

Navigating Coastal Decision-Making: Using Shellfish Aquaculture as a Model for Socio-Ecological Knowledge Development (2016-4)

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“He was a bold man that first ate an oyster.”—John Swift, Irish essayist, novelist, satirist

The first to eat an oyster might have been bold, but they were most certainly in good company. The “lowly” oyster plays an important role in coastal ecosystems from both an ecological and social perspective. As an ecosystem engineer, oysters filter water while providing three-dimensional habitat for myriad species. Globally, the commercial impacts of oysters are noteworthy, being the third most commonly produced shellfish aquaculture species; in the US, they are an important component of coastal economies with production values growing from \$89M in 2008 to over \$157M in 2013 (NMFS, 2015). This case uses the challenges of siting an oyster aquaculture facility to expose students to the range of ecosystem processes and stakeholder interests at play in coastal areas, while also providing a sense of policy and management decision-making. Through concept mapping, stakeholder assessments, and mock negotiation, students will explore oyster aquaculture as a complex socio-ecological system that is indicative of many coastal systems. Students will also explore how natural and social sciences intersect with policy as we are reminded by marine ecologist and former NOAA Administrator Dr. Jane Lubchenco that “the purpose of science is to inform policy, not dictate it.” This case is designed to be used over approximately six hours (in 1.5 hour classes) in an undergraduate level course. The initial design was for first-year Marine Ecology students at a community college. It can be used in policy, social or natural science focused class settings. Options are also included to modify the modules for length, content, and level.

Resource File:

-  [coastaldecisionmaking_teaching_notes_feb2017.pdf](#) [1]
-  [coastaldecisionmaking_studenthandouts.pdf](#) [2]
-  [coastaldecisionmaking_memorubrics.pdf](#) [3]
-  [coastal_decisionmaking_public_access_doc.pdf](#) [4]
-  [coastal_decisionmaking_instructor_slides.pdf](#) [5]

Estimated time frame:

Multiple class periods

SES learning goals:

- Understand the structure and behavior of socio-environmental systems
- Co-develop research questions and conceptual models in inter- or trans-disciplinary teams
- Find, analyze, and synthesize existing data, concepts, or methods

Has this been tested in the class room:

Yes

Does this case have an answer key:

No

Source URL:

<https://www.sesync.org/navigating-coastal-decision-making-using-shellfish-aquaculture-as-a-model-for-socio-ecological>

Links

[1]

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[4]

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[5]

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