

Sustainable Seafood Certification Labels - The Case For and Against Menhaden

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Author's note: We would love to hear your feedback, particularly if you attempted to use this lesson plan in your class. Please email kdgorospe@gmail.com and humphries@uri.edu with any comments or suggestions.

Summary

Global fisheries and marine ecosystems are under increasing pressure to supply the global seafood demand. Sustainable seafood certification labels are one way of empowering consumers to understand the wider effects of fisheries harvest and to make informed choices when purchasing seafood. This lesson plan introduces students to a prominent sustainable seafood certification program, the Marine Stewardship Council (MSC). Before seafood products can be labelled as 'certified sustainable seafood', they must meet MSC's standards for sustainability and be examined for their: (i) biological sustainability, (ii) environmental impact, and (iii) management effectiveness. These standards serve as a framework for guiding students through socio-environmental synthesis. Through this lesson plan, students are: (i) introduced to different definitions of the term 'sustainable', including the definition specifically used by the MSC, and (ii) tasked with reviewing science-based evidence used in assessing the sustainability of a particular fishery. Specifically, students are guided through a role-playing exercise in which they imagine themselves to be auditors tasked with examining pieces of evidence related to the recent certification of the U.S. Atlantic menhaden (*Brevoortia tyrannus*) fishery. This particular fishery is a reduction fishery, meaning that menhaden are not directly consumed as seafood, but rather are processed into fish meal, fish solubles, and fish oil. Products that are made from U.S. Atlantic menhaden can now don the label of "certified sustainable seafood" but not without controversy.

Teaching Methods: Role-playing, small-group learning, jig-saw

Length of Class: 75 minutes



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Target Audience: This lesson plan was developed for an introductory fisheries class as a synthesis exercise integrated towards the end of the semester-long curriculum. This case study could also be adapted for use in a general ecology or natural resource management class, provided that additional background information on the fundamentals of fisheries management is given to the students. In these types of non-fisheries specific settings, instructors should use the provided answer key as a guide for the types of supplemental information that may be needed to prepare their students for this lesson.

Socio-Environmental Synthesis Learning Goals: This lesson plan uses sustainable seafood certification labeling as a case study for thinking about socio-environmental synthesis.

By digging deeper into the specifics of how sustainability is defined, students will learn to:

1. Understand others' perspectives and values
2. Build consensus
3. Develop their communication skills
4. Describe systems
5. Recognize institutional structure and constraints

Student Learning Objectives:

1. Identify and describe alternative definitions for the term sustainability
2. Evaluate and interpret ecological and management policy information as it relates to evidence for sustainability
3. Describe the Marine Stewardship Council's certification process and generate solutions to flaws within the process

Introduction and Background

This lesson plan guides students through a case study of a prominent sustainable seafood certification program, the Marine Stewardship Council (MSC), to demonstrate the importance of deepening our understanding of the process by which fisheries obtain certification. The MSC is the largest third-party seafood certification organization in the world. A total of 338 fisheries have been certified, with a catch of more than 10 million tonnes across 141 different species. This represents 13% of the global catch with a market value of more than \$8 billion.

Fisheries that apply to the MSC sustainable seafood certification label must demonstrate that they meet the organization's three core principles of sustainability: (1) there is no overfishing or depletion, or if there is depletion there must be demonstrated recovery; (2) fishing operations should allow for the maintenance of the structure, productivity, function, and diversity of the ecosystem, including its habitat and associated species; and (3) there is an effective management system in place that respects local, national, and international laws and standards.



For this case study we focus on the recent certification of the Omega Protein purse seine Atlantic menhaden fishery. A fishery, as defined by the MSC, is any target stock (e.g., Atlantic menhaden) combined with a specific fishing method and gear type (e.g., purse seine) and fishing fleet (e.g., Omega Protein Corporation). Atlantic menhaden, *Brevoortia tyrannus*, is a highly migratory species that occupies estuarine and coastal marine waters from northern Florida to Nova Scotia. Atlantic menhaden plays an important ecological role in the marine food web, serving as prey for many fish, bird, and mammalian species along the Atlantic Coast. In particular, they are important prey for striped bass, weakfish, and bluefish, which themselves are key species in many recreational fisheries. Commercially, Atlantic menhaden are a reduction fishery, meaning they are processed into fish meal, fish solubles, and fish oil. Fish meal and fish solubles are used as fish feed for growing fish in the aquaculture industry, while fish oil is used as a dietary supplement taken by people wanting to increase their intake of omega fatty acids.

The MSC certification label, as with many other food and natural resource certification labels, however, is not without its limitations. For example, through the MSC's certification process fisheries are often granted 'conditional' certifications, giving companies several years to address deficiencies, implement changes in their operations, or conduct studies to understand their effects on the environment, while still benefiting from the 'sustainable' certification label. Furthermore, the MSC does not conduct audits themselves. Instead, fisheries contract out the certification process to third-party auditors, potentially leading to inconsistencies among auditors and possibly creating conflicts of interest between the fishery paying for certification and the auditor conducting the investigation. In other words, the ability for fisheries to 'shop around' for an auditing firm may create a competitive landscape that incentivizes auditors to recommend fisheries for certification. Other critics point to inequities in the process; most MSC-certified fisheries are concentrated in developed countries, as many of the most vulnerable fisheries (e.g., small-scale fisheries in developing countries with limited resources for management) lack the required economic capital for going through the certification process.

Aside from simply recognizing fisheries with good practices, the MSC asserts that its consumer-driven model for sustainability pushes fisheries to improve their operations and management in order to achieve (re)-certification (certification lasts for five years, with annual audits occurring throughout the five-year period). By allowing fisheries to gain wider and/or more favorable access to markets and consumers, the MSC certification label provides an economic incentive for fisheries to change their practices. In other words, we do not believe that the certification process is devoid of merit.



Sustainable certification labels have the potential to push fisheries towards more sustainable practices. Overall, this lesson plan is not meant to demonize these efforts, but rather to encourage students to think critically about how sustainable certification and consumer empowerment can help to address complex socio-environmental issues as well as the limitations of these approaches.

Classroom Management:

Before Class:

Students will be instructed to visit the Marine Stewardship Council (MSC) website (www.msc.org) to investigate how the MSC defines sustainability. They will also be provided with a list of other organizations that have their own definitions of the term. Their assignment will be:

1. Describe the MSC's 3-part definition of sustainability
2. Identify an alternative definition from a different organization and explain how the definitions are different.

In Class:

1. Discussion of homework assignment (10 minutes): Assessment of this activity will occur through the student's individual, written homework assignment responses.
 - 1.1. Call on 3 volunteers to give each part of the MSC's 3-part definition of sustainability and explain what each one means in layman's terms.
 - 1.2. Call on 2-3 volunteers to offer the alternative definitions of sustainability that they found, the organization it came from, and explain how this definition differs from the MSC's.
2. Introduce the lesson using the following hook (5 minutes)
(Presentation Slides: slide 2 to 11)
 - 2.1. Set the scene from the perspective of a consumer (e.g., in a grocery store, at McDonalds) trying to make responsible seafood purchasing decisions
 - 2.2. Introduce students to the Marine Stewardship Council & the blue fish ecolabel
 - 2.3. Give students news of Atlantic menhaden (which is a big fishery in Rhode Island) recently being certified
 - 2.4. Cliff hanger: but there are objections being raised
 - 2.5. Leads into activity



3. Omega Protein Menhaden audit (35 minutes): This is a role-playing activity that is structured in a jig-saw format. In small groups, the students will act as auditing firms and go through materials pertaining to the Omega Protein menhaden fishery to determine whether the fishery should be recommended for the MSC certified sustainable label, or not.
 - 3.1. Students will be divided into groups of 6 (3 pairs of 2). Within groups, each student pair will be designated as an expert in 1 of the 3 'core principles' of the MSC's definition of sustainability (their 'Fisheries Standard' for sustainability certification). Timing: 2 minutes
 - 3.2. Each expert pair will be given an excerpt from the actual Omega Protein Menhaden auditing firm (SAI Global) report (Student Handouts for Principle 1, 2, or 3). Once students are assigned their role, the instructor will go through Presentation Slides: slide 12 to 20. Students should be encouraged to take notes, particular for the subject area that they will be auditing. Timing: 8 minutes
 - 3.3. Students are then asked to use the information on their handouts to decide (Yes/No) if the fishery is meeting their 'core principle'. Students should record at least one strength of the fishery in terms of meeting their core principle and one area of weakness. Based on weighing these strengths and weaknesses, each expert pair will decide (Yes/No) if the fishery is meeting their 'core principle'. Timing: 15 minutes
 - 3.4. 'Core principle' expert pairs will then group back together with their full 6-person auditing firm and discuss the fishery's status on each of the 3 principles, and come to a conclusion (Yes/No) on whether or not to recommend the Omega Protein Menhaden fishery for the MSC certification. In order to be granted the MSC certification, all three principles must be satisfactory. Timing: 10 minutes
4. Report out from audit activity (15 minutes): Each auditing firm (student group) will report out to the class on their decisions and we will hold an unstructured class discussion on the results.
5. Conclusion (5 minutes): Instructor reveals the actual results from the auditing company (Presentation Slides: slide 21). Class ends with the instructor presenting the certification process, as well as some potential strengths and weaknesses of the certification process.



Assessment: The table below demonstrates how this lesson plan’s socio-environmental learning goals, student learning objectives, and activities are aligned. The final row in the table is included as a possible extension or modification to the lesson plan. Further details on this can be found in the next section.

S-E Learning Goal	Student Learning Objective	Activity / Assessment
1. Ability to understand others' perspectives and values	Students will be able to identify and describe alternative definitions for the term sustainability	Homework: Describe and compare disciplinary definitions of sustainability to MSC definition
1. Consensus-building 2. Communication skills 3. Describing systems	Evaluate and interpret ecological and management policy information	Activity: Analyze ecological and management policy information to determine whether the fishery meets sustainability standards
1. Recognize institutional structure and constraints	Describe the certification process and generate solutions to flaws within the process	Optional extension to lesson plan: Identify flaws in the certification process and develop potential solutions

Suggested Modifications:

The Omega Protein menhaden audit is intended to make the lesson material more relatable to our students, who are currently based in, and in many cases grew up in Rhode Island or the southeastern New England area. To date, the MSC has certified 338 fisheries, and many of the corresponding final reports for these are available on the MSC website. Instructors are encouraged to peruse the MSC website to see if there are other fisheries that could potentially be more relevant to their students.

There is also an opportunity to extend this lesson plan into a second day. It is very likely that different groups from the role-playing activity arrived at different conclusions regarding the menhaden certification. This is an issue, especially if sustainable seafood certification is meant to be seen as a consistent, equitable standard. A possible extension to this lesson plan would be to take the final slide from the Presentation Slides file and create an activity focusing on the certification process. For example, students could be given a diagram of the certification process, from which they would be asked to produce a problem and solution tree, suggesting potential improvements.



Because this lesson plan is not yet classroom tested, our notes on timing should be seen as suggestions and we encourage those implementing this lesson plan to use their best judgement for determining timing intervals for each classroom component.

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References:

Marine Stewardship Council. 2018. *Seafood for future generations: The MSC Annual Report 2017-18*. Retrieved from <https://www.msc.org/about-the-msc/reports-and-brochures>

Dignan, S., Mateo I., Allain, R. J. (2019). Marine Stewardship Council Full Assessment Final Report, For: Omega Protein Corporation U.S. Atlantic menhaden purse seine (Report No. MSC030). Retrieved from: <https://fisheries.msc.org/en/fisheries/omega-protein-corporation-u.s.-atlantic-menhaden-purse-seine/@@assessments>

