



**Aquarium Webcam Resource Kit**  
**Lesson 3 “Kelp Forest Conservation”**  
**6th-8th Grade**

**Next Generation Science Standards:**

- **MS-LS2-1** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- **MS-LS2-2** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- **MS-LS2-3** Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- **MS-LS1-5** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

**Supplies:**

- Kelp Forest Conservation video
- Food Web Cards (half sheets to print and cut) & tape
- Computer & projector to show Blue Cavern Webcam:  
<http://www.aquariumofpacific.org/exhibits/webcams>
- Kelp Forest Conservation Worksheet
- Sea Otter Challenge Game:  
[http://www.aquariumofpacific.org/exhibits/northern\\_pacific\\_gallery/otters/sea\\_otter\\_game](http://www.aquariumofpacific.org/exhibits/northern_pacific_gallery/otters/sea_otter_game)

**Lesson Activities:**

**Step 1: Food Web Activity**

- Have students form small groups.
- Pass out one food web card to each group.
- Using a blank white board or chalk board, start the game by placing the sun card at the top.
- Have students discuss where their card would fit in the food web. Each card will have a picture of a kelp forest organism and name.
- Groups will place their cards on the board and draw lines to indicate prey or predator.
- When all of the groups have gone up, ask the whole group if they would like to make any changes or additions.

- Go over some fun facts, or pass them out to student groups to read to the class.

## **Step 2: Watch “Kelp Forest Conservation” Video**

### Pre-video Prompts

- Are we part of the kelp forest food web, if so how?
- Do people use kelp?

### Post-video Prompts

- How do animals use the kelp forest?
  - Nursery
  - Hunting grounds
  - Shelter
- What types of organisms live in the kelp forest?
  - From plankton to sea lions, there are hundreds of different types of organisms that call the kelp forest home.
- After watching the video, are we part of the food web?
  - People are consumers, eating both the kelp and animals from the kelp forest.
  - The canopy layer of kelp can be harvested sustainably because of its fast growth rate. Kelp helps bind ingredients together and products such ice cream, toothpaste, cosmetics, and medicines.

## **Step 3: Conservation & Worksheet**

- Discuss how students can help.
  - Storm drains are used to prevent flooding in our neighborhoods, but sometimes trash and chemicals from fertilizers, pesticides, and motor oil also travel down storm drains and into the ocean.
  - Trash and chemicals can affect the health of a kelp forest. Making sure you recycle, don’t have a leaky car, and reduce chemicals on your lawn to help our local ecosystems.
- Sea Otter Research
  - Sea otters are indicators of a healthy ecosystem. Research on sea otter populations and health can be conducted using different methods, including yearly surveys. US Geological Survey conducts these surveys with teams of scientists’ part of the Western Ecological Research Center.
  - Review the USCS Western Ecological Research Center webpage for opportunities to dive deeper.  
<http://www.werc.usgs.gov/ProjectSubWebPage.aspx?SubWebPageID=21&ProjectID=91>
    - Sea Otter Spotting Game
    - Podcast Interview with researcher Tim Tinker
    - Review sea otter survey data
- Complete the Kelp Forest Conservation worksheet.
- Use the Sea Otter Challenge Game as a class review.

**Additional Resources:**

- USGS Western Ecological Research Center: Sea Otter Ecology and Population Trends. Includes background information on current research in a downloadable PDF. <http://www.werc.usgs.gov/ProductDetails.aspx?ID=4328>