



Ocean Science & Public Policy CAS NS 320 (3 credits)

Instructor: SEA Faculty

Course Overview: Culture, history, political systems, economics, and science all shape ocean and climate policy. In this course, students explore current issues and methods at the intersection of ocean science and international, national, and local environmental and climate decision-making.

Evaluation:

Climate Conversation Essay 40%

Future Ocean Presentation 40%

In-Class Participation 20%

Assignments:

Climate Conversation Essay

In Week 1, each team will receive a prompt, a statement about some aspect of climate change that requires bridging marine/climate science and stakeholder engagement. As a team, you will design a conversation to address the prompt. A conversation is not a series of monologues. Nor is it a formal debate. People in conversation listen to each other. They respond to what the other has said. They may disagree, but they do so respectfully. It is up to you whether you agree with the prompt, and with each other.

You must do some research, pulling information from academic journal articles and books; legit news outlets. List your sources—minimum 5 per team. Provide the authors' names and titles of the articles and books. If it is an article, provide the name of the journal or news publication. If the source is a chapter in an edited volume, provide the name of the book and its editors. Lastly, provide page numbers and year of publication. Provide this information at the end of your documents, following the conversation.

The deliverable: A typed transcript of your conversation, about six pages, double-spaced. Be sure to identify who is speaking. Include your names and your prompt at the top of the first page. If you quote someone, keep it brief and mention their names in the conversation (e.g., "As Bill McKibben said...") rather than parenthetically, as you would in a research paper.

All assignments will have a file title in the form of Lastnames_ClimatePaper_OSPP.docx. Please submit one copy per team.

Future Ocean Talk

The goals of this assignment are (1) to anticipate future human interactions with the world's oceans from the perspectives of marine and climate scientists, and (2) to identify these interactions as problems requiring policy and management decisions. Teams will identify specific problems—current and projected—in coastal environments and suggest pathways to resolving or mitigating these problems. Environment types include but are not limited to estuaries, coastal wetlands, beaches and dunes, seagrass meadows, salt marshes, intertidal zones, and harbors. Examples of “human interactions” include but are not limited to energy production, foodways, biodiversity, land and sea tenure, commercial and infrastructural development, and storm protection.

Projects will focus on Aotearoa New Zealand, although teams are encouraged to provide a general introduction before turning to ANZ-specific data.

Each team will present their results to the class in ways that are informative and interactive. They will provide pathways to solutions based on available scientific and social-scientific data and effective governance strategies.

The project rubric is as follows:

- Identify and anticipate issues relating to a specified coastal environment type. Research and present relevant supporting data.
- Offer ideas for management and policy solutions, merging with or contrasting with existing policy where possible.
- Deliver a presentation to the class, 15 to 20 minutes in length, with equal participation among teammates. PowerPoint is strongly encouraged, but interact with your audience in other ways as well.

This assignment is due on the day of presentation.

In-Class Participation

For this course we will meet twice a week in the SEA classroom. My goal is to make the most of our time in this shared space by having conversations about the human-climate connection and how science and policy can benefit from our understanding of this connection. There are two things we can all do to assure success. The first is to complete the assigned readings, podcasts, and videos before coming to class. The second is to feel empowered to express your thoughts on the topics under discussion. We want to hear every voice, which is why Class Participation is fully 20% of the final course grade.

Please come talk to me if you anticipate a high level of discomfort with speaking in class, or if you feel that you are not being heard.

Student Hours:

I will let you know during every class meeting when I will be in my office. I will happily provide individual or team assistance by appointment. There is no issue too large or too small. I am here to discuss anything with you. Except golf. I know nothing about golf.

Important note: We've all needed help with something at some point in our lives. If you find yourself having difficulty with the assigned readings, lectures, or class activities, please don't hesitate to contact me.

Other Very Important Stuff:

The papers that you submit in this course are expected to be your *original work*. You must take care to distinguish your own ideas and knowledge from wording or substantive information that you derive from one of your sources. The term "sources" includes not only published primary and secondary material, but also information and opinions gained directly from other people and text that you cut and paste from any site on the Internet.

Using internet sources: As you browse websites, assess their usefulness very critically. Who posted the information and why? Can you trust them to be correct? Authoritative? Unbiased? Your annotation should include the name of the author or organization originating any material that you reference. If you can't identify the source, don't use it!

Inclusivity and Classroom Culture:

Our SEA community embraces diversity of age, background, beliefs, ethnicity, gender, gender identity, gender expression, national origin, religious affiliation, sexual orientation, and other visible and nonvisible categories. We expect each one of you (and you should expect the same from us) to contribute to a respectful, welcoming, and inclusive environment. If you feel that you are not being welcomed, included, or accepted here, please reach out to one of your teachers or one of the deans at SEA to share your concern.

Topic	Readings/Assignments Due
Week 1 (Woods Hole campus)	
<p>I. The character of coasts</p> <p>Thu: Course preview Lecture: Indigenous Aotearoa - a brief introduction</p>	<p>Read for Tue of Week 2: Hewitt et al 2022. Barriers to coastal planning in Aotearoa New Zealand.</p> <p>Recommended: Freitas et al 2022. Coastal studies and society.</p> <p>Begin readings for Weeks 2 and 3.</p>
Week 2	

<p>Tue: Lecture: The character of coasts</p> <p>Thu: Discussion: Food sovereignty in coastal communities</p>	<p>Listen and Watch for Thu: Happen Films 2021. Building Indigenous Food Sovereignty with the Hua Parakore Organic Framework. Link</p> <p>GRAVY podcast. Reclaiming Native Ground. February 9, 2017. Link</p> <p>Gastropod Podcast. A Tale to Warm the Cockles of Your Heart. April 7, 2020. Link</p>
<p>Week 3</p>	
<p>Tue: Lecture: Dunes - Sea, Sand, People</p> <p>Thu: Visit to South Cape Beach State Park salt marshes</p>	<p>Read for Tue: Freitas 2021. Dune(s): Fiction, history, and science on the Oregon coast.</p> <p>Sampath et al 2023. Case study of the Manawatū-Whanganui dune field, New Zealand.</p> <p>Freitas et al 2018. Traditional ecological knowledge as a contribution to climate change mitigation and adaptation.</p> <p>Read for Thu: Bertness 1992. The ecology of a New England salt marsh.</p>
<p>Week 4</p>	
<p>2. Policy and polycentricity</p> <p>Tue: Lecture: From policy to polycentricity Exercise: Wicked problems</p> <p>Thu: Exercise: ANZ climate governance</p>	<p>Read for Thu: Ministry for the Environment (NZ) 2022. <i>Draft national adaptation plan</i> (read pp. 6-24).</p> <p><i>The Ngā Rauru Kaitahi Climate Change Strategy</i> 2021 (read pp. 1-16). Link</p> <p>Dorsch and Flachsland 2017. A polycentric approach (read pp. 50-59).</p>
<p>Week 5</p>	

<p>3. Confronting complexity</p> <p>Tue: Lecture: humans, coasts, systems Exercise: Deconstructing complexity</p> <p>Thu: Visit to Waquoit Bay National Estuarine Research Reserve</p>	<p>Read for Tue: Spencer et al 2023. Coastal futures. McNamara et al 2023. Human-coastal coupled systems.</p> <p>Recommended: Bonan and Doney 2018. Climate, ecosystems, and planetary futures.</p>
<p>Week 6</p>	
<p>Tue: “Future Coasts” team presentations.</p> <p>Thu: No class. EC video presentations.</p>	<p>Watch: NIWA. Future Coasts Aotearoa. Link</p>
<p>Weeks 7-12 (at sea)</p>	
<p>Discussions by watch groups:</p> <p>The blue economy and blue innovation</p> <p>Thinking (and feeling) climate futures</p>	<p>Readings: UNESCO 2021. Custodians of the globe’s blue carbon assets.</p> <p>Rout et al 2024. Indigenising the blue economy in Aotearoa New Zealand.</p> <p>Buck 2015. A charming Anthropocene.</p> <p>Solnit 2016. Hope is an embrace of the unknown.</p>