

SIO 286

**Marine Science, Environment and Policy
Coastal Wetland Ecology, Conservation and Management**

Instructor: Lisa Levin (4-3579, llevin@ucsd.edu, Rm 2236 Sverdrup Hall)

Place: 4500 Hubbs

Time: Tuesdays 1:30-4:30 PM

Format: This class will combine instructor lectures, guest lectures and discussion, field trips to local wetlands, and reading with a class project on wetland restoration in Mission Bay. Many class periods will be divided into three segments, with a wetland science lecture, a guest lecturer focused on management and/or conservation, and an hour devoted to the class project. On 4 dates we will visit local wetlands to examine specific features first hand (e.g., invasion, restoration, reserve creation) and discussions with experts will be held on site. Each of the field trip sites has restored habitat and we will pay particularly close attention to these areas. Students will be asked to read several articles each week to prepare for class or field trips. My goal is to introduce you to a broad spectrum of topics introduced by people with a range of perspectives.

Class materials, readings, and lectures can be found at ted.ucsd.edu.

Grading will be based on 2 short quizzes on reading and lecture material (Jan 27 (10%), March 3 (15%)), and the class project involving project outlines (10%), a written project report in two parts (40%) and an oral presentation (25%).

Class Project: The class will examine past restoration activities in southern California, summarize the successes and failures and use this information to develop recommendations for wetland restoration in upper Mission Bay including the Kendall Frost Marsh Reserve and the adjacent Campland properties. Initial research will be conducted in small groups to prepare background reports. The class will come together to formulate one or more documents that will be forwarded as recommendations to the City of San Diego and the UC Reserve System. More details are provided on the attached sheet.

Course Project: Mission Bay Restoration Using Lessons from the Past to Plan for the Future

The UC Kendall Frost/Mission Bay Northern Wildlife Preserve is small and likely to shrink as sea level rises. An important option for expansion involves the restoration to wetland of the adjacent properties including Campland (and possibly De Anza Cove). This project will a) examine the successes and failures of past restoration projects in southern California coastal wetlands and b) use this information to make recommendations regarding restoration activities that can help the City of San Diego and the UC Reserve System preserve, maintain and expand wetland functions in Mission Bay.

Restoration Study Groups:

1. **Structural Restoration**- elevations, hydrology (and SLR), sediments, flooding, creek redirection/restoration
2. **Biotic Restoration A** - Vegetation (including invasive and endangered species)
3. **Biotic Restoration B** – Animals (including invasive and endangered species)
4. **Implementation and Monitoring:** Economics (cost tradeoffs), funding sources, task list, timetables
5. **City planning, Social Issues and Politics:** jurisdictions, competing interests, legal issues, permitting, attitudes & receptivity, residents, friends groups etc.
6. **Education and outreach**

Project Report Outline: (including invasive and endangered species)

- I. Introduction to the Issues
- II. Overview of Relevant Past Restoration activities in Southern California
 - a. Tijuana Estuary
 - b. San Diego Bay
 - c. Mission Bay
 - d. San Dieguito Lagoon
 - e. Other North County Lagoons (Agua Hedionda, Baticuitos)
- III. Kendall Frost Restoration Options and Goals
- IV. Application of Lessons Learned from past Restoration
- V. Executive Summary/Conclusions

Each group will be responsible for the following:

- (a) Identify past restoration projects of relevance to your topic in southern California
- (b) Summarize lessons learned on your topic, include field trip observations
- (c) Upload relevant reference materials to share
- (d) Interview by phone/skype/email/visits local experts and gather opinions
- (e) Review existing Kendall Frost/Mission Bay restorations plans... those funded, in progress and developed by past SIO 286 classes
- (f) Recommend restoration goals & actions based on lessons learned from past activities
- (g) Illustrate with photographs, maps, drawings
- (h) Work with other groups to provide seamless recommendations
- (i) Contribute to (write) an integrated final planning document
- (j) Present recommendations in class during the final exam period (via ppt).