The Pacific Northwest Cooperative Ecosystem Studies Unit (PNW CESU), hosted by the University of Washington's School of Environmental and Forest Sciences, is a partnership for research, technical assistance, and education to enhance understanding and management of natural and cultural resources.

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Previous issues are available online at Cooperative Ventures.

News from the Host

The University of Washington, School of Environmental and Forest Sciences, has appreciated the support of Director Tom DeLuca who has served as Co-Leader of the PNW CESU for the past three years. Dr. DeLuca has accepted the position of dean of the College of Forestry and Conservation at the University of Montana and will now be involved in the Rocky Mountains CESU.

We are pleased to welcome our new PNW CESU Co-Leader, Dr. Elizabeth Van Volkenburgh, who will be acting as Interim Director of the School of Environmental and Forest Sciences.

Dr. Van Volkenburgh has, from the beginning, been interested in how plants work, focusing on physiology and adaptation. In her career as a plant biologist, her research has focused on the physiological regulation of leaf expansion in crop plants, including beans, corn, poplar and tomato. She is most known for her work on leaf growth with respect to photobiology and drought stress, and has explored how genetic variation in activity of growth control affects yield. After more than 30 years as a professor of biology at the University of Washington, we are excited to have her lead the School of Environmental and Forest Sciences and act as Co-Leader of the Pacific Northwest CESU.
New Members
Visit our Membership page to learn about our partners and how to join the PNW CESU.

New PNW CESU Member: Seattle University

We are excited to welcome our newest partner, Seattle University.

Seattle University, founded in 1891, is a Jesuit Catholic university located on 50 acres in Seattle's Capitol Hill neighborhood. More than 7,000 students are enrolled in undergraduate and graduate programs within eight schools and colleges.

Seattle University is one of the top universities in the West, according to U.S. News & World Report: Best Colleges 2016. The university ranks #6 for its full range of undergraduate, master's and select doctoral degree programs. The university consistently has held a spot in the West's top 10 for more than a dozen years. In addition, Seattle U is a top-ranked university in the West for military veterans, ranking #6 for offering benefits for veterans and active-duty service members.

Dr. Teodora Rutar Shuman, Associate Professor and Department Chair of Mechanical Engineering, will be serving as the SU Technical Representative for the PNW CESU. She teaches in the areas of energy, fluid mechanics, thermodynamics, and design. Her research is in sustainable dewatering of microalgae and in pollutant reduction from lean-premixed combustion. teodora@seattleu.edu

The College of Science and Engineering has the following Areas of Study:

Undergraduate
• Civil and Environmental Engineering
• Environmental Science
• Computer Science
• Electrical and Computer Engineering
• Mechanical Engineering

Graduate
• Computer Science
• Software Engineering

For more information on the areas of study in the College of Science and Engineering please refer to our web site at https://www.seattleu.edu/scieng/

Partner Events

National Park Service

The NPS in Seattle and across the nation is supporting communities and organizations to commemorate the 75th anniversary of the issuance of Executive Order 9066 and the resulting incarceration of Japanese Americans during World War II through events, educational programs, and service opportunities.

Year of Remembrance: Glimpses of a Forever Foreigner
Featuring poems by Lawrence Matsuda and artwork by Roger Shimomura

Opening reception: Thursday, February 16, 2017, 6pm
RSVPs encouraged – rsvp@wingluke.org
On display February 17, 2017 – February 11, 2018

On February 19, 1942, President Franklin D. Roosevelt issued Executive Order 9066, which resulted in the forced removal and incarceration of 120,000 Japanese and Japanese Americans. They were charged with no crime. The cause of their imprisonment was their ancestry.

This exhibition recognizes the 75th Anniversary of Executive Order 9066,
and explores historic and contemporary issues of racism, discrimination and human rights.

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**Artist Talk and Poetry Reading**
With Roger Shimomura and Lawrence Matsuda
Sat, February 18, 2017, 4-5:30pm

Meet Roger Shimomura and Lawrence Matsuda as they examine their works that interpret and reflect on the incarceration of Japanese American during WWII, and relate them to contemporary times.

Both will be available for book signing after the event. Select books of Roger and Lawrence’s works will be available for purchase in the Marketplace. Tickets $15/general public; $10/members. Purchase tickets online: [https://community.wingluke.org/2017-pages/artist-talk-and-poetry-reading-2017](https://community.wingluke.org/2017-pages/artist-talk-and-poetry-reading-2017)

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**PNW CESU Funding Update**

The PNW CESU's federal agencies have supplied **$99.3 million** to our partners to fund **816 projects** since inception in 2001.

In fiscal year 2016, nine federal agencies supplied over **$9.6 million** to 14 of our partners to fund **101 project** (51 new and 51 existing projects).

You can find the list of our new projects [here](#). Further information about these and other projects can be found in our searchable [Project Library](#).

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**PNW CESU FY01 - FY16 Funding**

Federal Agencies supplying FY16 Funding:

- Bureau of Land Management (BLM)
- National Oceanic and Atmospheric Administration (NOAA)
- National Park Service (NPS)
- Natural Resources Conservation Service (NRCS)
- U.S. Army Corps of Engineers (USACE)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
• U.S. Forest Service (USFS) – Pacific Northwest Research Station
• U.S. Geological Survey (USGS)

Funding Opportunities
Visit our Announcements page for more information about these funding opportunities.

Department of Defense
Request for Statements of Interest

Project Title: Passive Acoustic Monitoring of Marine Mammals in the Gulf of Alaska Range Complex
#N62473-17-2-0002, Approximately $250,000.00 is expected to be available to support the base requirements of this project.

The Department of the Navy (DoN) is seeking statements of interest that address the Navy’s passive acoustic monitoring requirements for marine mammals in the GOA Range Complex. Generally, the Navy’s passive acoustic monitoring requirements include: (1) collect and analyze passive acoustic monitoring data for one year; (2) evaluate the potential impact of sonar on marine mammals; (3) produce a report of each effort; (4) attend the Acoustical Society of America Annual meeting. Please find the full RSOI and enclosures 1-6 here.

**Project Title: Humpback Whale Tagging in Support of Marine Mammal Monitoring Across Multiple Navy Training Areas in the Pacific Ocean**

#N62473-17-2-0001, Approximately $ 230,000.00 is expected to be available to support the base option requirements of this project.

The Department of the Navy (DoN) is seeking statements of interest that address the Navy’s monitoring requirements for humpback whales across multiple training ranges in the Pacific Ocean. Generally, the Navy’s BASE monitoring requirements include: (1) deployment of deep-implant satellite tags on humpback whales in Hawaii during the winter/spring 2017; (2) collect tissue samples simultaneously during tagging efforts; and (3) prepare a preliminary summary. Six OPTIONAL requirements include: (1) perform tissue sample genetic analyses; (2) conduct a technical analysis of tag data and compile that information in a draft and final report; (3) procure additional satellite tags; (4) deploy additional deep-implant satellite tags on humpback whales off Oregon during the summer/fall and collect tissue samples; (5) perform tissue sample genetic analyses on summer/fall collections; and (6) conduct a technical analysis of summer/fall tag data and compile that information into the report from the OPTIONAL reporting task. Please find the full RSOI announcement and 6 enclosures here.

**U.S. ARMY CORPS OF ENGINEERINGS**

**Omaha District, Legacy Resource Management Program, Funding Opportunity Announcements**

**NWO-CESU-17-13, MANAGEMENT, SPECIES, HAWAIIAN PETREL; KOKEE AFS, $92,500, Closing Date: Mar 13, 2017**

The 611th Civil Engineer Squadron (CES) is the real property owner of an Air Force Station on the island Kauai. This project will support the 611th CES and its tenants at Kokee AFS complete requirements depicted within Biological Opinions issued by the USFWS, specifically avian monitoring and predator control. More information is available here.

**NWO-CESU-17-10, CLIMATE CHANGE BASELINE ANALYSIS FORT WAINWRIGHT, AK, $181,190, Closing Date: Mar 06, 2017**

The U.S. Army Garrison, Fort Wainwright, Alaska (USAG FWA) owns and manages approximately 1.6 million acres in Interior Alaska. The USAG FWA is requesting assistance to facilitate a climate change baseline analysis with requirements to analyze climate change effects and management strategies for Fort Wainwright and its Training Lands. More information is available here.

**NWO-CESU-17-9, VANDENBERG AIR FORCE BASE NATURAL RESOURCE SUPPORT, $101,421, Closing Date: Mar 06, 2017**

The objectives of the work are to conduct natural resource tasks on the federal lands belonging to Vandenberg AFB, and to prepare reports detailing the results of this work for submission to the USACE Omaha District POC, AFCEC Edwards Installation Support Team (IST) POC, and Vandenberg Natural Resource Manager. More information is available here.

**NWO-CESU-17-6, NELLIS AFB NATURAL RESOURCES SUPPORT, $2,091,942, Closing Date: Mar 06, 2017**
The objectives of the work to be performed under this task order are to conduct natural resource tasks on the federal lands belonging to Nellis AFB, and to prepare reports detailing the results of this work for submission to the USACE Omaha District POC, AFCEC Nellis Installation Support Team (IST) POC, and Nellis AFB Natural Resource POC. More information is available here.

U.S. Bureau of Reclamation
Request for Statements of Interest

Project Title: Peer Review: Three Lakes Water Quality and Hydrologic Models. Grand Lake, Colorado

Responses to the Request for Statements of Interest (SOI) will be used to identify a potential lead to carry out a reviewer selection process to form two peer review panels to conduct review of a water quality model and hydrologic model (2 separate models), provide responses relative to aspects and issues provided by Reclamation, facilitate conversation amongst individual peer reviewers and panels prior to preparation of a single report of the expert peer review comments. More information is available here.

PNW CESU Project Highlight
Visit our Project Library for more information about these and other PNW CESU projects.

National Park Service and Portland State University

Oligohaline Tidal Wetland Plant Community Restoration and Response to Changes in Tidal Flooding and Salinity

The National Park Service's Chris Clatterbuck, Chief of Resources, Lewis and Clark National Historic Park, and Portland State University's Sarah Kidd, PhD student and National Science Foundation Fellow, and Dr. Alan Yeakley, Director of the School of the Environment collaborated on this project. They examined the composition of seed banks and seed bank emergence among common native and non-native dominant plant communities from tidally reconnected oligohaline wetlands in Lewis & Clark National Historical Park. The ability of native plants (Carex lyngbyei, Schoenoplectus lacustris) and non-native plants (Phalaris arundinacea, Juncus effusus subsp effusus) to dominate different areas within a wetland is hypothesized to be related to their abundance in the seed bank and germination responses to soil conditions created by the restored frequency and duration of tidal flooding and salinity. To identify how seed bank viability changes in response to these abiotic conditions, seed bank emergence was examined under a gradient of tidal flooding and salinity in the greenhouse. These data help determine the role of dominant native and non-native plant communities in defining restored tidal wetland seed bank compositions and how these seed banks may respond to changes in tidal flooding and salinity. This project produced this Final Report.

Watch the YouTube video of this project in action! https://www.youtube.com/watch?v=EHEKzh_HQiE

Pictured below is a seed herbarium prepared by Sarah Kidd for PSU's education programs. (Project ID: P15AC00582).
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