The Learning Forest

Sharing scientific knowledge on sustainable land management in the Olympic Experimental State Forest and beyond

Issue 7 • Spring 2020

Editorial Board Message

Over the past 25 years, the Northwest Forest Plan and other public land planning efforts have addressed pressing environmental issues, such as preservation of old growth forests and habitat for threatened species. However, although some efforts have been made, the needs of rural communities affected by these decisions have not been fully explored. Many of these communities are experiencing varied and sometimes intense challenges.

Helping these communities will require focusing on more than timber harvest levels, mill jobs, and other economics. To truly make a difference, we need to focus on the overall wellbeing of the community and the surrounding forest. This vision can only be achieved through collaboration and mutual understanding.

In our featured article, we explore what three University of Washington graduate students will do to help achieve this goal. These students will visit rural communities and ask questions about forest use, day-to-day activities, wellbeing, and ways to integrate forest management with recreation, tourism, and other uses. Collectively, they are developing a learning-based collaboration approach that focuses less on what everyone can agree on, and more on nurturing innovative ideas and identifying what we can all learn about together.

Our guest article explores the need for collaboration across different scientific disciplines to address problems that can be seen only at a larger geographic scale. The Coastal Rainforest Margins Research Network lets us know that our outer Olympic Peninsula is a key part of a bioregion that stretches up the coasts of British Columbia and Alaska, and that the coastal rainforest and the northeastern Pacific Ocean are inextricably linked. A current focus of this research network is to identify and fill gaps in the understanding of these rainforests from the perspective of carbon cycling.

Together, these articles help us to realize that we all need to collaborate with an openness to new ideas and with the goal of sustaining ourselves and one of the most beautiful and amazing parts of planet earth: the western Olympic Peninsula and its coastal rainforests.

In this Issue

DNR staff

The Olympic Experimental State Forest, part of the coastal rainforest in Washington State.

Featured Article

Building a Sustainable Future Together

Addressing Rural Ecosystem Sustainability Through Learning-based Collaboration

by Cathy Chauvin, Washington State Department of Natural Resources (DNR), and Courtney Bobsin, Chelsea Midgett, and Bryan Pelach, University of Washington

What is more important, wildlife or people? Habitat or timber harvest? Wilderness or road access? These either/or questions have dominated the management of public lands across the West for many years now. And yet in asking them, we may be missing the forest for the trees.

That is the message of the Washington Rural Ecosystem Sustainability Team, which consists of University of Washington (UW) graduate students Chelsea Midgett, Courtney Bobsin, and Bryan Pelach; UW professor Marc Miller; Olympic Natural Resources Center director Bernard Bormann; representatives from state agencies and non-profits; and community members. The team believes that the wellbeing of the community and wellbeing of the forest are linked. In fact, we should be seeing the forest, the wildlife, and the rural communities and its visitors as a single, interconnected ecosystem (Figure 1). So the question is not whether jobs are more important than habitat, but whether there are sustainable ways to improve the wellbeing of the entire ecosystem.

The team's approach to achieving this holistic vision of sustainability is called "learning-based collaboration." Under this approach, the team collaborates with the community to learn what wellbeing is. With this shared understanding, they work together to generate ideas for potential solutions and develop, implement, and monitor experiments to test their effectiveness. This approach to collaboration can leave more room for creativity than more conventional approaches, in which someone from outside the community suggests solutions and works with residents to find common ground.

This article is primarily focused on the efforts of the team's graduate students to understand community wellbeing, in terms of what it is, how forest management influences it, how underlying factors affect it, and how it can be measured. In discussing this research, we will be entering the realm of social science and human ecology, disciplines not often associated with natural resource management.

Understanding Wellbeing

Biologists, geologists, and other natural resource scientists collect data from the environment, analyze it, and form conclusions. A social scientist is no different, only their data comes from people.

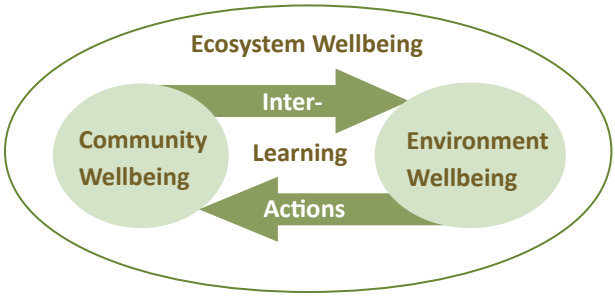

Figure 1. Relationship between community and environmental wellbeing. "Learning" in the center of this diagram denotes the central importance of learning-based collaboration in achieving sustainability.

The Learning Forest is an electronic, biannual newsletter published jointly by the **Washington State Department of Natural Resources** (DNR) and the **Olympic Natural Resources Center** (ONRC).

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Social scientists use quantitative and qualitative research to collect information. Quantitative research involves asking pre-defined questions about specific issues. An example is a social survey: rate your experience from one to ten. Which of the following is important to you, check all that apply.

Qualitative research involves asking open-ended interview questions to gather information on behavior, feelings, attitudes, and knowledge. Interviews can be free-flowing, with one answer leading to more questions. Answers are analyzed to find the patterns that lead to understanding.

Qualitative research is particularly useful when trying to understand community wellbeing. Why? Because community wellbeing involves more than just good jobs or schools; it involves how we feel about our communities, our lives, and our hopes for the future. That is why Chelsea Midget will begin her research with qualitative interviews, first in Forks and then in other rural, natural-resource-dependent communities in Western Washington.

A major focus of her research is social practices. "Social practices are the activities we do every day, such as driving to work, picking up lunch, taking the kids to soccer practices, shopping for groceries, or watching a movie at home," she explained. Each of these individual actions may seem routine and insignificant, but taken together these actions can shape and change a community. "Some practices can build a sense of community, like attending a community gathering," she said. Other practices may have a more detrimental effect; for example, if enough people shop online, stores in the community could close, taking money and jobs away from the local economy.

Chelsea also will explore the underlying forces that are affecting these practices and, by extension, community wellbeing. As an example, if residents say hiking is important to them but no longer take their families hiking, they may perceive the trails as too crowded or their favorite areas may be inaccessible due to a road closure or other issue. Solving these issues could improve wellbeing for these residents.

One social practice that particularly interests Chelsea is tourism. Tourism in Forks is mostly tied to Olympic National Park, but a few years ago, fans of the "Twilight" teenage vampire novels came to Forks in droves to visit the locations featured in the novel (Figure 2). The town responded with Twilight gift stores, tours, and vampire-themed hotel rooms. Chelsea will ask residents how tourism has affected their wellbeing, how they view the potential for future tourism development, and whether they think tourism could influence wellbeing in a sustainable way.

A final component of Chelsea's work will be to develop metrics for how wellbeing can be measured, based on the information she gathers in the interviews. These metrics could be used to quantify how land management decisions affect rural communities and whether measures put in place to improve wellbeing are working.

Mapping the Connection to the Land

Bryan's research takes him to the communities of Moclips, Pacific Beach, and Seabrook in Washington and Pacific City and Tierra Del Mar in Oregon. What all of these communities have in common is local economies tied to recreation and timber harvest in nearby working forests. An interesting aspect of these communities, particularly Seabrook, is their mix of long-time rural residents and urbanites who telecommute to major cities like Seattle or Portland or use their homes as vacation retreats.

For this project, Bryan is interested in "how people use their public lands, what they value and how strongly they value it, and where they go," and how public lands could benefit these communities. He is particularly interested in attitudes toward timber harvest and conservation. In his research, he will use a tool called human ecology mapping.

J. Rubins, Wikipedia Commons

Figure 2. Twilight-related sign in Forks. The Forks Chamber of Commerce has an initiative called "Forever Twilight" to draw more fans to Forks.

Human ecology mapping is designed to capture people's complex relationship to the land in a spatial way. Participants, including community members and visitors, will draw on a map where they go in the forest and what they do when they get there, such as mountain biking, working, hunting, fishing, and so forth (Figure 3). They also will be asked which areas they value the most and why. Maps will be scanned into the computer, brought into a global information system (GIS), combined with existing information such as land ownership and forest conditions, and analyzed.

By showing where activities occur and how much certain areas are valued and for what reasons, the map can be a first step toward accommodating needs and values. For example, the map may help identify opportunities for new land uses that benefit the community. It also could provide insight into how much certain groups are willing to compromise on land use in certain areas, an important consideration when trying to balance multiple and competing needs.

Cathy Chauvin

Figure 3. Participants in Bryan's research will draw on a map where they go in the forest and what they do when they get there.

UW News

Figure 4. Early seral conditions.

Ethnoforestry

Courtney's focus is a type of social practice called "ethnoforestry," which she defines as "using and incorporating the needs and knowledge of the local communities when creating forest management plans." Her geographic area is communities on the western Olympic Peninsula, including Forks.

Courtney is exploring whether community and environmental wellbeing can be improved by increasing the availability of certain plants for personal, cultural, or commercial consumption and use. Not only do these plants help people but, "Deciduous leaves are high in nutrients. They are good browse for deer and elk and enrich the soil as they decay," she explained. Once abundant, these plants can be difficult to find in dense working forests where light is too dim to support them in the understory.

One place where light is not too dim is a recently harvested area (Figure 4). As a pilot project, Courtney will plant beargrass, huckleberry, red alder, trailing blackberry, and fireweed in 25-meter (82-foot) plots within a recently harvested area between Forks and La Push in the Olympic Experimental State Forest (OESF).

Half of these plots will be planted at the density recommended by the Washington State Department of Ecology for site restoration. The other half will be planted at a higher density. All plots also will be planted with Douglas-fir per the reforestation plan for this timber sale. Some of the high- and low-density plots will remain open to wildlife, some will be protected with a wildlife fence for at least 15 years, and some will be fenced for two growing seasons, long enough for the plants to become established. Over time, Courtney will monitor these plots for establishment success and survival, including their use by wildlife.

As part of this project, Courtney will interview residents and tribal members to better understand how they use the surrounding lands and how forest management decisions affect their lives and communities. She will ask which plants people would like to have on public lands in higher volumes. And she will work with local tribes and other stakeholders every step of the way to ensure the project reflects their views, with the goal of "co-producing" information in a project that stakeholders have helped build from the ground up. What is learned through these efforts and the pilot

project will be carried into the ethnoforestry portion of the Large Scale Integrated Management Experiment, featured in our **Spring 2018 issue**.

Looking Ahead

Rural communities that thrived in the logging boom of the 1960s, '70s, and '80s have been struggling with lower harvest levels, low incomes, and high unemployment and poverty levels for more than two decades now. As pressure mounts from climate change and population growth, workable solutions will become harder to find.

In the search for those solutions, learning-based collaboration will give rural voices a much-needed chance to be heard. The more that land managers know about the people who are affected by their policies, the better those policies could be. Environmental organizations, forest industry groups, regulatory agencies, and community members will also benefit from understanding what wellbeing is and how communities are linked to the land.

It is not possible to predict whether the solutions we find today will solve the problems of today as well as tomorrow. But the efforts of the Washington Rural Ecosystem Sustainability Team will help us understand each other, which is an important step toward a sustainable future for our rural communities.

For More Information

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Studley, John. (2004). **The challenge of ethnoforestry: The predicament of traditional local forestry practices around Lugu Lake in China**. Trees: Journal of the ITF. 64. 16-17.

About the Principal Investigators

Chelsea Midgett (**cmidgett@uw.edu**) is a Ph.D. student in the School of Environmental and Forest Sciences at the University of Washington with a background in sustainable tourism research and management. She is currently working on a dissertation exploring social practices and resident perceptions in natural-resource-dependent communities on the Olympic Peninsula, with a focus on the implications for rural ecosystem sustainability.

Bryan Pelach (**bpelach@uw.edu**) is a Ph.D. student in the School of Environmental and Forest Sciences at the University of Washington with a background in fisheries enforcement, watershed restoration, and coastal zone management. His research examines how rural infrastructure and environmental policies impact the industrial, social, and recreational sustainability of coastal communities and ecosystems.

Courtney Bobsin (**cbobsin@uw.edu**) is a Ph.D. student in the School of Environmental and Forest Sciences at the University of Washington. She is working on a dissertation on ethnoforestry that implements new approaches to forest management to enhance ecosystem wellbeing on the Olympic Peninsula. She studies how understory plant species installed in recently harvested areas can provide plant material to local communities and habitat for wildlife, and enhance forest structure.

You are Invited to Participate

The Washington Department of Natural Resources (DNR) and the Olympic Natural Resources Center (ONRC) invite researchers and stakeholders to participate in research, monitoring, and other learning activities in the Olympic Experimental State Forest (OESF). Contact Teodora Minkova at teodora.minkova@dnr.wa.gov or Franklin Hanson at fsh2@uw.edu. Information on past and current projects in the OESF can be found at this **link**.

Guest Article

Growing the Community of Science

The Coastal Rainforest Margins Research Network

by David Butman, University of Washington

The Pacific coastal temperate rainforest (PCTR) that stretches along the Pacific coast from Oregon north to British Columbia and into southeast Alaska is one of the most carbon-dense forested ecosystems in the world (Figure 1). For many policymakers, the ability of these forests to sequester carbon makes them an important tool in the fight against climate change. There is much we do not know about the flux and forms of carbon in these ecosystems, however, and our need for this understanding is becoming more urgent as the effects of climate change become more clear.

That urgency was a driving force behind establishing the **Coastal Rainforest Margins Research Network**. With this research network, we have created a community of scientists who are focused on identifying gaps in the scientific understanding of the PCTR from the perspective of carbon cycling. Scientists come from the University of Alaska, the University of British Columbia, the Hakai Institute, the University of Colorado, and the University of Washington. The research network also includes scientists and resource managers who work within the PCTR. Funding for the network is provided by the **National Science Foundation**, through a program designed to create and support networks for collaborative dialog and scientific analyses to fill gaps in our collective knowledge of a topic.

What unifies this research network is the notion that the PCTR, although well-studied to understand how to grow productive forests, has not been recognized as a system that contributes carbon and nutrients that support estuarine and coastal ecosystems, or coastal margins.

Research by Neal, Morrison, and others shows that streamflow from more than 1,000 small, coastal watersheds from the Olympic Peninsula northward to southeast Alaska represents up to 30 to 40 percent of the total freshwater that flows into the northern Pacific Ocean. It is a remarkable fact that 43 percent of the freshwater discharged into coastal waters drains only 15 percent of the total watershed area presented in Figure 1. The total volume of water can exceed the annual volume of the Mississippi River.

When it comes to carbon, research by Stackpoole and others shows that small watersheds within the PCTR can export from the terrestrial system up to .75 tons of carbon from every hectare, each year through

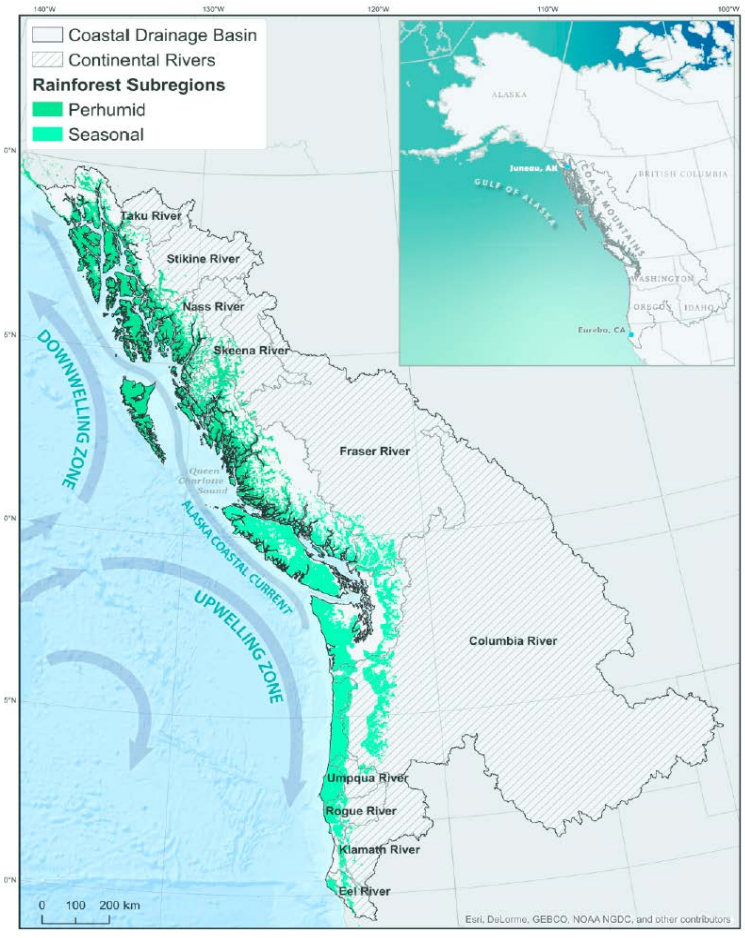

Figure 1: Perhumid (ever-wet) and seasonal Pacific coastal temperate rainforest range along the northwest coast of North America. Major coastal currents and watersheds are highlighted (reprinted from Bidlack et al. 2020 – Bioscience in review).

streams and rivers. This carbon either flows out to our coast, or is consumed within the stream network and respired back to the atmosphere as carbon dioxide (Figure 2). To put this in context, D'Amore and others with the U. S. Geological Survey estimated in 2016 that net ecosystem production, which is primary production (plant growth) minus respiration (metabolism of organic matter by plants, bacteria, fungi, and animals), can reach 3 tons of carbon per hectare annually in some watersheds. Taken together, these studies suggest that the loss of carbon from land into streams and rivers can approach 38 percent of the estimated uptake of carbon within the landscape. In short, far more carbon is being lost from these systems through natural processes than we realize.

> Far more carbon is being lost from forested ecosystems through natural processes than we realize.

These studies show that natural resource managers who incorporate carbon sequestration in their adaptive management programs need to account for carbon at the whole-ecosystem scale. If they lack an understanding of each pathway of carbon uptake and loss, and only look at above-ground biomass accumulation, they may overestimate carbon sequestration.

The research network has started to piece together the state of the science on carbon stocks, forest regrowth, nutrient fluxes, and connectivity to coastal systems, as well as the potential impact of both climate- and human-induced changes to the forest. To date, we do not have enough data to show the variability in the loss of carbon through streams and rivers, but we are beginning to feel confident that hydrology is critical to understanding the role of these forests in the cycling of carbon.

Since the start of the research network, a few studies have been performed to collect data on the movement of carbon from land through aquatic systems. An example is a study done by University of Washington (UW) graduate Roxana Rautu. Working with Teodora Minkova of the Washington State Department of Natural Resources, Bernard Bormann of the UW's Olympic Natural Resources Center (ONRC), and myself, Roxana and her small team of undergraduates from ONRC's summer intern program spent time in both the dry and wet seasons in the Olympic Experimental State Forest (OESF). Our purpose was to collect the data necessary to understand how local hydrology may influence our understanding of carbon loss through streams and rivers (Figure 3 on p. 8).

The study excluded large materials like leaves and logs and focused instead on dissolved organic carbon, or the portion of organic carbon that passes through a 0.45 micron filter. In most stream and rivers, carbon dissolved in water makes up a large portion of the total mass of carbon that is exported out to coastal systems each year. Results suggest that for carbon flows, total precipitation and time of year matter. As more water moves through the landscape in fall and winter, more carbon moves from soils to stream environments. Results also suggests that as soils become more saturated and connected to stream systems, there is a

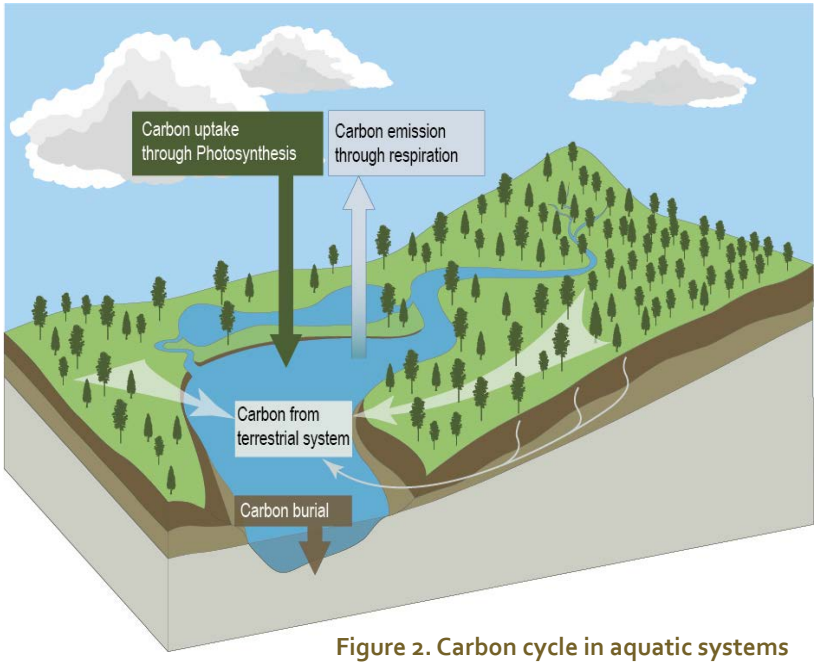

Figure 2. Carbon cycle in aquatic systems

Organic and inorganic carbon, including dissolved carbon dioxide (CO_2), enters the aquatic environments from the terrestrial system. Some organic carbon is sequestered through photosynthesis, and some particulate non-organic carbon is sequestered in sediment. Carbon is released back to the atmosphere through respiration. Drawing adapted from the **Second State of the Carbon Cycle Report, Chapter 14**.

large enough source of carbon to move into the stream environment to exceed any effect of dilution. The more water that is added, the more carbon that is lost from land to streams and rivers.

This study was a first step in understanding the role that watershed export plays in the context of carbon uptake across the OESF and the Olympic Peninsula. We also need to understand how both natural disturbance and forest management affect the form and magnitude of carbon and nutritive flows. These understandings are critical, particularly because research suggests that winters will become wetter and summers drier due to climate change.

By establishing the research network, we have created a community of scientists to address these issues. What remains to be developed are the connections between people and the land in the context of ecosystem processes. When ecosystem scientists come together without all stakeholders, those stakeholder's needs and perspectives can be lost, creating barriers to sustainable management of natural resources. We need the engagement of people who rely on these resources for their livelihood to help us build a collective understanding of how to think holistically across such a large domain.

For that reason, our fifth and last workshop, currently under development, will expand our community to include key stakeholders (text box, right). In the workshop, we will share the collective results of our scientific activities so we can speak as one voice to help inform holistic management decisions.

We invite anyone interested to sign up for our email list, partake in our monthly webinars, and help us build this community into the future.

Roxanna Rautu

Figure 3. UW student Esaac Mazengia measures stream flow using a flow meter.

Annual Workshops

The Coastal Rainforest Margins Research Network was awarded funding by the National Science Foundation for five annual workshops to synthesize knowledge and address information gaps regarding the flux of water, carbon, and nutrients from coastal watersheds to nearshore marine ecosystems. Workshops are attended by a select group of hydrologists, aquatic biogeochemists, and other specialists.

The fourth annual workshop was hosted by the University of Washington's Olympic Natural Resources Center in Forks. The leadership committee decided that the best approach to think about our rainforests was to imbed within them, at the wettest time of year, so the workshop was held in January 2020 amid near-record-breaking snowfall. The topic of our meeting in January was "Temperate Rainforests as Carbon Sinks and Sources: The Role of Disturbance and Land Change." Visit our **website** for more information. The fifth and final workshop is under development.

For More Information

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About the Author

David Butman (**dbutman@uw.edu**) is an ecologist and biogeochemist whose research focuses on freshwater environments. In particular, he examines the influence of humans on climate and carbon cycling and water quality. David is part of the University of Washington Freshwater Initiative, an interdisciplinary research program that explores ways to measure, quantify and understand the impacts of climate, land use, and management of water resources.

Project Updates

Cable-assisted Logging Experiment

As described in our **Fall 2019** issue, cable-assisted or "tethered" mechanized harvesting is rapidly being adopted by forest industries in the Pacific Northwest and the Intermountain West. In this project, researchers from Oregon State University (OSU) will compare this system to manual tree felling with cable yarding in the Olympic Experimental State Forest (OESF). Results from this study and other OSU experiments in Oregon and Montana will be used to develop best management practices and provide outreach to operators, land managers, and agencies on meeting **Sustainable Forestry Initiative, Inc.** (SFI) and regulatory requirements for timber falling and extraction.

The Washington State Department of Natural Resources (DNR) recently teamed with OSU and the Washington SFI implementation committee to apply for an SFI community grant. The $10,000 grant was awarded for a 12-month period to conduct community outreach and education in the local community about cable-assisted logging. Examples include development of training materials that include best management practice guidelines, a workshop, an article in this newsletter, a webinar as part of DNR's training program, presentations at conferences, and talks with interested SFI implementation committees across the western United States and Canada.

This project was one of **10 selected** from 56 grant proposals submitted from across North America. For more information, contact Teodora Minkova at **teodora.minkova@dnr.wa.gov**.

Soil Resampling for the Long-term Ecosystem Productivity Study

Brittany Johnson

Soil sample

The Long-term Ecosystems Productivity study is an experiment to evaluate the effects of harvesting, woody debris retention levels, and plant species on tree and soil productivity; soil carbon, nutrients, and structure; and plant species diversity. The project began in 1995 with funding provided by the U.S. Forest Service Pacific Northwest Research Station, Western Washington University, and DNR. The study is replicated in three experimental sites in Oregon and one site in the OESF.

One aspect of this study is to evaluate the growth of successive rotations of alder between widely spaced, large second-growth conifers. This approach will be integrated into one of the experimental strategies in the **Large Scale Integrated Management Experiment**.

Brittany Johnson, Assistant Professor of Soils at the University of Washington (UW), oversaw re-sampling of soils on the Hebo site in coastal Oregon. Previous soils samples from this site were collected in 1995.

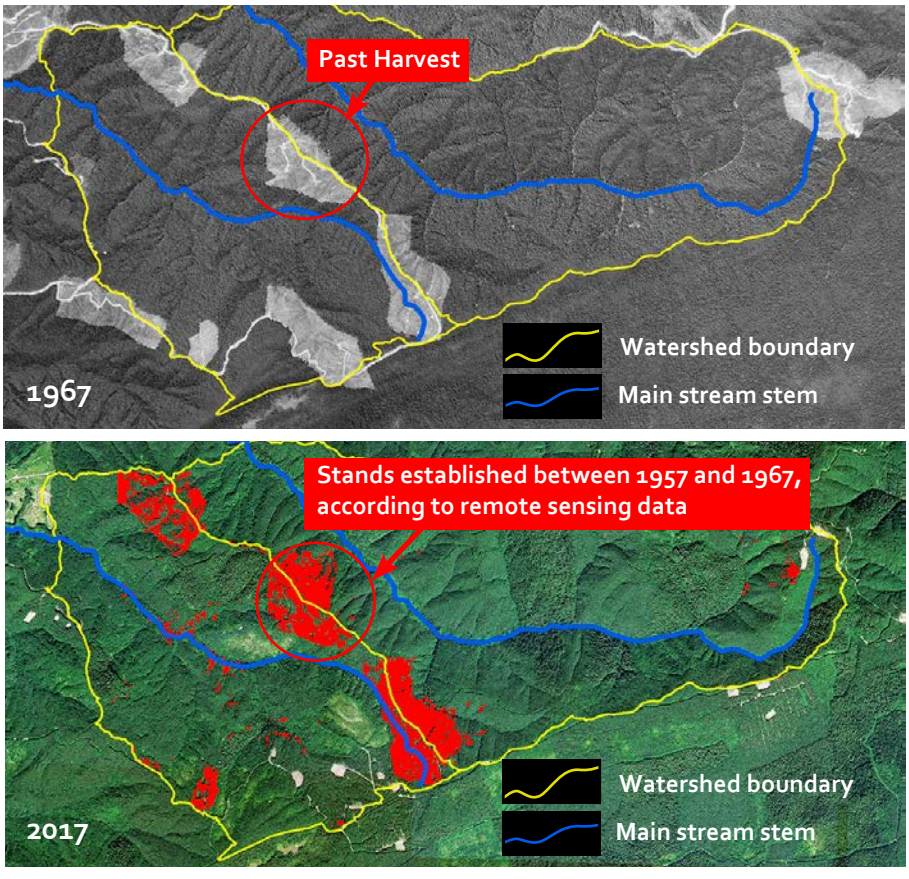
Field work was completed by UW interns in summer 2019, and soil processing and analysis continue in Brittany's UW lab. For more information, contact Brittany Johnson at **envsoils@uw.edu**.

Historic Drivers of Pre-treatment Conditions on the Large-Scale Integrated Management Experiment

This project involves characterizing the historic environmental conditions and management history of the 16 watersheds in the OESF that were selected for experimental treatments as part of the Large-scale Integrated Management Experiment. These findings will help researchers understand current (baseline) conditions and interpret environmental responses to the experimental manipulations that will occur in these 16 watersheds. The project is being conducted by the UW Olympic Natural Resources Center, with funding from the U.S. Forest Service Pacific Northwest Research Station and assistance from DNR.

Researchers are using a combination of historic and recent aerial photos, satellite images, LiDAR data, historic maps, and operational records to identify the location and timing of past management activities such as timber harvest and road construction, as well as past natural disturbances such as windthrow, landslides, debris flows, and wildfire. (LiDAR data is remote sensing data collected using a laser mounted on an airplane.)

In 2019, the research team analyzed satellite (LANDSAT) photos dating back to 1972 to create polygons of past harvest. As well, DNR's photogrammetry department provided photographic negatives of several historic aerial photos dating back to 1960s (below). These high-resolution negatives were digitized and georeferenced (associated with locations in physical space) for future analyses. The research team also interviewed DNR foresters who were active on the Olympic Peninsula in the 1970s and '80s to learn more about historical operations and the evolution of management. A geodatabase is currently being assembled in ArcGIS for future spatial analyses. For more information, contact principal investigator Bernard Bormann at **bormann@uw.edu**.



Two watersheds, 50 years

These photos show the same watersheds at different points in time. The watersheds are located within the Clearwater Landscape of the OESF, near Queets.

DNR's forest inventory group estimates stand establishment dates using remote sensing data. Then, they validate and narrow this estimate by comparing recent to older aerial photos.

Recent Publication

Paired Air-Water Annual Temperature Patterns Reveal Hydrogeological Controls on Stream Thermal Regimes at Watershed to Continental Scales

Journal of Hydrology, April 2020

Zachary C. Johnson and Brittany G. Johnson, University of Washington; Martin A. Briggs, U.S. Geologic Survey Connecticut, Warren D. Devine and Teodora V. Minkova, Washington Department of Natural Resources (DNR); Craig D. Snyder and Nathanial P. Hitt, U.S. Geological Survey, West Virginia; Danielle K. Hare, University of Connecticut

Researchers compared water and air temperature datasets from the Olympic Experimental State Forest to that of Shenandoah National Park in Virginia and to a U.S. Geological Survey dataset spanning the contiguous United States. The authors identified local (within watershed) and regional stream temperature patterns and demonstrated that water and air temperature signals can be paired to refine the assessment of annual thermal regimes. The analysis showed that watershed processes, particularly shallow to deep groundwater, are important influences on stream temperature.

Results can help researchers use readily available data to predict whether water will be cool enough for cold water-adapted aquatic species at spatial scales that are ecologically relevant and relevant to management.

Upcoming Events

Scotch Broom Ecology and Management Symposium Washington State Invasive Species Council

June 2-4, 2020, 11:00 AM to 2:00 PM | Webinar

This symposium will bring together natural resource managers, scientists, and researchers to discuss new and best practices of scotch broom management. There is no cost to attend, but registration is required. Visit **their website** for more information.

Annual Olympic Experimental State Forest (OESF) Science Conference

Rescheduled: October 21, 2020, 8:30 AM to 4:00 PM

Rainforest Arts Center, Forks, Washington

Due to COVID-19 concerns, the annual OESF science conference was postponed from April 28, 2020 to Wednesday, October 21, 2020. More detailed information will be posted on the **OESF website** this summer.

Featured Photo

Chelsea Midgett

Improving collaboration between agencies and stakeholders

In 2019, the Olympic Natural Resources Center (ONRC) led a workshop focused on improving collaboration between stakeholder groups on rural ecosystem sustainability initiatives. Representatives of state and federal agencies, tribes, conservation organizations, and universities discussed how to meet the needs of people and forests.