



OREGON SHORES  
CONSERVATION COALITION

## Sharing the Coast Conference 2017 A Focus on Citizen Science



Waldport, Oregon

March 3-5<sup>th</sup>, 2017

### **Friday Evening Keynote Speaker**

#### **Dr. Leigh Torres**

Assistant Professor at Oregon State University, Oregon Sea Grant Extension agent

#### **“Using Advanced Biotechnology to Expand Our Knowledge of Marine Mammal Behaviors”**

Gray whales are our close neighbors, but their habitat—the Pacific Ocean—is inhospitable to humans, leaving us with little firsthand knowledge about their day-to-day lives. Now Oregon scientists such as Leigh Torres are using new research techniques to expand what we know about these and other marine mammals: what they eat and how they forage, for example, as well as how ocean noise—natural and human-caused—affects their behavior and overall health. These research teams are using underwater Go-Pro cameras and aerial drones to closely observe individual whales, and they’re deploying drifting hydrophones to record the variety of noises whales are exposed to. They’re also using advanced biotechnology methods to closely analyze whale feces, revealing volumes of information about what the whales eat and their stress and reproductive hormone levels. First, however, they have to scoop the poop.

Leigh Torres is a marine ecologist interested in understanding how marine animals, including marine mammals, seabirds and sharks, use their environment in the context of behavior, space, and time. Her research explores how marine predators find prey within highly patchy, variable marine ecosystems. Much of this work is directed toward improving conservation management of protected or threatened species. By identifying areas with increased presence of threatened species, management efforts can be more directed and effective. She has conducted studies in a variety of ecosystems across the globe, including estuaries of Florida, near and offshore waters of the United States (including Oregon) and Latin America, pelagic regions of the Southern Ocean, and sub-Antarctic islands and coastal waters of New Zealand.

### **Saturday Presenters**

#### **Dr. Jessica A. Miller**

Associate Professor in Fisheries at Oregon State University and a member of the Coastal Oregon Marine Experiment Station at the Hatfield Marine Science Center in Newport, Oregon

#### **Reva Gillman**

Master’s student, Oregon State University’s Marine Resource Management Program

#### **“Japanese Tsunami Marine Debris and the Biota It Carries”**

The talk will provide an overview of Japanese Tsunami Marine Debris (JTMD) and associated biota that began arriving in Oregon in 2012 after the Great Tohoku Earthquake and Tsunami. Jessica will also present information on the geographic distribution and environmental and life history attributes of JTMD species and discuss the results of a comparison between JTMD species with and without known invasion histories.

Jessica Miller, PhD, is an Associate Professor in Fisheries at Oregon State University and a member of the Coastal Oregon Marine Experiment Station at the Hatfield Marine Science Center in Newport, Oregon. She is a marine ecologist whose research interests include life history variation and mixing and migration in marine and anadromous species. She addresses questions relevant to conservation and management of coastal species and habitats and has worked extensively with Chinook salmon as well as other species. In 2012, she became involved with Japanese Tsunami Marine Debris when a large dock from Misawa, Japan washed ashore a few miles from her office. Her research efforts have focused on reconstructing growth histories of a non-native mussel commonly found on JTMD as well as comparing characteristics of JMTD species with and without known invasion histories to better understand factors regulating long-distance transport of coastal species. She received a BA in Zoology from the University of Montana, a MS in Fisheries from University of Washington, and a PhD in Marine Biology from University of Oregon.

Reva Gillman is a Master's student in Oregon State University's Marine Resource Management Program. She has helped develop the database of geographic distribution and environmental and life history attributes of JTMD species and is examining the role of debris as a transport vector within our oceans.

### **Meg Reed**

Coastal Shores Specialist for the Department of Land Conservation and Development's Coastal Management Program

### **Finding Balance at the Oregon Coast: Insights on science, policy, and management of coastal erosion and shoreline armoring.**

The high-energy wave and wind environment of the Oregon coast can create a challenging setting for development and human life. Stronger winter storms and increasing erosion due to climate change have already led to loss of beach and property in many areas. Various adaptation strategies have been employed or discussed for how to both protect property and the public beach, from shoreline armoring to managed retreat. Through analyzing comprehensive spatial and policy information about shoreline armoring, erosion, flooding, sea level rise, and other coastal hazards, we can start to understand the most vulnerable coastal areas, review armoring options and alternatives, and develop policy recommendations regarding new and existing coastal development, with the goal of moving towards resiliency. This talk will focus on some of the results of this analysis and also discuss ways in which citizens can help provide coastal managers with local data through King Tides photographs to better help visualize the impacts of sea level rise.

Meg Reed's background is in marine science, natural resource management, and science communication. She has worked previously for the State of Oregon in other positions and for environmental nonprofits prior to moving to Oregon. Her current position provides technical assistance to cities, counties, and state agencies regarding land use planning for coastal shore processes and geologic hazards.

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### **Dr. William Hanshumaker**

Fisheries and Wildlife Senior Instructor at Oregon State University and Oregon Sea Grant's Chief Scientist

#### **“Top Ten Organisms CoastWatchers Find on the Beach”**

Beach visitors frequently call the Hatfield Marine Science Center or drop by with unknown artifacts with the need to have them identified. Bill Hanshumaker has been documenting this data for over 23 years. During his presentation Dr. Hanshumaker will share some of the most common and unusual findings.

Bill has nearly 40 years of experience in Free-Choice Learning, working first at the Oregon Museum of Science and Industry before joining OSU at the Hatfield Marine Science Center in 1993. He designs and evaluates educational programs for delivery through a variety of vehicles to a broad range of audiences. This includes developing exhibits and curriculum that meets state education standards. Since 2003, Bill has organized more than 50 special events or workshops that have reached over 25,000 individuals. His public necropsies of marine mammals, large fish, sea turtles or cephalopods are extremely popular.

### **Dr. Steve Rumrill**

Shellfish Program Leader, Oregon Department of Fish and Wildlife

#### **“Oregon bays and estuaries: an overview of types, habitats, shellfish, and management”**

Steve Rumrill is a marine and estuarine ecologist who has worked over the past three decades primarily in the shallow sub-tidal zones, kelp beds, rocky intertidal areas, eelgrass beds, salt marshes, and soft sediment habitats of California, Oregon, Washington, and British Columbia. He received his academic training as an invertebrate zoologist, reproductive biologist, and larval ecologist, and he has taxonomic expertise with communities of echinoderms, mollusks, and crustaceans throughout the Pacific Northwest. As the leader for the Oregon Department of Fish and Wildlife/Shellfish Program, Steve has statewide responsibilities for the conservation and management of shellfish populations and characterization of their habitats. Steve also participates regularly in efforts to document the arrival and spread of new non-native species, and he works closely with his colleagues to identify and implement rapid-response actions to minimize the likelihood of establishment by non-native species along the Oregon coast.

### **Melissa Keyser**

Program Coordinator, Haystack Rock Awareness Program

#### **“Shoreline Citizen Science”**

This presentation will detail protocols associated with each current citizen science program underway on Oregon’s shoreline. Citizen science surveys are open to anyone with an interest in the subject matter and willing to commit their time to ongoing surveying. There are many ways to get involved with marine science, outreach, and education – as you will learn in this presentation; citizen science is one worthwhile option.

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Melissa Keyser, Program Coordinator for the Haystack Rock Awareness Program in Cannon Beach, holds a degree in Environmental Studies and a degree in Geography from Portland State University. She has worked and volunteered for a variety of organizations focusing on environmental awareness and volunteer participation. Currently a board member for the Friends of Cape Falcon Marine Reserve and the Columbia River Estuary Study Taskforce and a volunteer for SOLVe, COASST, MARINe, and Surfrider, her work focuses on environmental education, stewardship, and citizen science.

The Haystack Rock Awareness Program (HRAP), a public education program which works to protect the rocky intertidal environment and sea bird populations of Haystack Rock in Cannon Beach, currently participates in many citizen science surveys. Citizen science surveying entails the necessary on-site data gathering, which is then evaluated by science professionals. Survey programs in which HRAP participates include COASST bird and marine debris surveys, MARINe sea star surveys, and Black Oystercatcher monitoring through the Audubon Society of Portland.

### **Jenna Sullivan**

PhD candidate in the Department of Integrative Biology, Oregon State University

### **"Sea stars, wasting disease, and community impacts"**

Jenna Sullivan is a 4th year PhD student in Dr. Bruce Menge's marine community ecology lab in the Integrative Biology Department at Oregon State University. In her research, she takes advantage of the diverse, well-characterized system of the Oregon coast rocky intertidal to gain insights into how human-induced changes, including ocean acidification and top predator loss, will affect individual species and their interactions. She focuses on the keystone sea star *Pisaster ochraceus*, and is currently working to characterize the community effects of the decline in this top predator as a result of sea star wasting disease. She also works with Dr. Jane Lubchenco on the role of science in policy and management, including through having assisted in her efforts as the U.S. State Department's first Science Envoy for the Ocean.

Jenna will discuss current research on the sea star wasting disease outbreak in Oregon. The talk will cover an overview of the disease, what might be causing it, the ecological consequences, and the potential for sea star recovery. In the workshop, participants will learn how to identify wasting symptoms and how they can help scientists better understand the disease. Jenna grew up in Corvallis, OR, and attended Dartmouth College. Since graduating in 2009 she has primarily been teaching biology, particularly of marine systems, including at schools in the Republic of the Marshall Islands and in Florida, before beginning her PhD.

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## **Jim Rice**

Marine Mammal Stranding Coordinator, Marine Mammal Institute, Oregon State University

### **“Marine Mammal Stranding: You Can Help!”**

Stranding events offer a wealth of information to researchers and resource managers by providing valuable insights into the lives of marine mammals, including seasonal distribution, natural history, population health, environmental contaminant levels, cases of human interaction, and incidence of disease. Jim will provide an overview of the work of the Oregon Marine Mammal Stranding Network, present a summary of stranding trends and case investigations, and discuss ways to get involved.

As the stranding coordinator, Jim manages the Marine Mammal Stranding Network for the entire Oregon coast, organizes regular meetings of Oregon stranding responders, trains and facilitates volunteers, and provides educational outreach. Through this program, various levels of data are gathered and when necessary, he performs necropsies, collects and banks tissue samples. Another aspect of his position is maintaining the database for all Oregon stranding responses, sharing and collaborating with researchers and NOAA fisheries.

## **Era Horton**

CoastWatcher, Mile 232; Site Captain at Boiler Bay State Park for the *Whale Watching Spoken Here* program

### **“Whales & Reserves, Education and Awareness Project”**

Era will provide an overview of the American Cetacean Society and the activities of the Oregon chapter. He will discuss the citizen science project the chapter undertook with a grant from Oregon Marine Reserve Partnership during the summer of 2016. His talk will cover the goals, objectives, and accomplishments achieved and future of this program.

Era spent 36 years as a firefighter before retiring in 2014. He has as an Associate of Arts Degree in General Science, Associate of Science degree in Fire Science, and Bachelor of Science degree in Fire Dynamics and Prevention Technology. He became active in the Oregon State Park *Whale Watching Spoken Here* program in 2009 and now serves as a site captain at Boiler Bay State Wayside during the whale watch weeks.

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## **Field Experiences/Workshops**

### **COASST-Coastal Observation and Sea Bird Survey Team**

Oregon Coast Community College

3120 Crestline Dr.

Waldport, OR

CoastWatch is the Oregon partner of the Coastal Observation and Seabird Survey Team (COASST), which conducts a long-running beached bird survey in all the West Coast states. This is true citizen science; with training, volunteers learn to gather information that is of science quality and used by scientists in studies and by resource agencies in assessing environmental impacts.

As part of the conference, a training session for prospective volunteers in the survey is scheduled for Sunday, March 5, 10 a.m. to 4 p.m. at the Waldport outpost of Oregon Coast Community College (3120 Crestline Dr.). The trainer will be Hillary Burgess, COASST's science coordinator.

### **Steve Rumrill**

#### **Guided Estuary Walk**

Join Steve to explore the mudflats and habitats used by native Olympia oysters. "Prepare to get muddy."

### **Fawn Custer**

#### **CoastWatch protocols and Citizen Science Sampling**

Fawn will lead an exploration of the shoreline at Seal Rock State Park.

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