



## Ocean Exploration Education Highlights

June 2017

Welcome to the NOAA Ocean Explorer Education Highlights newsletter. This monthly newsletter provides 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?



The Octonauts join NOAA Ship *Okeanos Explorer* for deep-sea exploration. Image courtesy of NOAA Office of Ocean Exploration and Research.



A teacher makes cut-outs from the Octonauts deep-sea creature chart. Photograph by Emily Narrow, GFOE.

#### Octonauts Corner: Resources for Younger Students

NOAA's Office of Ocean Exploration and Research (OER) launched the [Octonauts Corner webpage](#) on [oceanexplorer.noaa.gov](#). On this webpage visitors can download fun educational materials such as Creature Cards, a [deep-sea creature chart](#), and view related videos from NOAA ship *Okeanos Explorer* expeditions. More content will be

added as it becomes available. These materials are especially applicable for younger learners ages 3 and up.

The [Octonauts](#) are a crew of eight adorable animals who explore the ocean in search of adventure. From their undersea "Octopod" base, the eight talented critters pursue their mission to explore new underwater worlds, rescue amazing sea creatures, and protect the ocean.

### Standards-based Lesson

#### Return to the Moat of Death (Grades 6-8)

NOAA Ship *Okeanos Explorer* 2017 expeditions are helping to investigate and map vulnerable marine habitats, as well as deep-sea geologic features in the Central Pacific such as the young, active volcano named Vaillulu'u off American Samoa that is undergoing rapid growth.

In this newly developed [lesson](#), students will explain how geological, biological and oceanographic processes are involved with habitats observed on Vaillulu'u seamount, and will discuss the time and spatial scales over which these processes operate.

For more educational materials on seamounts, including lessons, essays and multimedia resources, visit our [Seamounts Theme Page](#).

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

**2017 American Samoa Expedition**  
**Return to the Moat of Death**

**Focus:** The Vaillulu'u Seamount

**Grade Level:** 6-8 (Earth Science)

**Focus Questions:** What geological, biological and oceanographic processes have resulted in habitats observed on Vaillulu'u Seamount?

**Learning Objective:** Students will explain how geological, biological and oceanographic processes are involved with habitats observed on Vaillulu'u seamount, and will discuss the time and spatial scales over which these processes operate.

**Materials:** Depends upon strategies offered for student educational products (see Learning Procedure) the 10 students may be required to provide their own materials.

**Audio-Visual Materials:** (Optional) Equipment to show images or video from 2017 American Samoa expedition website <http://oceanexplorer.noaa.gov/keanos/explorations/ex1702/welcome.html>

**Teaching Time:** Two or three 45-minute class periods

**Seating Arrangement:** Groups of two to four students

**Maximum Number of Students:** 30

**Key Words:** Vaillulu'u, American Samoa, Volcano, Seamount, Moat of Death

**Lesson plan**

### Image of the Month

#### Human History on the Seafloor

From May 2 to May 16, explorers on the [Exploring the Sunken Heritage of Midway Atoll Expedition](#) searched for and explored sunken aircraft associated with the Battle of Midway. This year marks the [75th anniversary](#) of the battle, and this project aims to raise awareness and honor the legacy of the brave men who helped to turn the tide in the Pacific at this time.

Much of the famous air battle took place near the atoll, and the remnants of dozens of historic aircraft may rest beneath the surface. Explorations like this help us better understand and interpret the human stories associated with this significant battle, and add an important maritime heritage component to our understanding of the broader history of World War II in the Pacific.

For more information, including a video, visit this [site](#). Click [here](#)

for an educator webinar on this expedition.



Brian Hauk takes notes on a recently discovered potential whaling anchor. Underwater debris like this, found using magnetometer surveys, is scattered throughout the lagoon at Midway, reminding divers of the human history that has affected this place: not only was Midway strategically important for both the United States and Japan to hold and fight over during World War II, but it was just as important to whaling fleets and other mariners searching for resources or transiting the Pacific a century prior. Image courtesy of Brett Seymour, *Exploring the Sunken Heritage of Midway Atoll expedition*.



The women behind the highlight reels, Caitlin Bailey, Annie White, and Emily Narrow, onboard NOAA Ship *Okeanos Explorer*. Image courtesy of the NOAA Office of Ocean Exploration and Research, *Discovering the Deep: Exploring Remote Pacific MPAs*.

#### The Women Behind the Highlight Reels

You might not know these women, but if you have seen the videos of the [cosmic jellyfish](#), swimming [dumbo octopus](#), or the deep water [siphonophore](#) at depth, you know their work. They are famous for bringing the amazing vibrant images of the deep sea to life to you at home and picking songs that evoke emotions and match the clips perfectly.

The women behind the reels are Annie White, Caitlin Bailey, and Emily Narrow, all working for the [Global Foundation for Ocean Exploration](#). During the [Discovering the Deep: Exploring Remote Pacific Marine Protected Areas](#) expedition we spoke to these three videographers about their work, what it is like for them to be out at sea, and what inspires them. Read more about why and how these women make amazing videos of the deep sea [here](#).



Teachers speak to scientists on the *Okeanos Explorer* during the Exploring the Deep Ocean with NOAA professional development workshop at the National Aquarium in Baltimore in April 2017. Image courtesy of David Christopher.

#### Education Professional Development

NOAA OER holds Professional Development workshops for educators at 15 [alliance sites](#) across the country to help bring exploration-focused, standards-based science of ocean exploration into classrooms. If you want to learn about why and how we explore the deep ocean, please attend one of our free educator professional development workshops at an aquarium or science center near you!

Upcoming workshops in June and July will be held in Louisiana, Maryland and Texas. The complete Spring/Summer 2017 [professional development schedule](#) for *Exploring the Deep Ocean with NOAA* is posted on our website.

*Note: This workshop is a combination of the previously offered Why Do We Explore? and How Do We Explore? workshops.*

### NOAA Workshop Alumni Joins Teacher-at-Sea Program

Terry Maxwell, who attended the educator professional development workshop *Exploring the Deep Ocean with NOAA* at the Shedd in Chicago, IL in October 2016, describes how it has impacted his teaching career: "I applied for the [Teacher At Sea](#) experience after the workshop, and received notice in February that I was selected for the experience. I will be part of a research mission which will be exploring benthic zones and sea scallop populations in the Atlantic coast along the New England coast. Just wanted to pass along this information, and say thank you to the people at NOAA and Shedd for making me aware of this opportunity".



Terry Maxwell attends the Educator Professional Development Workshop in Chicago, IL in October 2016. Image Courtesy of NOAA Office of Ocean Exploration and Research.

Read about the program and how to apply [here](#).

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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