: Wellwood reef restoration</i>	DUE: Outline Assn #3
	Nov. 8	Invasive species, <i>Case study: Invasives in Narragansett Bay</i>	DUE: Assignment #3
Week 11	Nov. 13	Ecosystem management	
	Nov. 15	Marine protected areas, <i>Case study: Stellwagen Bank National Marine Sanctuary Advisory Council</i>	
Week 12	Nov. 20	Role playing exercise: advisory council	Assignment #4 handed out
	Nov. 22	NO CLASS-THANKSGIVING	
Week 13	Nov. 27	Watersheds	
	Nov. 29	RI Bays, Rivers, and Watershed Planning	DUE: Assignment #4
Week 14	Dec. 4	RI Bays, Rivers, and Watershed Planning (cont'd)	
	Dec. 6	Course wrap-up	
	Dec. 20	FINAL EXAM, 11:30 am, East Hall Auditorium	FINAL EXAM

Course outline and readings

Date	Class description
Sept. 6	Setting the context <i>Course overview</i> <i>Environmental history in the United States</i> <i>Ocean management history</i> <u>Readings:</u> none
Sept. 11	Introduction to ecosystem management and coastal management <i>What is coastal and ocean management?</i> <u>Readings:</u> Coastal Management, Chapter 1 (pp. 1-12) Pew Oceans Report—America’s living oceans (executive summary): www.pewtrusts.org/pdf/env_pew_oceans_final_report_summary.pdf
Sept. 13/18	Overview of the Natural Environment <i>Coastal and ocean ecosystems</i> <i>Biological properties</i> <u>Readings:</u> Coastal Management, Chapter 2 (pp. 13-46) Oceans, Atmosphere and the oceans pp. 64-65 (on reserve) Oceans, Biology of the oceans pp. 84-89 (on reserve)
Sept. 20	Human Connection to the Marine Environment <i>Federal government and federal programs, laws</i> <u>Readings:</u> Coastal Management, Chapters 4 and 5 (pp. 91-133) U.S. Coastal Zone Management Act (Sections 302 and 303 only) coastalmanagement.noaa.gov/czm/czm_act.html Description of legislative process (U.S. House of Representatives): www.house.gov/house/Tying_it_all.html NOAA’s Office of Ocean and Coastal Resource Management: www.nos.noaa.gov/programs/ocrm/welcome.html EPA’s National Estuary Program: www.epa.gov/owow/estuaries/ U.S. Fish and Wildlife Service Coastal Barrier Resources Act: www.fws.gov/cep/cbrfact.html NOAA’s Fisheries Service: www.nmfs.noaa.gov/what.htm

Sept. 25 Human Connection to the Marine Environment (cont'd)

State and regional management

Readings: Coastal Management, Chapters 6 and 7 (pp. 135-157; 173-174; 188-196)

History of RI laws:

<www.rilin.state.ri.us/lawrevision/lawsumry.htm>

R.I. Coastal Resources Management Council:

<www.crmc.ri.gov/whatis/greeting.html>

R.I. Dept. of Environmental Management:

<www.dem.ri.gov/topics/index.htm>

Stellwagen Bank National Marine Sanctuary Program--NOAA website on Stellwagen Bank (Introduction):

<sanctuaries.noaa.gov/about/faqs/welcome.html>

Sept. 27 Human Connection to the Marine Environment (cont'd)

Local government and public involvement

Readings: Coastal Management, Chapter 8 (pp. 197-248)

South Kingstown town council:

<www.southkingstownri.com/code/towncouncil.cfm>

Local organization--Save the Bay:

<www.savebay.org/about_stbhistory.asp>

Aquidneck Island Planning Commission:

www.aquidneckplanning.org/background.html

ASSIGNMENT #1 HANDED OUT

Oct. 2 Human Connection to the Marine Environment (cont'd)

Oct. 4 Conservation & Development

Case study: Block Island

For all case studies in this course, think about these questions: Who makes decisions? What is the history of the issue? What has been the outcome? How has the outcome been reached? Can we improve upon the outcome?

Readings:

The Providence Journal. June 5, 2005. Lord, Peter. Saving Block Island. Part one: Not for sale.

<www.projo.com/extra/2005/blockisland/content/day1.htm>

The Providence Journal. June 6, 2005. Lord, Peter. Saving Block Island. Part two: Coming aboard.

<www.projo.com/extra/2005/blockisland/content/day2.htm>

The Providence Journal. June 10, 2005. Lord, Peter. Saving Block Island. Part six: All together now.

<www.projo.com/extra/2005/blockisland/content/day6.htm>

The Nature Conservancy website (Private Lands Conservation).

<www.nature.org/aboutus/howwework/conservationmethods/privatelands/>

The Block Island Times. Nov. 22, 2004 (May 23, 2007). Tarbox, Heidi. Block Island Land Trust history.

<www.blockislandtimes.com/articles/2004/11/22/news/021.txt>

Case study: New London, CT

Readings:

The Associated Press. February 14, 2005. Apuzzo, Matt. Residents ask Supreme Court to block eminent domain in New London.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Associated Press. February 23, 2005. Yost, Pete. High court takes up New London's eminent domain case.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Associated Press. June 23, 2005. Yen, Hope. Supreme Court says cities can seize homes for private developers.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

ASSIGNMENT #1 DUE **ASSIGNMENT #2 HANDED OUT**

Oct. 9 Vessel Sewage Discharge

Readings:

Vessel Area requirements and regulations: Sewage Discharge Program:

<www.epa.gov/owow/oceans/regulatory/vessel_sewage/>

No Discharge Zones—how they work:

<www.epa.gov/owow/oceans/regulatory/vessel_sewage/vsdarticle.html>

EPA New England: No Discharge

<www.epa.gov/region01/eco/nodiscrg/require.html>

Case Study: No discharge zone in RI

Readings:

The Providence Journal. July 30, 1996. Lord, Peter. Bay mantra: "Pump it, don't dump it."

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Providence Journal. April 7, 1998. Lord, Peter. Tide turns on bid to ban discharge from boats:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

OUTLINE DUE ASSIGNMENT #2

Oct. 11 Oil and oil spills

Readings: NOAA State of the Coast Report--Managing spills (Introduction, National Picture, Contrasts, Case Studies):

<oceanservice.noaa.gov/websites/retiredsites/sotc_pdf/HMS.PDF>

Clean Water Act:

<www.epa.gov/oilspill/cwaover.htm>

Oil Pollution Act overview:

<www.epa.gov/oilspill/opaover.htm>

Oil Pollution Act text (Section 2702 Elements of Liability):

<www4.law.cornell.edu/uscode/33/2702.html>

ASSIGNMENT #2 DUE

Oct. 16 Case study: *North Cape Oil Spill in South Kingstown 1996*

Readings:

The Providence Journal. Jan. 21, 1996. Lord, Peter. Grounded barge leaks 700,000 gallons of heating oil:

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. Jan. 22, 1996. Lord, Peter. Oil Spill devastation spreads:

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. Jan. 28, 1996. Smith, Gregory. Salvaging the economy (Oil in the water):

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. Jan. 20, 1997. Abbott, Elizabeth. One year later--spill produces flurry of new regulation (Oil in the water):

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. Aug. 7, 2006. Lord, Peter. A decade after spill, R.I. coast has healed.

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

Oct. 18

MID-TERM EXAM

Oct. 23 Marine transportation

Readings:

1998 Year of the Ocean. The U.S. marine transportation system (pp. A1-A15):

[<www.yoto98.noaa.gov/yoto/meeting/mar_trans_316.html>](http://www.yoto98.noaa.gov/yoto/meeting/mar_trans_316.html)

U.S. Ports—Accepting the challenges of the 1990s. Coastlines publication:

[<www.epa.gov/owow/estuaries/coastlines/96winter.pdf>](http://www.epa.gov/owow/estuaries/coastlines/96winter.pdf)

Trade and Transportation: A Study of North American Port and Intermodal Systems:

[<www.uschamber.com/NR/rdonlyres/eqhetra2ubms6lzvvnhubfnaaspxwilbnk2x23uepwz55wc4jino66p64dkargku6baqqznmpt722aklfndhubhgz/portstudy_toc_0304.pdf>](http://www.uschamber.com/NR/rdonlyres/eqhetra2ubms6lzvvnhubfnaaspxwilbnk2x23uepwz55wc4jino66p64dkargku6baqqznmpt722aklfndhubhgz/portstudy_toc_0304.pdf)

Oct. 25 Case study: Liquefied natural gas terminals

Readings:

Citizens Guide—LNG overview:

[<www.ferc.gov/for-citizens/citizen-guides/lng.asp>](http://www.ferc.gov/for-citizens/citizen-guides/lng.asp)

Project review process. FERC:

[<www.ferc.gov/industries/lng/gen-info/rev-proc.asp>](http://www.ferc.gov/industries/lng/gen-info/rev-proc.asp)

About the Project. Weavers Cove Energy:

[<www.weaverscove.com/proposal-about.html>](http://www.weaverscove.com/proposal-about.html)

The Providence Journal. July 1, 2005. McKinney, Michael. LNG Controversy—‘We’ll continue this fight as long as we need to’

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. July 2, 2005. Barmann, Timothy. Many hurdles remain for Fall River LNG plans.

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. May 11, 2007. Barmann, Timothy. Guarded pessimism—Coast Guard letter cites safety issues for LNG port.

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

The Providence Journal. August 11, 2007. Kuffner, Alex. DEM rejects dredging permit for LNG facility.

[<0-web.lexisnexis.com/helin.uri.edu/universe>](http://web.lexisnexis.com/helin.uri.edu/universe)

Oct. 30 **Renewable energy sources**

Alternative energy sources

Readings:

National Renewable Energy Laboratory--What is renewable energy?:

<www.nrel.gov/learning/re_basics.html>

EPA sources of renewable energy and environmental impacts:

<www.epa.gov/cleanrgy/renew.htm>

U.S. Dept of Energy--wind energy:

<www.nrel.gov/learning/re_wind.html>

<www.nrel.gov/wind/animation.html>

Case study: Proposed wind farm in Nantucket Sound

Readings:

Cape Wind—Project at a glance:

<www.capewind.org/modules.php?op=modload&name=Sections&file=index&req=viewarticle&artid=24&page=1>

The Boston Globe. November 8, 2004. Daley, Beth. Report sees few drawbacks on wind farm:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Boston Globe. December 7, 2004. Daley, Beth. Wind farm plan stirs passions:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Boston Globe. May 11, 2005. State board approves wind farm cables:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Boston Globe. April 7, 2007. Ebbert, Stephanie. Wind farm project dealt setback by U.S. agency:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

ASSIGNMENT #3 HANDED OUT

Nov. 1 **Coral reefs**

Readings: NOAA's State of the Coast Report--The extent and condition of U.S. coral reefs (Introduction, National Picture, Contrasts, Case Studies):

<oceanservice.noaa.gov/websites/retiredsites/sotc_pdf/CRF.PDF>

NOAA's Coral Reef Information System--What are corals and coral reefs?

<www.coris.noaa.gov/about/what_are/>

Nov. 6 **Case study: Wellwood reef restoration**

Readings:

Marine Sanctuaries Habitat Page--Coral reefs of the sanctuaries (Florida Keys section):

<sanctuaries.noaa.gov/about/ecosystems/coral_fk.html>

Marine Sanctuaries Habitat Page—Natural and anthropogenic influences:

<sanctuaries.noaa.gov/about/ecosystems/coralimpacts.html>

Wellwood coral reef restoration project

The Project:

<sanctuaries.noaa.gov/special/wellwood/project.html>

The Design:

<sanctuaries.nos.noaa.gov/special/wellwood/restoration.html>

OUTLINE DUE ASSIGNMENT #3

Nov. 8 Invasive species

Readings:

What is an invasive species?

<www.invasivespeciesinfo.gov/whatis.shtml>

National Invasive Species Act (1996):

<www.nemw.org/nisa_summary.htm>

National Management Plan Executive Summary:

<www.invasivespeciesinfo.gov/council/execsumm.shtml>

Case Study: Invasives in Narragansett Bay

Readings:

The Providence Journal. Oct. 25, 1998. Sabar, Ariel. A new menace: zebra mussels:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Boston Globe August 9, 2003. Haynes, Tim. Underwater invaders eyed:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Providence Journal. July 11, 2006. McKinney, Michael. Phragmites a costly opponent at country club.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Providence Journal. July 20, 2006. Davis, Paul. Beetles do battle with invasive weed.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

ASSIGNMENT #3 DUE

Nov. 13 Ecosystem management

Readings:

R. E. Grumbine. 1994. Conservation Biology. What is Ecosystem Management?

Nov. 15 Marine Protected Areas

Readings:

Coastal Management, p. 116

Developing a national system of MPAs in the U.S.:

<mpa.gov/national_system/>

National Marine Sanctuary program:

<www.sanctuaries.nos.noaa.gov/about/faqs/welcome.html>

National Marine Sanctuary Act (Section 301 only):

<www.sanctuaries.noaa.gov/library/National/NMSA.pdf>

Case study: Stellwagen Bank National Marine Sanctuary

Readings:

Stellwagen Bank (FAQs):

<stellwagen.nos.noaa.gov/about/faq.html>

Stellwagen Bank Advisory Council:

<stellwagen.nos.noaa.gov/management/sac/sachome.html>

Public participation:

<seagrant.gso.uri.edu/scc/tools/participation_tips.pdf>

Nov. 20 Role Playing Exercise: Advisory Council

ASSIGNMENT #4 HANDED OUT

Nov. 27 Watersheds

Readings:

Coastal Management, pp.175-180

EPA's introduction to watersheds:

<www.epa.gov/owow/watershed/index2.html>

EPA Watershed approach:

<www.epa.gov/owow/watershed/wa1.html>

RI DEM Sustainable Watersheds Office:

<www.dem.ri.gov/programs/bpoladm/suswshed/index.htm>

Nov. 29 RI Bays, Rivers, and Watershed Planning

Readings:

The Providence Journal. August 21, 2003. Greenwich Bay hit by huge fish kill:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Associated Press. October 22, 2003. Carcieri to form Narragansett Bay Commission:

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

The Governor's Narragansett Bay and Watershed Planning Commission:

<www.ci.uri.edu/GovComm/Default.htm>

Rhode Island Bays, Rivers, and Watersheds Coordination Team. CHAPTER 46-31, Sections 1-5.

<www.rilin.state.ri.us/Statutes/TITLE46/46-31/INDEX.HTM>

Timeline leading to creation of Coordination Team:

<www.ci.uri.edu/RIBayTeam/Docs/Timeline.gif>

The Providence Journal. August 5, 2006. Carbone, Gerald. Bay bottom is starved for oxygen; fish can't live.

<[0-web.lexisnexis.com/helin.uri.edu/universe](http://web.lexisnexis.com/helin.uri.edu/universe)>

ASSIGNMENT #4 DUE

Dec. 4 RI Bays, Rivers, and Watershed Planning (cont'd)

Dec. 6 Course Wrap-up

Dec. 20 FINAL EXAM, 11:30AM, EAST HALL AUDITORIUM