



NOAA FISHERIES

Grade Level
8-12

Materials

- Computers with Internet access
- Venn Diagram handout (see attached)
- Sheets of 8 ½" by 11" cardstock (one sheet per pair of students)
- Colored pencils or markers

Audio/Visual Materials

- Computers (one for each pair of students)

Teaching Time

One to two 45-minute class periods

Seating Arrangement

Pairs with access to computers

Key Words

- Sustainability
- Ecolabel
- Seafood guide

Seafood: To Buy or Not to Buy

For use with Fish Watch at www.fishwatch.gov



Focus

- Choosing sustainable seafood

Focus Questions

- How do seafood guides and ecolabels influence consumer seafood choices?

Learning Objectives

- Understand how to use ecolabels and seafood guides to make informed consumer choices about seafood.

Background Information

In this lesson, students will learn about seafood guides and eco-labels. “Sustainable seafood is a hot topic these days. “Sustainability” is based on a simple principle: meeting today’s needs without compromising the ability of future generations to meet their needs; for example, using a resource but leaving some for the future. In terms of seafood, this means catching or farming seafood responsibly, with consideration for the long-term health of the environment and the livelihoods of the people that depend upon the environment. For example, U.S. seafood is wild-caught and farm-raised under

National Science Education Standards

Grades 9-12

Content Standard C: Life Science

- Interdependence of organisms/ecosystems
- Matter, energy and organization in living systems

Content Standard F: Science in Social and Personal Perspectives

- Environmental quality

Ocean Literacy Essential Principles

Essential Principle 6

The ocean and humans are inextricably connected.

Fundamental Concept b

From the ocean we get foods, medicines, and mineral and energy resources. In addition, it provides jobs, supports our nation's economy, serves as a highway for transportation of goods and people, and plays a role in national security.

Fundamental Concept e

Humans affect the ocean in a variety of ways. Laws, regulations and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (point source, non-point source, and noise pollution) and physical modifications (changes to beaches, shores and rivers). In addition, humans have removed most of the large vertebrates from the ocean.

Fundamental Concept g

Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.

strict regulations that work to keep the environment healthy, the fish populations thriving, and our seafood industry on the job.”

(Quote from www.fishwatch.gov)

A number of organizations have created seafood guides to assist consumers and buyers with their “sustainable seafood” choices. Seafood guides rate seafood, typically based on environmental and biological criteria of species, fisheries, or aquaculture practices. Some guides include health concerns regarding mercury or other contaminants. The ratings found in these guides generally reflect an organization’s policy stance regarding these issues, and as a result, the guides sometimes contradict each other. They also vary in their structure and how they categorize seafood. For example, one guide might rate yellowfin tuna as a whole while another might break it down by country of origin and fishing method.

While shopping for seafood, you might also notice that some seafood is displayed with an ecolabel. An ecolabel is a “seal of approval” awarded to fisheries and aquaculture operations deemed sustainable and responsible by third-party certification bodies. The certification process typically involves an in-depth assessment of the operation of the fishery or farm, how it’s regulated, and its impact on the environment. If the fishery or farm meets the ecolabel’s standards, it is certified. Another key element of ecolabels is chain of custody: the measures that guarantee the product bearing the ecolabel really came from the certified fishery or farm. Without chain of custody, the credibility of the label could be undermined.

Ecolabels are intended to function as a market-based incentive to promote more environmentally-friendly fisheries and aquaculture operations. As concerned consumers shift their demand to certified products, market prices for these products will increase, encouraging fisheries and aquaculture operations to adopt more sustainable and responsible practices. However, the certification process can require a large investment of time and money - resources that some fisheries and aquaculture operations cannot afford.

Source: www.fishwatch.gov

Learning Procedure

1. This lesson should be taught after the concept of sustainability has been covered through other lessons. Ask the class “Now that we have learned about sustainability and the importance of sustainable fishing, what you, as a consumer, can do to promote and support this concept? How can others be educated about the importance of sustainability?” Allow students to share their thoughts and ideas.
2. After the discussion, have students go to the fishwatch.gov website www.fishwatch.gov/buying_seafood/choosing_sustainable.htm to learn about seafood guides and ecolabels and explain that these are two strategies to help consumers who wish to purchase and eat sustainable seafood. Information can also be found above in the background information section.

2. Once students have read the information, ask them to share their thoughts on why these systems will help promote sustainability.
3. Refer students to seagrant.gso.uri.edu/sustainable_seafood/guides.html to see examples of seafood guides. Have each pair of students choose two seafood guides to explore and compare. Students should try to compare two guides from the same region, if possible.
4. Using a Venn diagram, have students compare the two guides – how are they similar? How are they different? How do they account for any differences (e.g., guides may categorize the same fish species differently)?
5. Have them repeat the steps in #5, but they should now compare the seafood guides to www.fishwatch.org. Students should understand that guides and wallet cards may be helpful, but they may be outdated due to rapid changes or may only address one aspect of an issue.
6. Based on what students have learned and discovered from the seafood guides, have them create a simple one- page menu for a seafood restaurant incorporating the fish they believe to be the best to consume for their region. The menu should include at least two appetizers and three entrees. Students should list the items and provide a brief description of the meal using their knowledge of that fish. Students can refer to the fishwatch.gov site or other websites for more information on the fish, as well as their nutritional value. Students will work in pairs for this exercise. (Students are encouraged to use creativity for this activity. They can choose a restaurant name, design a cover, etc. depending on what time allows). There are recipes under the Eating Seafood tab on the main FishWatch web site, and on most of the individual fish species pages under the Seafood tab.
7. When their menus are complete, allow groups to share and explain why they chose certain fish for their menu.
8. As a reflection, encourage students to think about and discuss ways in which to make this information even more accessible to consumers. Students can write their individual responses to steps 8 and 9 in their journals.

The Bridge Connection

www.vims.edu/bridge

Under Ocean Science Topics, click on Human Activities, then Environmental Issues, then Policy, Sustainability, or Conservation.

The “Me” Connection

Have students write a brief essay on how they could share their knowledge of choosing sustainable seafood with their families.

Connections to Other Subjects

English/Language Arts/Social Studies

Evaluation

The menus, the presentation defending the choices for their menu, and their journal entries can serve as an assessment for students' understanding of seafood guides and sustainability.

Extensions

1. Students can expand on their menu adding desserts, a cover, restaurant title, etc.
2. Students can create a Public Service Announcement (or a script for one if they do not have access to the necessary technology) about sustainable seafood choices.
3. Students can design their own ecolabel for a species of their choice.

Additional Resources

NOAA Fisheries FishWatch
www.fishwatch.gov

NOAA Fisheries Service
www.nmfs.noaa.gov

NOAA Fisheries – Office of Sustainable Fisheries
www.nmfs.noaa.gov/sfa/sfweb

NOAA Fisheries Office of Science and Technology Stock Assessments
www.st.nmfs.noaa.gov/StockAssessment/StockAssessment.html

Venn Diagram:



Seafood Guide #1

Seafood Guide #2



