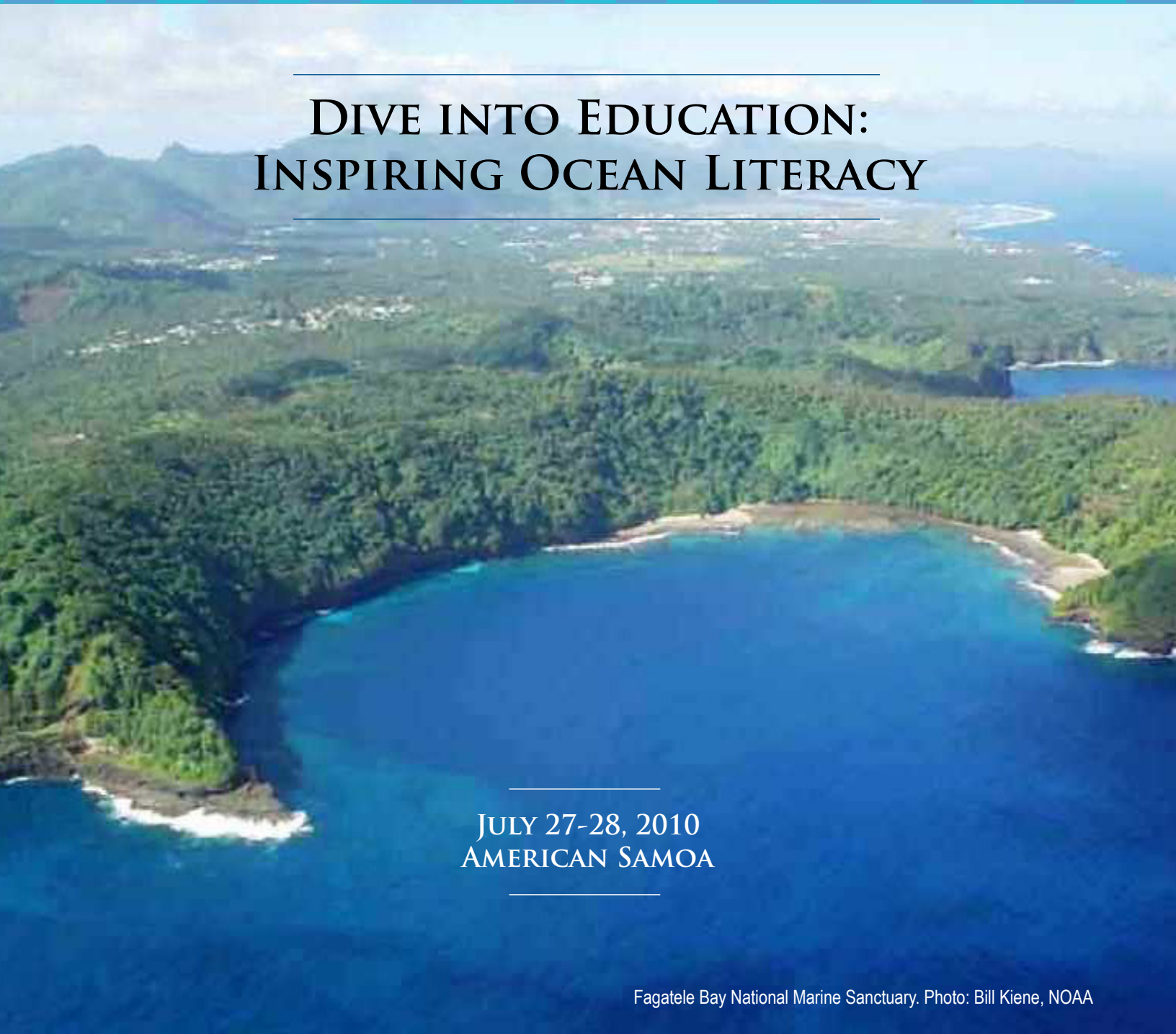
National Marine Sanctuaries
National Oceanic and Atmospheric Administration

Dive into Education: Inspiring Ocean Literacy



July 27-28, 2010
American Samoa

Fagatele Bay National Marine Sanctuary. Photo: Bill Kiene, NOAA

Tuesday • July 27, 2010

7:30 - 8:30 am	**Check-in Dive into Education Registered Participants**
8:00 am	**Continental Breakfast** *sponsored by American Samoa EPA*
8:30 am	**Welcome Remarks** by Lelei Peau, Deputy Director of Dept. of Commerce **Opening Prayer** by Reverend Ioane Evagelia, CCCAS, Utulei **Hymn Performed** by CCCAS Choir, Utulei **Special Remarks** by Honorable Governor Togiola T.A. Tulafono, American Samoa **Keynote** by Daniel J. Basta, Director, NOAA Office of National Marine Sanctuaries
9:15 am	**Tour of the National Marine Sanctuary System and Sense of Place: Fagatele Bay**
10:00 am	**Closing Remarks** by Dr. Claire Poumele, Director, Dept. of Education
10:10 am	**Explanation of Concurrent Sessions** by Claire Fackler, Dive into Education Coordinator
10:20 am	**Break** *with snacks and beverages*

<table>
<tr><th></th><th>Coral Reef Ecosystems</th><th>Marine Biology</th><th>Earth Systems Science</th><th>Various Topics</th></tr>
<tr><td>10:30 - 11:30 am</td><td>Dive into the Coral Reef CD (Main Auditorium 1)</td><td>Secrets of the Sea Turtles (Main Auditorium 2)</td><td>Plates on the Move (North Wing)</td><td>Using Online Data to Detect El Nino (Conference Room)</td></tr>
<tr><td>11:35 am - 12:35 pm</td><td>Corals to Classrooms* (Main Auditorium 1)</td><td>Humans and Whales (Main Auditorium 2)</td><td>Tidying up the Tides (North Wing)</td><td>Piecing it Together: Photo Mosaic (Conference Room)</td></tr>
<tr><td>12:40 pm</td><td colspan="4">Lunch sponsored by McConnell Dowell</td></tr>
<tr><td>1:45 - 2:45 pm</td><td rowspan="2">Reef Rendezvous (Main Auditorium 1)</td><td rowspan="2">Awesome Octopus, Slippery Squid & Elegant Slugs of the Sea (Main Auditorium 2)</td><td>The Ocean in Motion (North Wing)</td><td rowspan="2">Water Quality Monitoring (Conference Room)</td></tr>
<tr><td>2:50 - 3:50 pm</td><td>An Ocean Mapping We Will Go! (North Wing)</td></tr>
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4:00 pm	**Workshop Adjourned**
5:30 pm	**Dive into Education Teacher reception** at Sadie's by the Sea *Sponsored by the Pacific Islands Regional Office*

Wednesday • July 28, 2010

8:00 - 8:30 am — **Continental Breakfast** *sponsored by American Samoa EPA*

	Coral Reef Ecosystems	Climate Change	Ocean Exploration and Technology	Various Topics
8:30 - 9:45 am	Surviving Life in a Coral Reef *(Main Auditorium 1)*	Ocean Acidification Activities *(North Wing)*	Designing Tools for Ocean Exploration *(Main Auditorium 2)*	Seagrass...It's Alive! *(Conference Room)*
9:45 - 11:00 am	Fish Forms, Fish Functions *(Main Auditorium 1)*	Watersheds *(Conference Room)*	Exploring the Ocean with ROVs *(North Wing)*	Ocean Origami *(Main Auditorium 2)*
11:05 am	**Break** *with snacks and beverages*			
11:20 am - 12:30 pm	Fish for the Future *(Main Auditorium 1)*	Climate Change Sleuths *(Main Auditorium 2)*	Dive into Maritime Heritage *(North Wing)*	Investigating Marine Debris *(Conference Room)*
12:35 pm	**Lunch** *hosted by NOAA Fagatele Bay National Marine Sanctuary*			
1:35 pm	**Exhibit Session**			
2:30 - 3:45 pm	Corals to Classrooms *(Main Auditorium 1)*	Seals, Salz, Saldus, Sal, Hals, and More *(North Wing)*	Ocean Science Technology *(Conference Room)*	Secrets of the Sea Turtle *(Main Auditorium 2)*

3:50 pm — **Dive into Education Wrap-Up Session**

4:10 pm — **Farewell Cultural Performance** *by Taupou Manaia*

4:30 pm — **Post-Workshop Evaluation**
All Dive into Education workshop participants are required to complete the post-workshop evaluation form.

4:50 pm — **Workshop Adjourned**

Tuesday • July 27, 2010

Dive into the Coral Reef Educational Resources CD
Jonathan Shannon, NOAA Fisheries
Guided tutorial demonstrating the wealth of materials on the Coral Reef Educational Resources CD provided to each teacher, highlighting five that fit priority topic areas.

Secrets of the Sea Turtle: Sleuthing & Science
Carol Preston, Gulf of the Farallones National Marine Sanctuary
A sea turtle presentation with hands-on classification activity, an outdoor sea turtle life cycle course, art and gaming assessment activities.

Plates on the Move
Shannon Ricles, Monitor National Marine Sanctuary
Discover how convection currents in the mantle cause continental drift and sea floor spreading. Learn about the theory of plate tectonics and the causes of earthquakes.

Using Online Data to Detect El Nino
Tracy Hajduk, NOAA Office of National Marine Sanctuaries
In this five-part lesson, online sea surface data is used to identify an El Nino event and assess its impact on productivity.

Corals to Classrooms
Shelley DuPuy, Flower Garden Banks National Marine Sanctuary
Basic coral structure and function, including how they eat and reproduce. Explore habitat requirements, survival adaptations, natural and human impacts. Includes hands-on activities. *This session is a pre-requisite for the two-hour “Reef Rendezvous” course.

Humans and Whales: So Different, So Alike
Anne Smrcina, Stellwagen Bank National Marine Sanctuary
Humans and whales appear completely different, but we share many mammalian characteristics. We will explore similarities in body systems and adaptations where we diverge.

Tidying Up the Tides
Shannon Ricles, Monitor National Marine Sanctuary
Learn how the Moon’s gravitational pull acts upon our ocean to create tides. Use NOAA real-time tide data to learn about diurnal, semi-diurnal, and mixed tides.

Piecing it All Together: Photo Mosaic Activity
Sarah Waters, Thunder Bay National Marine Sanctuary
Learn how photo mosaics help archaeologists document and interpret shipwreck sites. Piece together individual images of a shipwreck and create a photo mosaic.

Reef Rendezvous
Shelley Du Puy, Cathy Sakas and Mary Tagliareni, Flower Garden Banks, Gray’s Reef and Florida Keys national marine sanctuaries
Compare reefs in the Atlantic, Caribbean, Gulf of Mexico and Pacific. Discover how watersheds and currents can influence reef systems. Identify human influences on reef health.

Awesome Octopus, Slippery Squid & Elegant Slugs of the Sea
Carol Preston, Gulf of the Farallones National Marine Sanctuary
Explore the biology and natural history of mollusks through hands-on activities including a squid dissection and sea shell investigations. Artifacts, photos and video will also be used.

Tuesday • July 27, 2010

The Ocean in Motion
Michiko Martin amd Kate Thompson, NOAA Office of National Marine Sanctuaries
This session will cover the different types of ocean movements from waves, to currents and tides. Come and learn about how these movements create the "perfect" wave. Free curriculum, posters and videos for use in the classroom!

An Ocean Mapping We Will Go!
Shannon Ricles, Monitor National Marine Sanctuary
Create a model of the ocean floor, make a topography map, and discover how scientists use sonar to map the ocean floor.

Seashore Water Quality Monitoring
Dawn Hayes, Monterey Bay National Marine Sanctuary
This session will cover how ocean water quality can be affected by the activities happening in local watersheds. We will use water quality kits to sample a local water body and discuss why water quality is monitored and what parameters are important indicators of clean water. The first 30 participants will receive complete water quality monitoring kits.

Wednesday • July 28, 2010

Surviving Life in a Coral Reef
Patty Miller, Hawaiian Islands Humpback Whale National Marine Sanctuary
Join us to examine the unique ways that fish and invertebrates have adapted themselves to survive in a coral reef habitat.

Ocean Acidification Activities
Julie Bursek, Channel Islands National Marine Sanctuary
This session will highlight classroom activities developed for the MERITO Academy that focus on ocean acidification and its effects on marine organisms.

Designing Tools for Ocean Exploration: Taking a Closer Look at Deep-Sea & Shallow Corals
Jacqueline Laverdure and Jennifer Stock, Olympic Coast and Cordell Bank national marine sanctuaries
Participants will receive activities that focus on similarities and differences between deep and shallow water coral reef communities and tools for exploring them.

Seagrass...It's Alive!
Mary Tagliareni, Florida Keys National Marine Sanctuary
Seagrass grows worldwide, except Antarctica, and plays a critical role in the health of the oceans. Hands-on activities and a Toolbox CD will be provided.

Fish Forms, Fish Functions
Anne Smrcina, Stellwagen Bank Nat'l Marine Sanctuary
Participants will design fish from a suite of basic characteristics. We will explore relationships between habitats and body design, comparing our creations to real species.

Watersheds
Dawn Hayes, Monterey Bay National Marine Sanctuary
This session will cover the basic concepts of watersheds, point source and non-point source pollution and how ocean water quality can be affected by the activities happening in local watersheds.

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Exploring the Ocean with ROVs
Shannon Ricles and Sarah Waters, Monitor and Thunder Bay national marine sanctuaries
Teachers will learn how NOAA uses remotely operated vehicles (ROVs) to explore the ocean. They will design and build an ROV arm and get a curriculum to use in their class.

Ocean Origami
Michiko Martin, Kate Thompson, Claire Fackler and Tracy Hajduk, NOAA Office of National Marine Sanctuaries
Come learn how to use origami to understand different ocean creatures; their migrations, habitats, and impacts on the ocean ecosystem. Free origami materials provided for your classroom!

Fish for the Future
Andy Collins, Papahanaumokuakea Marine National Monument
Learn about fish reproduction and techniques that help to ensure that your communities have fish for the future by choosing fish for harvest that are of medium size, rather than taking only the large fish.

Climate Change Sleuths
Patty Miller, Hawaiian Islands Humpback Whale National Marine Sanctuary
Teachers will learn how to apply different monitoring techniques to track changes and collect data in their local beach and reef environments.

Dive into Maritime Heritage: Shipwreck Mapping
Sarah Waters and Shannon Ricles, Thunder Bay and Monitor national marine sanctuaries
Learn techniques archaeologists use to study shipwrecks underwater. Use this unique lesson to teach students the skills of observation, data gathering, geometry, and history.

Investigating Local Sources of Marine Debris
Jennifer Stock, Cordell Bank National Marine Sanctuary
Survey debris on your school grounds or nearby community and compare data with marine debris that is typically found on coastal cleanups around the world.

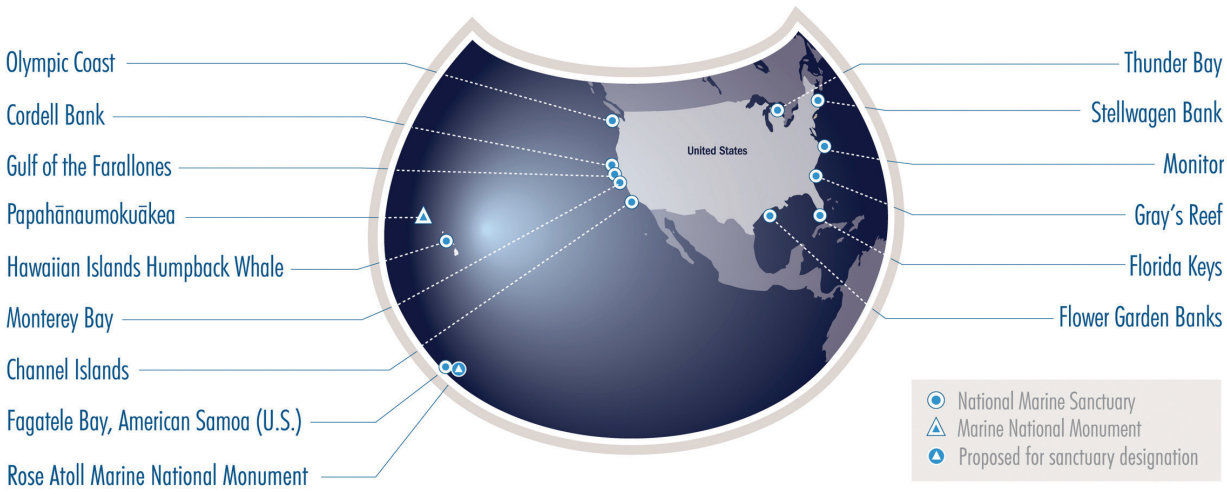
Corals to Classrooms
Shelley DuPuy, Flower Garden Banks National Marine Sanctuary
Basic coral structure and function, including how they eat and reproduce. Explore habitat requirements, survival adaptations, natural and human impacts. Includes hands-on activities.

Sealz, Salz, Saldus, Sal, Hals, and More NaCl
Shannon Ricles, Monitor National Marine Sanctuary
Activities will explore the physical properties of salt and fresh water and why things sink or float. Teachers will also make desalination solar still.

Ocean Science Technology in Research and Exploration for the Classroom
Cathy Sakas, Gray's Reef National Marine Sanctuary
An overview of ocean science technology will be given with hands-on activities that can be adapted to any audience and any grade level.

Secrets of the Sea Turtle: Sleuthing & Science
Carol Preston, Gulf of the Farallones National Marine Sanctuary
A sea turtle presentation with hands-on classification activity, an outdoor sea turtle life cycle course, art and gaming assessment activities.

National Marine Sanctuary System



Scale varies in this perspective. Adapted from National Geographic Maps.

The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global ocean, atmosphere, space, and sun, and applies this knowledge to science and service that touches the lives of all Americans. The NOAA Office of National Marine Sanctuaries manages a system of 13 national marine sanctuaries and one marine national monument encompassing more than 150,000 square miles of ocean and Great Lakes waters. Our national marine sanctuaries are part of our collective riches as a nation, treasures that belong to all of us.

The Pacific Islands Region comprises three special areas that protect marine life and ecosystems, as well as our unique island cultural and maritime heritage.

Papahanaumokuakea Marine National Monument is the largest protected area in the United States, stretching the length of the Northwestern Hawaiian Islands. Co-managed with the State of Hawai'i and the Department of the Interior, the monument preserves one of the most untouched areas of coral reef in the world.

Hawaiian Islands Humpback Whale National Marine Sanctuary ranges from north to south through the main Hawaiian Islands, with areas off six of the main eight islands. Protecting endangered humpback whales and their habitat, the site engages in education, research and rescue to meet their mission goals.

Fagatele Bay National Marine Sanctuary is the only site located below the equator and in a U.S. Territory. Along with co-managers in the American Samoa Government, the site protects a small but pristine coral reef.

Dive into Education Program

Office of National Marine Sanctuaries Education Mission

To inspire ocean and climate literacy and conservation through national marine sanctuaries.

Dive into Education Program Goals

Dive into Education is an ocean science education program aimed at providing teachers resources and training to support ocean and climate literacy in America's classrooms.

The major goals of the Dive into Education program are to:

- Provide K-12 teachers with professional development using hands-on, standards-based, ocean science activities that will excite their students about science and technology.
- Provide K-12 teachers an ocean science education network for future partnerships, collaborations and support.
- Promote understanding of NOAA's National Marine Sanctuary System.
- Encourage responsible stewardship of marine, natural, and cultural resources, especially national marine sanctuaries.

Dive into Education Sponsors

Special thanks to: Office of Governor, KVZK TV, and American Samoa Dept. of Education