

**Oceanography 331**  
**Living Resources of the Sea: Mai Ke Kai, Mai Ke Ola**  
MSB 100  
Fall 2016

9:00 – 10:15 AM, Tuesdays and Thursdays  
Instructors: Rosie Alegado, office C-MORE 118, [r alegado@hawaii.edu](mailto:r alegado@hawaii.edu), 956-0565  
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\*\*Syllabus schedule subject to change\*\*

**Philosophy**

Our goal is to have a class open to students from a diversity of backgrounds that will provide them with a basic understanding of marine resource use, an issue affecting all of us.

**Student Learning Outcomes:**

- Students will be able to explain how marine food web processes function to produce commercially important fisheries in various oceanic realms, and discuss reasons for limitations to fisheries catches.
- Students will be able to compare and contrast terrestrial and marine living resource management.
- Students should be able to integrate and frame the impact of indigenous fishery practices and the evolution of fishery technology to various commercially important fisheries throughout the world.
- Students will be able to discuss the basic principles of fisheries management, and deduce the practical and theoretical problems in their application.
- Students will be able to make links between the changing importance of aquaculture globally in supplying seafood to an increasing demand.
- Students will be able to compare and contrast the histories of fisheries and aquaculture in Hawaii, the Pacific Rim, and globally.
- Students will be able to estimate anthropogenic influences on the ocean such as climate change and pollution affecting fisheries.

**Online Resources:**

- Lulima!!!
- Class tumblr blog: <https://www.tumblr.com/blog/ocn331>

**Office hours:**

In addition to the office hours specified below you can make appointments and you are also welcome to email us (but please do not expect immediate email responses).

Alegado – TTh – 10:15-11:30, HIG 211

Drazen – TTh – 10:15-11:30, MSB 605

## Course Schedule

Your grade in the course is based on quizzes, discussion assignments/homework, two mid-term exams, and a final exam. Your grade on the quizzes will be based on your best 5 of 6 quiz scores. Quizzes will be take home but work independently. Discussion assignments are short answer responses to an in class activity or discussion.

### Grading Scheme

Quizzes (5 of 6)	50 points
'Discussion' assignments (4)	40 points
Midterm 1	100 points
Midterm 2 (take home)	100 points
Final Exam	100 points
Class participation	20 points
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Total	410 points

### Outside Class Field trips (sign up for one – details TBA)

Attendance of the field trip you are assigned to is MANDATORY

*\*\*Failure to attend will result in the loss of one letter grade.\*\**

- He'eia Fishpond (Rosie): Saturday October 22, 8 am - noon
- Fish market (Jeff): October, 5:00 am – 8:30 am, **date TBD**
- Oceanic Institute Aquaculture facility (Jeff): Friday Dec 2, 1pm – 4 pm

### Discussion assignments

These are in class activities with a written and graded component. These may include debates of a current topic, learning to solve theoretical problems, or assignment and discussion of a pertinent article. Please actively contribute in class! There will also be a short worksheet with questions or short exercises to complete and turn in during our next class meeting time.

### Quizzes & Midterms

Sept 8	Module 1: Introduction
Sept 20	Module 2: Traditional Pacific fisheries
Sept 22	MIDTERM (in class)
Oct 13	Module 3: Industrial fishing
Nov 3	Module 4: Contemporary management practices
Nov 10	MIDTERM (take home, this is due date in class)
Nov 22	Module 5: Climate change, pollution and fisheries
Dec 8	Module 6: Aquaculture

Module	Week	Month	Day	Topic
<b><u>Introduction</u></b>				
	1	Aug	23 25	The importance of fisheries – food, natural products, etc. (RA) Background Oceanography (JD)
	2	Sept	30 1	Marine food webs and limits to fisheries production (JD) Overview of fishing methods (JD)
	3		6	The need for management – tragedy of the commons, differences between marine and terrestrial resources (RA)
<b><u>Indigenous Pacific and community based fisheries management</u></b>				
			8	Native Hawaiian marine resources and management: ahupua'a, tenant rights (RA)
	4		13 15	Community Co-management in the Pacific (RA) Community Co-management in Hawaii (RA)
	5		20 22	Discussion (traditional and community based management) MIDTERM 1 – in class
<b><u>Industrial fishing (and industrialization of the industry)</u></b>				
	6		27 29	Gadoid and Clupeid fisheries (JD) Salmon and north Amerindian fisheries (RA)
	7	Oct	4 6	Highly migratory species: law of the sea, regional management (RA) Whaling (JD)
	8		11 13	Tuna (JD) DISCUSSION (current Pacific tuna management)
<b><u>Contemporary Management strategies</u></b>				
	9		18 20	MSY and single species stock assessment (JD) Recruitment and recruitment variation (JD)
	10		25 27	DISCUSSION (estimating allowable catch) Protected species management (Guest: Dr. Frank Parrish, NOAA)
	11	Nov	1 3	Catch and effort controls, marine protected areas (JD) Status of global fisheries (JD), take home MIDTERM 2
	12		8	ELECTION DAY – no class
<b><u>Climate change, pollution and fisheries</u></b>				
			10	Natural cycles of change: El Nino and the Peruvian anchovetta

(JD), **MIDTERM 2 DUE**

13	15	Anthropogenic change: primary production, acidification (JD)
	17	Pollution and the seafood supply (RA)
14	22	<b>DISCUSSION (plastics' effects on marine resources)</b>
	24	Thanksgiving: no class
<b><u>Aquaculture</u></b>		
15	29	Overview: principles, potential and issues (Guest: Dr. Paul Bienfang, UH)
	Dec 1	Aquaculture continued (Guest: Dr. Paul Bienfang, UH)
16	6	Native Hawaiian fishponds (Guest: Keli'i Kotubetey , POH)
	8	Review for final exam

**FINAL EXAM: Thurs Dec 15 (9:45-11:45)**