



LESSON 6

Bowie Seamount

Grades 4 to 7

Objectives

- Locate the Bowie Seamount on a map.
- Explain how salmon and rockfish are different.
- Read graphs and charts to gain information about rockfish.

Materials

Reference: *Bowie Seamount Pilot Marine Protected Area: An Ecosystem Overview Report* by R. Canessa, K. Conley and B. Smiley, 2003. Fisheries and Oceans Canada.

Reference: *Rockfishes of the Northeast Pacific* by Milton Love, Mary Yoklavich and Lyman Thorsteinson, 2002, University of California Press.

Video: *Bowie Seamount Video* by L. Yamanaka, 2003, Fisheries and Oceans Canada.

Poster: Bowie Seamount Marine Protected Area, 2003, Fisheries and Oceans Canada.

Posters: *British Columbia Rockfish, Common BC Groundfish*, Fisheries and Oceans Canada

Brochure: Bowie Seamount Area, 2003, Fisheries and Oceans Canada.

Promotional materials: Rockfish stickers and bookmarks, Fisheries and Oceans Canada.

Station 1: Simple puzzle of a lionfish (a tropical relative of rockfish); pictures of different rockfish species from reference books above

Concepts

- Seamounts are mountains under the sea.
- Many different species of animals lives on or visits seamounts. Rockfishes are one type of fish that live on seamounts.
- Conserving rockfish must be done in a different way from fish like salmon

because their life characteristics are very different.

- Rockfish eat different food when they are larvae than when they are adults.

Activities

1. Introduction

What is a seamount? See if you can guess what it is by the name.

A: A seamount is a mountain under the sea. The Bowie Seamount was created by a volcano that was thought to be above sea level during the last ice age. It was still volcanically active after the sea level rose and covered the summit.

Look at pictures of the Bowie Seamount.

Find out what students already know about rockfish. Have they ever seen one? Caught one? What did they notice about the fish? Find out if they saw the swim bladder.

2. Life at the Bowie Seamount

Watch the *Bowie Seamount Video*. Notice the diversity and abundance of life that scientists see.

Is it easy to count fish at the Bowie Seamount?

A: No, because there are so many Widow Rockfish that the scientist has a hard time keeping track of them.

Activity Stations

Set up the 6 activity stations. Divide the class into 6 groups and rotate through the stations.

Details of each Station are in the accompanying Worksheet for Lessons 6. The answers to the questions are in italics.

Conclusion

Go over the answers to the questions at the Activity Stations.



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Activity Station Worksheet
(Answers are in italics.)

Station 1. Rockfish Relatives

Put together the puzzle of a lionfish. Compare it to the pictures of rockfish.

Rockfish belong to the scorpionfish family. Lionfish are in the same family. Scorpionfish have spines with sacks of venom in them. Rockfish venom is not as potent as lionfish venom but a jab from their fin spines can cause a burning pain, swelling and even a fever.

Station 2. Rockfish Size and Predators

(Use the British Columbia Rockfish poster, Fisheries and Oceans Canada)

Look on the back of the rockfish poster. Which rockfish is the smallest? Largest?

Puget Sound Rockfish is up to 18 cm. The Yelloweye Rockfish is up to 100 cm.

Can you think of some predators of rockfish?

Lingcod are rockfish predators. They can grow to be up to 152 cm. They will even eat other lingcod. Another rockfish predator is the Giant Pacific Octopus. It can grow to be over 3 metres long!



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Activity Station Worksheet
(Answers are in italics.)

Station 3. Hard Rock Café

Menu for the opportunistic nearshore Rockfish

Entire menu not always available.

Herring

Sand lance

Crab

Shrimp

Squid

Rock Bottom Location. Rock Bottom Prices.

****No planktonic rockfish larvae (baby rockfish) allowed.****

Instead try our café near the surface for rockfish larvae 6 mm and up,
open January to May.

What does this menu tell you about rockfish?

Baby rockfish eat different food than adult rockfish and live close to the surface of the ocean. Adult nearshore rockfish live near the ocean bottom in rocky areas and eat whatever food is available. They are not picky eaters.



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Activity Station Worksheet
(Answers are in italics.)

Station 4. Salmon and Rockfish

Compare salmon and nearshore rockfish such as yelloweye, china, tiger and copper rockfish. How are they different from each other?

It is like comparing a race car and a van. The salmon is like the race car, able to move quickly and easily. The rockfish is like a van, not able to move as fast or easily.

Rockfish don't stray far from home – because of this, if everyone fished in the same area all the time, most of the rockfish could be caught. Salmon travel long distances from ocean feeding areas back to the streams where they were borne.

Rockfish do not mature until they are about 20 years old and some rockfish live to be over 100 years old! Salmon mature between 2 and 5 years and die after they spawn.

Rockfish are viviparous which means they bear live young. Salmon lay eggs in the streams where they were born.

Station 5. Where is the Bowie Seamount? What lives there?

(Use the map and Species Richness chart (p 22) from the Bowie Seamount Pilot Marine Protected Area publication by Fisheries and Oceans Canada.)

Look at the map and picture of the Bowie Seamount to see where it is and what it looks like.

It is located approximately 180 km west of Haida Gwaii. It is 24 by 55 km at the base but only as big as a large living room at the summit.

Look at the Species Richness Chart. Are there many different creatures that live on the Bowie Seamount?

There are over 158 different animals and seaweeds that make the Bowie Seamount their home.



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Activity Station Worksheet
(Answers are in italics.)

Station 6. Rockfish Swim Bladders and Age

What happens when a rockfish is caught and quickly brought to the surface?

The swim bladder can't adjust to the pressure change so the bladder is forced out of the rockfish's mouth, looking like a balloon. If the rockfish is released like this, it will not be able to get back down to the bottom of the ocean and will not live.

Look at the Yelloweye Rockfish Age Chart. What age were most of the yelloweye rockfish? How long can they live?

(The age chart is on page 24 of Bowie Seamount Pilot Marine Protected Area: An Ecosystem Overview Report, by R. Canessa, K. Conley and B. Smiley, 2003. Fisheries and Oceans Canada.)

Most are between 25 and 30 years old. They can live to be up to 118 years old.