



Ocean Exploration
and Research

Dive In!

Ocean Exploration Education Highlights April 2016

Welcome to the NOAA Ocean Explorer Education Highlights email. These monthly emails provide you with quick access to ocean exploration-focused, standards-based tips and tools to bring the excitement and science of ocean exploration into your classroom!



What's the Latest from NOAA Ocean Exploration for Your Classroom?

Glacier Bay National Park Expedition 2016

From March 17-30, 2016, a University of Maine-led team conducted the first-ever deepwater exploration of Glacier Bay National Park using both diver-based surveys and a remotely operated vehicle.



Several fish and sea urchins congregate around a large red tree coral. *Image courtesy of NOAA Alaska Fisheries Science Center and Deep Sea Coral Research and Technology Program.*

Read this [background essay](#) on the native and geological history of the region and the retreat of the glacier since the late 1700s that has uncovered the 65-mile long system of fjords, inlets and coves we see today. This essay also shares the exploration history of the region and its incredible value as a natural research laboratory.

View the full [Expedition Education Module](#), complete with standards-based lessons and theme pages on the [Arctic](#) and [Deep-sea Corals](#).



Standards-Based Lesson

[Glaciers to Corals](#) (Grades 6-8)

NGSS: MS-LS2-5

In this lesson students utilize three different documents to explore and discuss the biodiversity and ecosystem services in Glacier Bay National Park benthic ecosystems and how biodiversity and ecosystem services can be maintained within these systems.

Deep-water Exploration of Glacier Bay National Park 2016
Glaciers to Corals

Focus
Biodiversity in Glacier Bay National Park benthic ecosystems

Grade Level
6-8 (Life Science)

Focus Question
What factors contribute to biodiversity in Glacier Bay National Park benthic ecosystems, and how can biodiversity and ecosystem services be maintained within these systems?

Learning Objectives

- Students will identify and explain factors that contribute to biodiversity in Glacier Bay National Park benthic ecosystems.
- Students will evaluate design solutions for maintaining biodiversity and ecosystem services in Glacier Bay National Park benthic ecosystems.

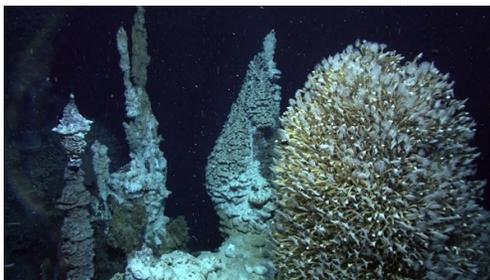
Materials

- Copies of Student Resource: *The Ocean - Glacier Bay National Park and Preserve, Deep Sea Corals: Out of sight but no longer out of mind*, and *Glacier Bay Wilderness Character Narrative*, see Learning Procedure, Step 1
- Optional: Paper, rulers, pencils or markers for constructing Sierpinski triangles (see Learning Procedure, Step 1)
- Optional: Materials for demonstrating branching corals' effects on currents—Stream table or large pan or tray (at least 30 cm wide x 60 cm long x 8 cm deep); modeling

Note: All lessons are written to support the [NGSS](#) and the [Ocean Literacy Essential Principles and Fundamental Concepts](#).



Upcoming Expeditions!



A sulfide chimney is colonized by a thick coating of vent barnacles. *Image courtesy of MARUM, University of Bremen and NOAA-Pacific Marine Environmental Laboratory.*

2016 Deepwater Exploration of the Marianas

April 20-July 10, 2016, the NOAA Ship *Okeanos Explorer* will [explore the diversity and distribution of deepwater habitats](#) in the Commonwealth of the Northern Marianas Islands and [Marianas Trench Marine National](#)

[Monument](#). Scientists will focus on hydrothermal vent sites, mud volcanoes, subduction zones, and the organisms found in these areas.

For more information on this exciting expedition, join us for a [Webinar for Educators](#) on April 12!



Image of the Month



Image courtesy of NOAA Office of Ocean Exploration and Research, Hohonu Moana 2016.

During the first dive of the [2016 Hohonu Moana expedition](#) to explore on the northeast side of Necker Island in the Pacific Ocean, the ROV *Deep*

Discoverer encountered this octopus, which confused several of our shore-based scientists who have never seen anything like it. Upon further review, this [ghostlike octopod](#) is almost certainly an undescribed species and may not belong to any yet-described genus!

Read the [mission log](#) for a description of this amazing creature by NOAA cephalopod specialist, Dr. Mike Vecchione, and watch the octopus in its natural habitat in this [short video](#).





Teacher at Sea, Mary Cook gets up-close with a nudibranch during the Glacier Bay National Park Expedition. *Image courtesy of NOAA Teacher at Sea.*

Featured Education Resources

[Mary Cook's At-Sea Blog](#)

Glacier Bay National Park Expedition
2016

Meet NOAA Teacher at Sea, Mary Cook, a high school teacher in Scammon Bay, Alaska. Mary just participated in NOAA OER's Glacier Bay National Park expedition. Mary teaches in a Native Yupik Alaskan village situated on the vast tundra bordering the Askinuk Mountains and the Bering Sea and looks forward to sharing her experience exploring the deep waters of the Alaska fjords with her students.



Educators learn about hydrothermal vent chemistry during a professional development workshop in Duluth, Minnesota.

Upcoming Education Professional Development

All spring 2016 [professional development opportunities](#) are now listed on our website. Join us for full-day onsite professional development at an Aquarium or Science Center near you!



We hope that these Exploration Education Highlights will help you focus more of your classroom teaching and learning on the amazing discoveries taking place right here, right now, on our own Planet Ocean! Onward and downward!

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