

Western Sustainability Report



FY 2019 Report

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Western Sustainability Report FY 2019

Preface

The 2018-2019 Western Washington University Sustainability Report provides a synopsis of some of the many forward-thinking initiatives, plans, and projects created by the faculty, staff, and students of the university in the past academic year. The four pillars of sustainability presented in the Sustainable Action Plan in 2018—Ecological Protection, Economic Fairness, Human Health, and Social Equity—are now widely understood on campus as the foundational elements of Western’s work, and are intertwined throughout these endeavors.

Western is striving to create a more sustainable community, and this report highlights our progress across four university arenas: Academics, Operations, Engagement, and Planning & Administration. Each of these four categories incorporates goals presented by the ten chapters of Sustainability Action Plan. Through these multiple lenses, the intersectionality of the full spectrum of sustainability issues is understood.

Executive Summary

Academics

- The Salish Sea Institute introduces a minor in Salish Sea Studies
- Four New Programs of Study Explore Sustainability
- New courses offered in 2018-2019 Academic Year
- University-wide Educational Lectures in 2018-19

Operations

- Western Leads Peer Institutions in Sustainable Energy Use Indicators
- Western Recognized as “Top 10” Performer in Carbon Reductions
- Smart Water Management comes to Western

Engagement

- Western Reads Selects ‘Octavia’s Brood’ for 2018-2019 School Year
- WWU Completes Flood Risk Study of Stanwood's Lowlands
- WWU, City, and County Collaborate on Disaster Awareness and Preparedness Survey
- Western Researchers Evaluate the Carbon Content in Eelgrass Meadows in Skagit County

Planning & Administration

- WWU Receives \$1 million NSF Grant to Support Low-Income Engineering Students
- Human Resources, the LGBTQ+ director, and the Equal Opportunity Office Post New Information to support transitioning employees
- New Feeding Western Program Initiated
- Sustainability, Equality, & Justice Fund Grant Awards

Western's work in 2018-2019 can be summarized across the ten areas of activity presented by the Sustainable Action Report. The report provides the framework for promote and assess sustainability measures for every department on campus. The following represents some of the activities that progressed goals of these ten chapters:

Chapter One: Campus and Community Engagement

- Western Reads Selects 'Octavia's Brood: Science Fiction Stories from Social Justice Movements'
- WWU, City, and County collaborate on first-ever Disaster Awareness and Preparedness Survey

Chapter Two: Student Life

- Western Initiates New Feeding Western Program

Chapter Three: Transportation

- Faculty and Staff Can Now Have WTA Bus Passes on Western ID, Reducing Waste
- Western Doubled the Amount of Bicycle Lockers on Campus due to Increased Demand

Chapter Four: Waste

- Five new big belly waste stations were added to the four already on campus.
- Move-out Madness collected over 300 items and salvaged 800 yards of materials.

Chapter Five: Curriculum and Research

- The Salish Sea Institute Initiates a New Minor in Salish Sea Studies
- Four New Programs of Study to Engage Sustainability are Introduced

Chapter Six: Built Environment

- Western Recognized as "Top 10" Performer in Carbon Reductions
- Smart Water Management Implemented on Campus

Chapter Seven: Dining Services

- 1,800 Pounds of Surplus Food Were Donated to Local Charities.
- 19,000 Pounds of Used Fryer Oil were Recycled into Bio-Fuel
- All Straws on Campus are Now Compostable, and All Coffee Stir-Sticks are Now Wooden

Chapter Eight: Grounds

- Three new pieces of electric outdoor equipment replaced gas-powered equipment.
- We are currently introducing a new weed removal product called 'Weed Slayer'. An environmentally safe alternative to Glyphosate.

Chapter Nine: Procurement

- A New Shop-Local Initiative was Launched to Showcase Local Vendors in Our Marketplace
- A Water Bottle Filling Station was installed at in Procurement Offices at 32nd Street.

Chapter Ten: Investments

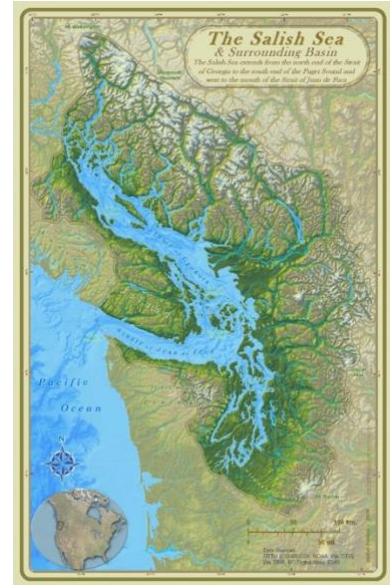
- Western Foundation Selects New Fund Manager

ACADEMICS

Sustainability initiatives are found throughout every colleges' academic curriculum at Western. There are over 100 faculty members across the full spectrum of academic disciplines currently engaged in one or more pillars of sustainability through their coursework and research. This work impact every facet of our community. Here are some selected highlights from 2018-2019:

Salish Sea Studies: a new curriculum of study

The Salish Sea Institute established the place-based and multidisciplinary Salish Sea Studies curriculum, leading to a minor in Salish Sea Studies, in 2018 to introduce students to the complex ecologies and human experiences of the Salish Sea region. The Salish Sea includes the Georgia Basin, Puget Sound, the San Juan and Gulf Islands archipelago, and the Strait of Juan de Fuca. As an international body of water, the Salish Sea is governed by federal, state, provincial, municipal, and treaty laws and regulations. The name of this transboundary sea reflects the long history of the Coast Salish peoples who have lived on the shores of the Salish Sea since time immemorial. Over eight million people now share this landscape with a diverse ecosystem, including orca whales, the giant Pacific octopus, five species of salmon, herring, puffins, kelp, sea stars, and cedar trees. Many species are threatened and endangered due to human impacts on the ecoregion.



The Salish Sea Studies curriculum offers students a unique opportunity to understand transboundary governance structures and tribal sovereignty in the context of the greater ecosystem. Developing a deep knowledge of this place from environmental, cultural, and historical perspectives will prepare students to work collaboratively across multiple jurisdictions, sectors, and perspectives in a range of professions, including in public service and government, industry, and nonprofit organizations. The Salish Sea Studies minor offers a place-based complement to other majors and minors, including environmental science and policy, marine sciences, international business, anthropology, history, political science, communications, and education.

Four New Programs Provide Western Students with Fresh Opportunities to Engage Sustainability

- **Education for Inclusive Environments, BAE:** Educators require a broad understanding of the fundamental right and value of including all children from a variety of backgrounds; including, but not limited to, socio-economic status, language, ethnicity, and ability. This major and professional training program focuses upon educational inclusion for our nation's increasingly diverse population.
- **Women, Gender, and Sexuality Studies, BA:** The new Women, Gender, and Sexuality Studies (WGSS) program engages interdisciplinary research and teaching to analyze the formation of sex, gender, and sexuality as they intersect with race, class, ethnicity, nationality, religion, age, and ability. It also encourages theory and praxis that critically considers global and local communities in efforts to revise, re-envision, and reimagine social change, and provides students with the skills to critically and actively engage with the world around them.

- **Environmental Science — Freshwater & Terrestrial Ecology Emphasis, BS:** This new major program allows Western students to explore the environmental science of freshwater and terrestrial ecology, and provides students with a strong background in chemistry, biology and mathematics.



New Courses Offered in the 2018-2019 Academic Year

In the 2018-2019 academic year Western again offered dozens of new courses to explore critical social, environmental, and economic challenges. Some of the new opportunities to explore issues of sustainability in 2018-2019 included:

- **AMST 252 - Arab American Experience:** An introduction to the Arab migration to the United States, and look at the historical events which led to the migrations and the historical and contemporary incentives for this today.
- **ENRG 140 - International Energy and Environmental Policy:** A framework for thinking about energy usage decisions by learning about sources of energy, energy efficiency standards and economic instruments to control pollution such as cap-and-trade and carbon taxes.
- **ENRG 340 - Energy and Climate in Rural Development:** This course covers issues related to energy, agriculture, the environment, and social and economic development in rural areas of developing countries

- ENRG 466 - Life Cycle Analysis: Life cycle analysis is a powerful tool for assessing the environmental impact associated with all the stages of a product's life from cradle-to-grave to broadly look at environmental concerns and impact on the environment.
- ENRG 475 - Renewable Electric Power Systems: The course will teach the fundamentals of renewable and efficient electric power systems, including basics of electric generation, transmission and distribution as well as distributed generation and renewable sources on both sides of the meter, with an emphasis on solar photovoltaics and wind turbines.
- ESJ 411 - Education and Social Justice: Theoretical and practical foundation of education for social justice, exploring historical roots and the contemporary constructions of social justice issues and traditions as they play out in diverse educational contexts with emphasis on disruption of cultural reproduction of oppression through agency and activism.
- HIST 358 - Women of Color in the U.S: The experiences and struggles of women of color in the United States both historically and today are addressed. In order to understand people in their own terms, students will read primary documents and secondary sources authored exclusively by women of color.
- HIST 392 -Tribal Sovereignty and Washington History: This course examines multiple definitions of tribal sovereignty and the history of tribal sovereignty alongside key themes and developments in the history of the Washington from earliest times to the present.
- PLSC 385 - Nationalism, Genocide and Global Politics: Drawing on paradigms of nationalism, geopolitics, international law/laws of war and political history, students will examine the problem of genocide from the perspective of various global political actors and apply contemporary international and comparative theory.
- SOC 322 - Enslaving Others: This course examines how groups of people across time and space have enslaved their fellow citizens, neighbors, and families, with a focus on historical abolitionist movements, as well as contemporary forms of slavery including sex trafficking, bonded labor, and forced marriage.
- SOC 386 - Environmental Sociology: An introduction to the subfield of environmental sociology, which is concerned with the systematic study of patterned relations between social systems and ecosystems. The course focuses on human behavior, biophysical processes, and their conjoint constitution.
- WGSS 213 - Introduction to Sexuality and Queer Studies: This course introduces students to the interdisciplinary field of Sexuality Studies with a focus on the insights of the field of Queer Studies. Students will draw upon intellectual approaches to sexuality ranging from the arts and humanities to the social and natural sciences.
- WGSS 310 - Race, Ethnicity, and Indigeneity: Examines how race, ethnicity, and indigeneity shape and inform local and global understandings of sex, gender, and sexuality. Students will address intersectional and de-colonial feminist and gender studies and question how settler colonialism and racism impact possibilities and strategies for gender justice.

University-wide Educational Lectures in 2018-19

The World Issues Forum at the Fairhaven College of Interdisciplinary Studies brought a variety of thought-provoking discussions to Western in 2018 and 2019 to encourage an informed and engaged global citizenry. World Issues Forum Speakers in the past academic year included:

- **Silky Shah** of the Detention Watch Network explored the full-on attack on immigrant communities by the current administration—exemplified by the family separation crisis and the “zero-tolerance” policy—and discussed the relationship between immigration policy and the prison industrial complex in the US.
- **Robin Gray** of University of Toronto Mississauga presented a talk titled “Embodied Heritage: Enactments of Indigenous Sovereignty: on the existence of Indigenous nationhood and examples of feasting, land and waterway protection, repatriation and the role that embodied heritage plays in maintaining and reinforcing indigenous law, politics and nationhood.”
- Honduran journalist, artist, and documentary filmmaker **Jennifer Ávila** presented “The Silencing of Dissent: How Freedom of the Press is threatened in Honduras”. She described the resistance to the illegal, and U.S. supported, reelection of Juan Orlando Hernández as President in 2017, and the crimes against humanity committed by his regime since the election.
- **Tim Schwab** of Concordia University discussed “Canadian Documentary in the Global Context.” Incorporating clips from relevant films, this talk will address Canadian documentary practice in the global context and examine the traditional role of documentary to record and reveal human stories and to ‘speak truth to power’ in an increasingly integrated world.
- “How to Stop a Dam with Indigenous Resistance”, by **José Gómez**, dealt with the Association of Communities for Development & the Defense of Land and Natural Resources struggle to protect land and water, cultivate Indigenous identity and leadership, and build community power in the face of harmful corporate and state-led mega-development.
- **Tae-Ung Baik** of the University of Hawaii, an independent expert member of the UN Human Rights Council Special Procedure mechanism, discussed the UN’s efforts to fight against the human rights violations in a talk titled “Enforced Disappearances: Human Rights Norms, Institutions, and Enforcement in Reality”.
- **Sara Uribe** and poet **John Pluecker**, presented “Antígona González: Thinking Through Language, the Body, Writing, and Translation in the Present” a reflection on the poet’s language, the body, writing, and translation at this time in history, and read poems from their book “Antígona González about one person’s missing body in Tamaulipas, Mexico.”
- **Lois Klassen** discussed “Human Mobility / Human Dignity”, an exploration of ethics in the act of representing migration and detention and reviewed the role of cultural producers, including artists and journalists, in the production of meaning during refugee migrations and situations of forced detention.



- In “Storming the Wall: Climate Change, Migration, and Homeland Security”, **Todd Miller** connected the dots between climate change, the displacement of people, and hardening, militarized borders proliferating across the globe.
- **Elisabeth Anker** of George Washington University presented “Climate Change and the Politics of Freedom”, which presented the idea of freedom contributes to climate change, as it insists that people are free to use and control natural resources.
- Attorney **Carlos Spector** examined how extortions, kidnappings, and human rights violations in Mexico by authorized crime displaces Mexican citizens resulting in their fleeing to the United States in search of political asylum and discussed how the U.S. asylum legal framework reinforces the widespread misconception that the Mexican government is able and willing to control organized crime.

The Huxley College Speaker Series brings guest lecturers to WWU to address topics of environmental concern and is intended to bring together environmentally-minded members of the WWU and Bellingham communities. The 2018-2019 Huxley Speaker Series included:

- **Patrick Murphy** discussed how, despite the mounting challenges caused by human-driven climate change, mainstream communication practices have largely constrained action by rendering an oddly depoliticized vision of environmental politics that places people in passive roles. In contrast to these practices, parts of the Global South have recently witnessed the forceful emergence of environmental “transition discourses”, which confront citizens with a radical rethinking of the human relationship with the earth.
- **Tristan Woodsmith** taught about the diverse and important roles played by fungi, Earth's natural recyclers in the environment, their significance to humans, and how fungi can decompose waste, grow gourmet food, and promote environmental restoration.
- **Larry Nielsen** explored the topic Conservationists of the Past, a seminar that told the story of inspirational conservationists of the past like Rachel Carson, Chico Mendes, Billy Frank Jr., and Wangari Maathai, and suggested that if we act with their passion and persistence, we can still achieve a sustainable and beautiful world!
- Drawing on inspiring examples from the Salish Sea and beyond, **Elin Kelsey** offered Wild Contagious Hope by chronicling the spectacular rise of this turn toward hope and why it is so unlikely - and so important - to an increasingly fractured world drowning in doom and gloom.
- **Chris Montero** shared how wolves have returned to Washington State after more than a 70 year absence, and how they bring change not only to our local ecosystems but also to our human culture.
- U.S. Coast Guard Sector Commander Captain **Linda Sturgis** discussed Balancing Safety, Security and Environmental Stewardship in the Coast Salish Region, and highlighted collaboration with the Government of Canada, First Nations, state and local government, NGO’s and the public at large to protect this vibrant and sensitive ecosystem.

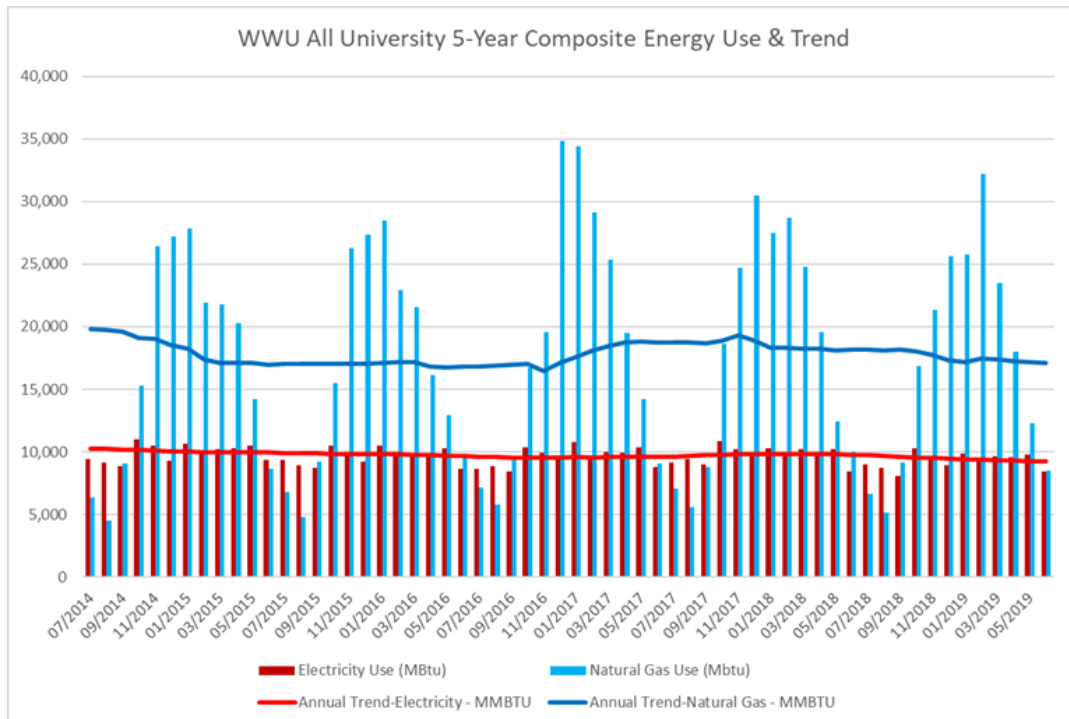
- **Misty MacDuffee** examined immediate and long-term Chinook fisheries management issues that affect Southern Residents and Chinook salmon in the Salish Sea, including the status of Canadian Chinook stocks and the reasons for this status, in a talk titled “Salmon and Orca Recovery in the Salish Sea
- **Valerie Segrest** discussed Muckleshoot Food Sovereignty Project which is mobilizing Northwest Indian tribes to employ concepts of food sovereignty to reclaim their food systems and collectively focus animating a culture of health for future generations. She also shares her experiences connecting her students to traditional foods and plant medicine that nurture our bodies and our revolutionary spirits.
- “What is this Slime in My Water?” by **Robin Matthews** of WWU's Institute for Watershed Studies about the blooms of potentially harmful blue-green algae (cyanobacteria) that have increased in freshwater lakes and how community engagement can improve identification and tracking of toxic blooms.
- **Marcus Reynerson** presented on Mountain Caribou and the Inland Temperate Rainforest of the Pacific Northwest, and shared about his time with the Mountain Caribou Initiative, a visual storytelling collective giving voice to First Nations, scientists, foresters, conservationists, and recreationists attempting to chart a new path forward for one of the most unique ecosystems on earth before it is too late.
- “Wild Nooksack”, presented by **Brett Baunton**, showed the outstanding qualities that make the Nooksack River a unique gem to our region that focused on the beauty, diversity and outstanding qualities that make the Nooksack eligible for a National Wild and Scenic River designation.
- The Intersection of City Planning and Our Health: Integrating Community Design and Public Health by **Paula Reeves**, Healthy Communities Lead for Washington State Department of Health, revealed how design of our communities, housing, transportation infrastructure, and open space, strongly influences human behavior and activity.
- In a talk titled “Changing Ice: Insights from a Decade of Research on Easton Glacier, Mt. Baker” **Doug Clark** discussed the results of two decades of research with Western students and colleagues concerning the dramatic retreat over the past century at Mt. Baker, with an eye towards the implications for the future.

OPERATIONS

Facilities Management was extremely active in 2018-2019 as they work to monitor and manage the campus's energy use. The University's physical throughput includes energy and water use, CO2 and solid waste production, transportation, green building, and other aspects that contribute to the university's physical footprint.

- **Energy and Cost Trends Continue Downward**

This year Western again led regional and national peer institutions in all Sustainable Action Plan key performance indicators. Our energy use and cost trends continued to decline over the previous five-year period, despite new building loads such as Carver and Multi-Cultural Center. Smart academic building scheduling, utilizing usage data, continues to pay dividends in reduced electrical and steam consumption. Total energy reductions include 3.5 million kWh over the past three years (equivalent to the annual use of 275 US homes) and a cost avoidance of \$2.7 million dollars over the past five years. The Energy Cost Index is at a five-year low.



- **Western Recognized as “Top 10” Performer in Carbon Reductions**

The University continues its downward trend for carbon emissions. Western has already seen a 25% reduction in greenhouse gas emissions since 2008 (41k → 31k tons CO₂), and is expecting another ~25% drop within the next year (~21k) with the completion of PSE's windfarm. Western is calculated to be within 4000 MT of Washington state's 2050 goals and is on the way to climate neutrality by 2035 per the Sustainability Action Plan. In 2019, The Association for Sustainability in Higher Education recognized Western as a “top 10” performing institution for climate efforts globally, and is the only US-based, publically-funded institution on the list.

ADD GRAPH HERE – ALSO TO BE INCLUDED IN ENERGY REPORT ADDENDUM

- **Smart water management comes to Western**

A group of Western students and staff utilized the Sustainability, Equity, & Justice Fund to purchase, install, and implement technology created by Apana, a Bellingham-based technology company. This new approach to monitor water-use throughout campus implements cutting edge water management technologies into four new meter locations on Western's Campus, chosen to represent student living and academic facilities. Real time water data collects and organizes useful information to all risk management and conservation decisions. These wireless water meters bring both faster responses for costly leaks and refined conservation data. This pilot is a case study to warrant further adoption across Western's campus as well as other Universities or similar institutions. The system allows students to see the direct conservation impact of their showers length, laundry cycles, and other daily activities.

ENGAGEMENT

Western's operational and academic sustainability endeavors are initiated and developed through goal-setting, collaboration with administration, and outreach to students, staff, faculty, and the greater Bellingham community. Ultimately, this civic engagement is at the center of all of the University's conservation efforts. 2017 highlights in this area include:

- **Western Reads Selected 'Octavia's Brood: Science Fiction Stories from Social Justice Movements' for the 2018-2019 School Year**

Western Washington University selected "Octavia's Brood: Science Fiction Stories from Social Justice Movements" as the Western Reads book for the 2018-2019 academic year. Western Reads is a campus-wide program that serves the university's first year mission by promoting intellectual engagement, community and civil discourse with new students through experiences related to selected texts.



"The Western Reads Selection Committee was drawn to this book for a variety of reasons including the array of authors who contributed to it, the interdisciplinary nature of the issues at the heart of the short stories, and the potential of the speculative fiction genre to open unexpected ways of responding to our current political climate," said Molly Ware, associate professor of Secondary Education at Western and incoming director of Western Reads.

Dedicated to renowned African American science fiction writer Octavia E. Butler, "Octavia's Brood" focuses on the struggle in the quest for change that was central to Butler's work. As such, the stories and essays in Octavia's Brood invite the reader to wrestle with the complexity at the intersection of identity and imagination and to enter the gray areas of race, class, gender, sexuality, militarism, inequality, oppression, resistance and, most importantly, hope central to Butler's writing. Western Reads will use the stories from Octavia's Brood alongside those of faculty, staff, alumni, and students at WWU and various national and international social change leaders to explore questions like: How can we build community for change? How can we envision and create a future that serves all of us? How can we stay engaged and find hope in the face of seemingly insurmountable challenge? Can I really make a difference?

- **WWU completes flood risk study of Stanwood's lowlands**

A yearlong multi-faceted project flood study is completed a city-university partnership in which upper level courses at Western Washington University use applied learning to help the city of Stanwood. The results also educate west Stanwood homeowners by laying out researched options of insurance, flood mitigation and financial help. Stanwood City

Administrator Ryan Larsen said the project was an added resource that might benefit the city's FEMA rating, which could reduce flood insurance costs citywide for everyone.



“The city has these needs and Western has this expertise and the students have this energy to do real work that makes real change,” said Lindsey MacDonald, program coordinator of Sustainable Communities Partnership. “For students it’s so rewarding to apply the theories that they’re learning in the classroom to the real world.”

WWU undergraduate student Nyla Thursday was the point person on this project that started last June. In August of 2018, students measured ground floor elevation of the homes in west Stanwood. They recorded the height and type of each building’s foundation and year of construction. Finally, the students went door to door to interview building owners to add information about their flood insurance and mortgages.

After analyzing data and working with city staff, Thursday started building the foundation of an interactive web map layered with details for individual properties, flood risks and how owners can prevent or mitigate damage with estimated costs. “The map is a community education tool for flood risks. It goes into detail of flood history, insurance, elevation and mitigation techniques,” Thursday said. She said all the information was incorporated this spring into a class in which another student team is working on a website where community members can explore the FEMA community rating system.

The Center for Economic Business Research at WWU added to the effort by exploring financial options for flood mitigation. They found how much on average it costs to elevate buildings, or to vent them so that powerful flood currents can flow through rather than displace the house. Other retrofits include raising ground-floor electrical outlets above flood levels. “Every house can be so different for how things cost,” Thursday said, adding that it pays to know what a retrofitting project is worth, and what grants or low interest loans are available.

- **WWU, City, and County collaborate on first-ever Disaster Awareness and Preparedness Survey**

Western Washington University's Resilience Institute partnered with the City of Bellingham Office of Emergency Management and the Whatcom County Sheriff's Office Division of Emergency Management to launch a disaster awareness and preparedness survey in Whatcom County.

Every year for the next three to five years, WWU students will survey residents about their household and community preparedness as part of a spring quarter course on disaster risk reduction planning. Students will also examine the risk awareness and preparedness of specific neighborhoods, groups, and service providers. As the project progresses, the data

they collect will be used to improve community outreach and preparedness for earthquakes, floods, fires, storms and other significant disasters.

The survey teams will survey different areas of the city and county each year by going door to door to ask residents to participate. This method will establish baseline awareness and preparedness and evaluate changes over time. Progress in increasing awareness and preparedness from this survey will be evaluated through year-over-year comparisons of results.



This project is supported by Western Washington University's Sustainable Communities Partnership, which focuses the energy and ideas of faculty and students upon the issues that communities face as our society transitions to a more sustainable future. SCP facilitates a program in which Western courses complete community-engaged learning projects that address problems identified by the partner.

- **Two recent studies by researchers at Western Washington University evaluated the carbon content in eelgrass meadows in Skagit County.**

The slender green leaves of eelgrass that sway in the waters of Padilla, Samish and Skagit bays are widely recognized as key habitat for species including salmon, crab, and great blue herons. Eelgrass meadows are also starting to be seen as sources of "blue carbon" — carbon found in plants and sediment in coastal habitats that if released as carbon dioxide could contribute to climate change. An effort is underway to document how much blue carbon coastal habitats, including those along Skagit County's shoreline, are capable of holding.

Understanding what's there and how fast it can accumulate is the first step toward encouraging preservation and restoration of coastal habitats to help limit the world's greenhouse gas emissions, according to scientists, government agencies and restoration advocates. "We're trying to reduce our greenhouse gas emissions generally across the world and how we manage forests, grasslands is an important part of our climate change mitigation strategy," Blue Carbon Initiative co-chair Steve Crooks said. "How we manage our coastal wetlands is also an important part of the equation."

The initiative is a group of scientists and policymakers from throughout the world who are evaluating the role of coastal areas in mitigating climate change. Its members include local scientists from the Padilla Bay National Estuarine Research Reserve and Western Washington University. In 2018 and 2019 studies by researchers at Western Washington University evaluated the carbon content in eelgrass meadows in Skagit County.



One published in November in the research journal Northwest Science focused specifically on a portion of Padilla Bay, which is the site of the largest eelgrass meadow in the Salish Sea. That study was authored by Western Washington University Research Associate Katrina Poppe and Professor John Rybczyk. The other, a master's thesis completed by student Mira Lutz in August, examined Padilla, Samish and Skagit bays. Both studies concluded that even healthy eelgrass meadows such as those found in Skagit County are less effective at holding carbon than other coastal habitats, such as salt marshes and those where tropical mangroves are found.

Restoring the entire area where the Snohomish River meets Puget Sound could capture about 9 million tons of carbon dioxide over 100 years, according to the resulting study that was published in 2014. That's the equivalent in greenhouse gas emissions of removing 1.7 million cars from the road for a year.

"In the race to lessen the damage of climate change, the nation's estuaries are a powerful ally," the National Oceanic and Atmospheric Administration's Office for Coastal Management wrote in a summary of blue carbon research including that done in Padilla Bay. Coastal environments, including the eelgrass meadows in Padilla Bay and the salt marshes in the Skagit River delta, hold onto material that otherwise — through the decomposition process— would become carbon dioxide released into the atmosphere.

- **WWU's Leo Bodensteiner Working to Solve the Puzzle of the Skagit River Steelhead**

There comes a time in the life of every young coastal rainbow trout when a combination of factors – genetic makeup, water conditions, its current health and size, and more – cause it to ask itself one very important question: To go to sea, or not go to sea?

Those that opt to leave the river systems of the West and head out into the Pacific, become steelhead, and eventually become jumbo-sized rainbow that weighs 4 to 5 times that of its river- and lake-dwelling kin. The question of how and why a rainbow trout makes that decision

to go to sea or stay home lies at the heart of the research of Western Washington University Professor of Environmental Sciences Leo Bodensteiner.

Not surprisingly, steelhead have long been prized as a food source by the region's Indigenous peoples as well as premium target of recreational and commercial fishers from Southern California to the Aleutian Islands. But dams, habitat loss, and warming river temperatures have caused a decline in steelhead numbers up and down the West Coast.



“Trying to forecast what the next year’s steelhead numbers on the Skagit will be always involves a huge amount of supposition, because of the fish's complex life history,” he said. At the heart of the matter lies the ambiguity in the relationship between the rainbow and the steelhead. Understanding how young rainbows on the cusp of making that all-important life choice live in the Skagit’s tributaries is part of Bodensteiner’s research.

In 2018, he and a number of undergraduate students from Western sampled stretches of a number of tributaries of the Skagit and implanted Passive Integrated Transponder (PIT) tags in juvenile rainbows that were identified as potential steelhead. They then tracked the rainbows using the transponder tags to examine their behavior before they went to sea.

Bodensteiner said getting a better understanding on what the young fish are doing using the PIT tag and examining the life history of the adult fish will provide a more accurate way to forecast returning steelhead numbers and help allow those numbers to rebound. “That is certainly the goal of all the organizations involved in this work – more steelhead in the Skagit, over the long term,” he said.

PLANNING & ADMINISTRATION

- **WWU Receives \$1 million NSF Grant to Support the Success of Low-Income Students in Engineering**

Western Washington University's Engineering and Design Department has been awarded a five-year, \$1 million S-STEM grant from the National Science Foundation to help low-income students in their pursuit of a bachelor's degree in one of the three Engineering programs at WWU.



The program, entitled “Becoming Engaged Engineering Scholars (BEES)” aims to address challenges in recruiting and retaining academically-talented, low-income students from diverse backgrounds into the undergraduate engineering programs. The BEES program, coordinated by WWU Engineering faculty members Andy Klein and Sura Al-Qudah, will provide scholarships of up to \$10,000 a year to about 48 students over the life of the five-year program.

In addition, about one-third of the NSF grant will be used to implement and study a sequence of academic, social, and career support structures specifically designed to enhance the success of low-income engineering students, said Al-Qudah.

“What we want to do is level the playing field for all our students, and put a system of support in place to improve retention of first- and second-year students from low-income backgrounds so they can succeed at the same rate as other students,” she said.

Al-Qudah said the decision to apply for the grant was a reflection of the importance the department is putting on equity and inclusion through its three engineering disciplines of Electrical Engineering, Manufacturing Engineering, and Plastics and Composites Engineering. “We want as diverse a group of students as possible,” she said. “We are working to make it clearer that our doors are open to students from different groups and backgrounds, because we know what diversity of thought and experience brings to a campus, and how important that is.”

- **Western HR, the LGBTQ+ director, and Equal Opportunity Office post new information to support transitioning employees**

Western renewed its commitment to fostering a workplace culture that is welcoming to employees of diverse backgrounds, identities and experiences by advancing its policies to include transgender employees. The new Guidance to Support Employees Transitioning in the Workplace articulates Western’s expectations for supporting employees who undertake a gender transition while employed by the university. It is intended to serve as a resource for transitioning employees, as well as their supervisors, coworkers, and relevant leadership. By following the relevant policies and guidance set out in this document, supervisors and leadership can help ensure a safe, welcoming, productive and discrimination-free work environment for all Western faculty and staff.



- **New Feeding Western Program Initiated**

Food insecurity is an issue on campuses around the world, but in 2018 Western students, faculty, and staff initiated a new program to combat it. Feeding Western is a new program on campus dedicated to serving and building capacity for students experiencing food insecurity. Coordinated by an Americorps VISTA member, Feeding Western provides more access to food resources so that students can stay focused on school. Some projects that Feeding Western worked on in 2018-2019, in collaboration with other campus entities, include:

- Developing and supporting a network of campus food pantries
- Creating the Swipe Out Hunger program, which allows students to donate unused meal-plan credits (swipes) to students without access to Western dining halls
- Initiating the Associated Students Food and Housing Insecurity Committee
- Hosting events to increase awareness around college food insecurity



In a recent undergrad exit survey, 71% of respondents reported that they skipped meals or cut the size of meals due to lack of money for food. In the same survey, 37% reported that they lost weight due to not having enough money for food. Feeding Western is one way that Western is working to combat this issue and help students focus on academics.

- **WWU Foundation Announces Selection of New Investment Manager**

The Western Washington University Foundation selected Russell Investments to provide investment oversight for its \$85 million endowment. Every five years, the Foundation engages in a robust process to review the performance of its current investment manager and to request proposals from other firms qualified to guide the investment decisions of the portfolio. This year, one of the main areas of evaluation was around sustainable investing using ESG criteria (environmental, social and governance). The Foundation made sustainable investing a main priority, and spent a great deal of time looking at each firm's ability to provide sustainable investment solutions.

"Russell presented a great ESG solution that was clear, scalable and impactful," said Stephanie Bowers, president and CEO for the Foundation. "Russell believes in the potential of ESG and we are pleased to be able to partner with them for the future."

The Foundation was also pleased to include students from the WWU Students for Renewable Energy club in this year's selection process. Student participation was the result of over two years of relationship building between members of SRE and the Foundation.

"Our students brought a thoughtfulness and professionalism to this process that was just outstanding," said Mark Brovak, vice president and CFO for the Foundation. "We were really proud to have them participate in this process. They clearly did their homework and knew what aspects of each firm they preferred. We were also pleased that Russell was at the top of their list as well."

Sustainability, Equity, & Justice Fund

Western's Sustainability, Equity, & Justice Fund Program had a recording-setting 2018-2019 academic year, thanks to creative outreach and an expansive understanding of how sustainability, increasing outreach, funding student proposals, and improving our campus and community's sustainability, inclusivity, and fairness.

- Thirty-three projects were approved for funding
- Fifty-four applications were developed over the course of the academic year.
- Over four hundred students participated in SEJF activities
- The SEJF grant process was utilized in curriculum in four Western courses.

A sample of the projects funded in 2018-2019 include:

- **CSE Ambassadors:** Students in the College of Science and Engineering created a cohort to provide communications Departmental Ambassadors to engage in conversations and meetings with department chair, interested faculty or staff, the Dean of CSE, and CSE Student Senators about how to improve the college's environment and services.
- **Diversity Conference:** Students put together a trip to Atlanta to explore the roots of the Underground Railway, the Civil Rights Movement, and intersectional identities to help advance the campus diversity and inclusion.

- **Science Positions for Change Diversity and Undergraduate Research Positions:** The Coastal Communities and Ecology Lab project created several undergraduate research positions, with an emphasis on providing high impact research based experiences for undergraduates from underrepresented groups within STEM fields.
- Western’s Art Department brought artist and biologist **Brandon Ballengée** to Bellingham to share transdisciplinary artworks inspired from his ecological field and laboratory research into amphibians, birds, fish and insect species.
- **WOHESC Scholarships** allowed twenty-one Western students to the Washington-Oregon Higher Education Sustainability Conference at the University of Washington to discuss issues of social justice, environmental education, food security, carbon emissions and link up with other student advocates from across the state and potential employers for future internships and jobs.



Summary

During the 2018-2019 Academic year Western Washington University nurtured community collaborations, created new educational programs, and promoted a deeper understanding and appreciation of sustainability. Through the concerted efforts of staff, faculty, students and the Bellingham community, Western continued to build a more interconnected, resilient world community. We will continue this path in order to walk bravely into a better future for everyone.