

GEOG 423
Fall 2011
M, W 9 to 10:15 a.m.
Saunders Hall 443B

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office hours: M, W 11-noon
office: Saunders 440
Teaching Ass't: Laura Chen Allen

HUMAN DIMENSIONS OF THE COASTAL OCEAN

The coastal ocean is a globally significant ecosystem with economic, cultural and historical importance to humanity. It is also where humankind has most altered the natural world. In this course we will consider both the evolving scientific understanding and social values that influence human activities in the coastal ocean. We will also examine efforts to control and mitigate these impacts through planning and management and other forms of collective action.

Course learning objectives: The goal of the course is to gain an understanding of the history and current challenges of human activities in the coastal ocean; to identify and assess the major social and environmental issues facing the coastal ocean; to develop the capacity to apply theory and research from a range of disciplines to problems of managing human impacts on the coastal ocean. It is recommended that students have previous coursework or research experience in the physical attributes of the coastal ocean.

The course will be in six main units:

- I. Introduction and a Theoretical Framework
- II. Fisheries
- III. Protection of the Marine Environment
- IV. Beaches and Coastal Development
- V. Marine Pollution
- VI. Marine Wildlife

Readings and assessment: The readings will be posted to the Laulima course web page. You are responsible for reading the assignment before class and considering the “reaction” questions given on those readings at the beginning of the unit. *You should prepare a response to these questions as part of your preparation for class.* As the semester progresses, your responses should refer to earlier readings as relevant.

Quizzes: Students will take two in class quizzes. Each quiz will be worth 10% of the student’s overall grade and will be administered during the class period. Quizzes will contain between 1 and 4 short answer/short essay questions on the subject of the readings and lectures from the preceding units. Each quiz will contain at least one question that presents a fact pattern that illustrates a coastal ocean planning or management challenge. The question will ask you to analyze this fact pattern in light of what they have learned from class and the readings. Quizzes are designed for students to demonstrate their analytical reasoning skills utilizing the theoretical concepts and constructs garnered from the class and will not require memorization of specific facts. An example of a specific fact would be the length of the coastline in Hawaii or the amount of sea level rise projected to occur with a 2 degree C rise in global average temperature. An example of a theoretical concept is a “common property resource.” Students will be graded on

the quality of their reasoning and their ability to support their arguments with information from reading and lectures, rather than being graded against a hypothetical “right” answer.

Exercise I: Exercise I will be a mock public meeting. Giving written and oral comments to government decisionmakers on proposed projects is an avenue open to all members of the public to express their views on human uses of the coastal zone and oceans. Exercise I will familiarize students with this process and prepare them to present testimony to a real committee or agency in the future. In this exercise, students will prepare written testimony of one page or less in response to a hypothetical administrative proceeding. Students will also present their testimony to the class in strictly-timed 3 minutes or less. Students will be allowed to choose their “angle” on the issue, but the professor will select whether they will be in favor or opposed to the project in advance in order to ensure a balance of perspectives. Students will be graded on a system of check, check plus, check minus or zero (for absence or incomplete assignments). Exercise I will be worth 10% of the overall grade. Students will be given a handout detailing the exercise.

Exercise II: Exercise II will be a class debate. Students will be assigned groups in advance and will be given time during the preceding class for strategy and to coordinate their arguments. Each student will be graded individually, so all students must be prepared to participate in the debate. Students may make appeals based on values or sentiment as part of their debate strategy. There is no written component to this exercise. Students will be graded on a system of check, check plus, check minus or zero (for absence or incomplete assignments). Exercise II will be worth 10% of the overall grade.

Reaction Papers: Students must complete 5 reaction papers over the course of the semester on five separate units of the course. These are short papers that should not summarize the reading but rather focus on the student’s reaction to the questions posed for that day’s readings. These are not formal papers that require citation or additional research and though students should utilize the reading materials in their responses, they are encouraged to include their personal opinions and evidence from their own experiences. Reference to sources outside the class are welcome, but students should keep academic honor in mind and give credit for ideas not their own. Students should not submit more than one reaction paper per section of the class. There are 6 sections, so students should submit one reaction paper for 5 out of the 6 sections. The minimum page limit is ½ a page, single-spaced; there is no maximum. Students should use the Dropbox function of Laulima to submit their papers before the first class of the next unit, as stated on the revised syllabus. Students will be graded on a system of check, check plus, check minus or zero (for absence or incomplete assignments); these grades will be included in the participation grade which is 20% of the entire grade.

Final Paper and Presentation: Finally, student will submit a short research paper (10 pp. double-spaced) and presentation on some issue in the human dimensions of the coastal ocean. A one-paragraph page describing your topic for the final paper is **due Oct. 17**. (We will provide a list of suggested topics by Sept. 28.)

The proportion of the grade is as follows:

Class participation and 5 reaction papers	20%
2 Quizzes and 2 exercises (10% each)	40%
Final paper and presentation	40%

Late papers will be penalized by a grade reduction commensurate with the lateness (e.g., one day late: a B+ becomes a B, etc. More than one day late, a full grade is deducted: B+ becomes a C+).

Syllabus

(NOTE: The topics and reading assignments are subject to change. Please be sure you are aware of the latest assignments by checking on the Laulima course web page.)

I. Introduction and a Theoretical Framework: The Tragedy of the Commons

- Aug. 22 Introduction to the course
- Aug. 24 The state of the oceans and coasts; some history of sea use
Readings: Roberts, *The Unnatural History of the Sea*, ch. 2, 11, and 18;
Pew Oceans Commission, 2003, *America's Living Oceans*, pp. 1-20.
- Aug. 29 The "Tragedy of the Commons" paradigm
Readings: G. Hardin, 1968, "The Tragedy of the Commons";
E. Ostrom, 1990, *Governing the Commons*, Ch. 1
- Aug. 31 Is the "tragedy of the commons" inevitable?
Readings: Meltzoff, 1995, "Marisquadoras of the Shellfish Revolution";
Acheson, 2003, *Capturing the Commons*, ch. 3 (The Island Game).
- Sept. 5 LABOR DAY – no class

II. Fisheries: Single-Species and Ecosystem-Based Management

- Sept. 7 Managing fisheries through input controls
Readings: Wallace & Fletcher, *Underst'g Fisheries Management*, 1-22;
Kurlansky, 1997, *Cod: Fish That Changed the World*, ch. 8.
- Sept. 12 Managing fisheries through catch shares/ exclusive access rights
Readings: Anderson & Leal, 2001, "Homesteading the Oceans";
Levy, 2010, "Catch Shares Management".
- Sept. 14 The ecosystem-based approach to marine management
Readings: Agardy et al, 2011, "Taking Steps Toward Coastal Ecosystem-based Management".
- Sept. 19 **Quiz I** (on Units I and II)

III. Place-Based Protection of Marine Environment

- Sept. 21 Marine Protected Areas as sources and baselines (the "why" of MPAs)

Readings: Roberts, 2001, "Effect of marine reserves on adjacent fisheries."
<http://hawaiihumpbackwhale.noaa.gov/>

- Sept. 26 How MPAs are created: by decree or public participation; Hawaii's MPAs (the "hows" of MPAs)
Readings: Maurin, 2008, "West Hawaii's Fisheries Council Case Report;" (See also ecotippingpoints.org/our-stories/in-depth/usa-hawaii-fisheries-council-community-participation.html);
Antolini, 2004. "Marine reserves in HI: call for community stewardship".
- Sept. 28 Marine Spatial Planning
Readings: Crowder et al., 2006, "Resolving mismatches in U.S. ocean governance."
- Oct. 3 Values, ethics and the oceans
Readings: Kellert, 2003, "Human values, ethics, & marine environment";
Chang, 2010, "Indigenous values and the law of the sea."
- Oct. 5 **Exercise I:** public testimony on revising the management plan for the Hawaiian Islands Humpback Whale National Marine Sanctuary

IV. Beaches and Coastal Development

- Oct. 10 Beaches: Why do we hurt the ones we love?
Readings: Pilkey et al, 2011, *The World's Beaches*;
Pilkey & Young, 2010, *The Rising Sea*, ch. 1&2.
- Oct. 12 Open ocean aquaculture
Readings: Duarte et al, 2009, "Will the Oceans Help Feed Humanity?";
Browse <http://www.foodandwaterwatch.org/fish/fish-farming/hawaii/>
Other readings TBA on proposed fish-farming in HI.
- Oct. 17 Sea level rise and coastal erosion management
Readings: Norcross-Nu'u et al., Sea level rise planning on Maui;
HI Dept of Land & Nat Resources, *HI Coastal Erosion Plan*.
- Oct. 19 Recreation and tourism management: case study of Hanauma Bay
Readings: Vieth & Cox, 2001, "Sustainable Use Mgt of Hanauma Bay";
Mak & Moncur, 1998, "Political Economy of Protecting a Unique Recreational Resource: Hanauma Bay."
See also <http://ecotippingpoints.org/our-stories/indepth/usa-hawaii-hanauma-environmental-management.html>
- Oct. 24 Ocean energy development and transportation
Readings: Kempton et al, *Offshore Wind: The View from Cape Cod*;

Grandy, 2009, “Superferry and the evolution of HI’s environmental review process”.

Oct. 26 **Exercise II:** Offshore fish farming in a national marine sanctuary

V. Marine Pollution

Oct. 31 Non-point source pollution (runoff from the land); the *ahupa ’a* in ancient Hawaii; restoring the Chesapeake Bay and eliminating its “dead zones”
Readings: Derrickson et al, 2002, “Watershed mgt & policy in HI”;
Powledge, 2005, Chesapeake Bay restoration: A model of what?”

Nov. 2 Aquatic invasive species: intentional and accidental introductions of marine organisms; Class exercise: the black mussel
Readings: HI DAR, Fisk Life: “Scientists probe role of invasive roi”;
State of HI, Aquatic Invasive Species Mgt. Plan (summary and assigned sections).

Nov. 7 Global sources and local impacts: the North Pacific “garbage patch” and ocean acidification
Readings: Coulter, 2010, “Stopping the Spread of the Pac Garbage Patch”;
Scigliano, 2011, “The Great Oyster Crash.”

Nov. 9 Review of Parts IV and V; individual consultations on paper proposals

Nov. 14 **Quiz II** (on Parts IV and V)

VI. Conservation of Marine Wildlife

Nov. 16 ‘Save the dolphins’: Ethical basis for protection of marine species

Readings: M. Schoell, “The Marine Mammal Protection Act and its Role in the Decline of San Diego’s Tuna Fishing Industry,” *San Diego Historical Society Quarterly* (Winter 1999)

<http://www.sandiegohistory.org/journal/99winter/tuna.htm>

Optional additional reading:

D.G. Burnett, “A Mind in the Water: The Dolphin as our Beast of Burden,” *Orion Magazine* (May/June 2010)

<http://www.orionmagazine.org/index.php/articles/article/5503/>

Nov. 21 Challenge of protecting marine wildlife in Hawai’i
Readings: S. Sarhangi, “The Unknown Cetacean: In Search of Hawaii’s False Killer Whale,” *Hana Hou! Magazine* (Oct/Nov 2011).
<http://hanahou.com/pages/magazine.asp?Action=DrawArticle&ArticleID=1012>

Please look at online resource: NOAA's DolphinSmart program
<http://sanctuaries.noaa.gov/dolphinmart/>

- Nov. 23 Recovering Relic and Keystone Species
Readings: Margavio et al, 1993, "Captives of conflict: The TEDs Case" (on Laulima);
J. Conrow, "Cute with Consequences," *Honolulu Weekly*, Sept. 28, 2011
<http://honoluluweekly.com/cover/2011/09/cute-with-consequences/>
- Nov. 28 Student presentations of final projects:
Louise: derelict fishing gear, ghost fishing and policy options
Alex: would catch shares improve HI's commercial fisheries?
Candace: is community-based management of inshore and reef fisheries feasible in HI?
Jenny: HI's role in the global aquarium fish trade
Adam L.: public attitudes toward the sustainable seafood campaign: what do chefs and servers think?
- Nov. 30 Aydee: should piers and artificial reefs be considered "essential fish habitat" under the Magnuson-Stevens Act?
Ty: is there a trade-off between restoring HI fish ponds and coastal water quality?
Ashley: the endangered Hawaiian monk seal: public attitudes about recovering a relic species
Ken: Marine invasive algal species: is HI losing the battle?
- Dec. 5 Mette: Coral reef etiquette: how effective is Hanauma Bay's mandatory educational video?
Adam V.: local actions that could improve HI's coral reefs resilience to ocean acidification
Keani: visitor attitudes about removing the HI green turtle from the endangered species list
Natalie: Waikiki visitors' perceptions of the marine debris problem and the "Great Pacific Garbage Patch"
- Dec. 7 Wrap-up and final discussion