

Exploring ideas around worldviews,
narratives, and knowledge systems

Ways of Knowing

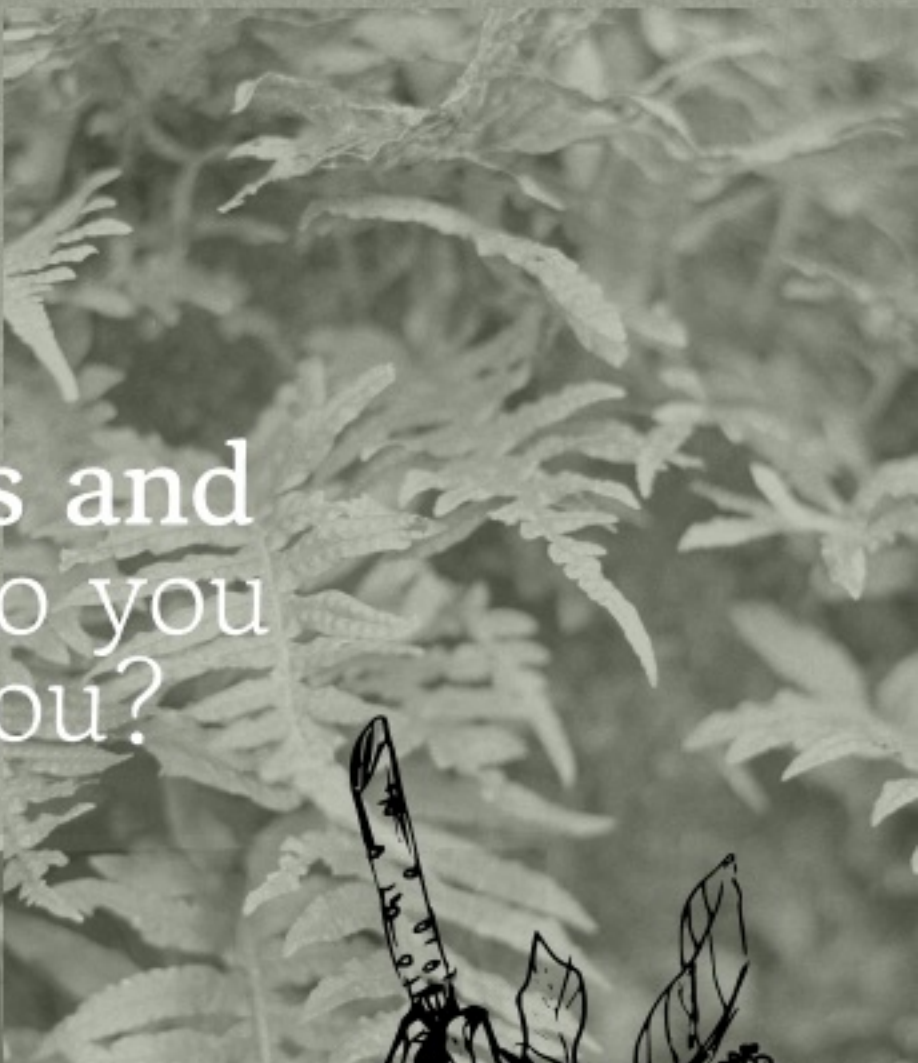
DESIGN BY KORT MAEDA
ILLUSTRATIONS BY TATIANA BROWN

What does ways
of knowing
mean to you?

Deception
pass.
N Beach.



What stories and
narratives do you
carry with you?



August 6, 2024.

Velvet leaf
Shoulder bush.
N. Shore, Turtle Beach.
Oahu, Hawaii.



silly,
long
tree -

How is your
relationship with the
natural world influenced
by your worldviews?



We acknowledge that the CSF and UW are on stolen Coast Salish land, specifically the ancestral land of the Duwamish, Puyallup, Suquamish, Tulalip, and Muckleshoot People. We recognize the continued stewardship of this land by the Coast Salish since time immemorial, the disruption by colonization, and now strive to continue supporting this work.

Land acknowledgement serves as a first step in opposing historic erasure and systemic oppression of Indigenous people and land. We believe that land acknowledgement requires relationship building, research, and action with integrity.

Ways of Knowing



The Native Plant Nursery at the UW Farm operates several greenhouses on its 1.5 acre urban farm. The greenhouses provides students with hands-on learning and volunteering opportunities during the growing season.



With Gratitude,

A little over three years ago, a seed was planted in our shared vision. Between annotated pages in books that passed through different hands and pieces of scrap paper scribbled on in the basement. We came together with a vision to tell a different narrative of resilience, sustainability, and community, rooted in how we create, what we share, and how we move through these spaces together. This became our zine.

Over the last few years, I have watched the CSF evolve, grow, and expand in profound, special, and every necessary way. Familiar yet unknown faces, new directions, and bittersweet goodbyes. The names here are only the beginning of a long list of people who represent the shared knowledge and collective wisdom we hold. To our shared knowledge, ways of knowing, and ways of resistance, cherish it.

In community,
The Campus Sustainability Fund 2024-2025
Kort Maeda

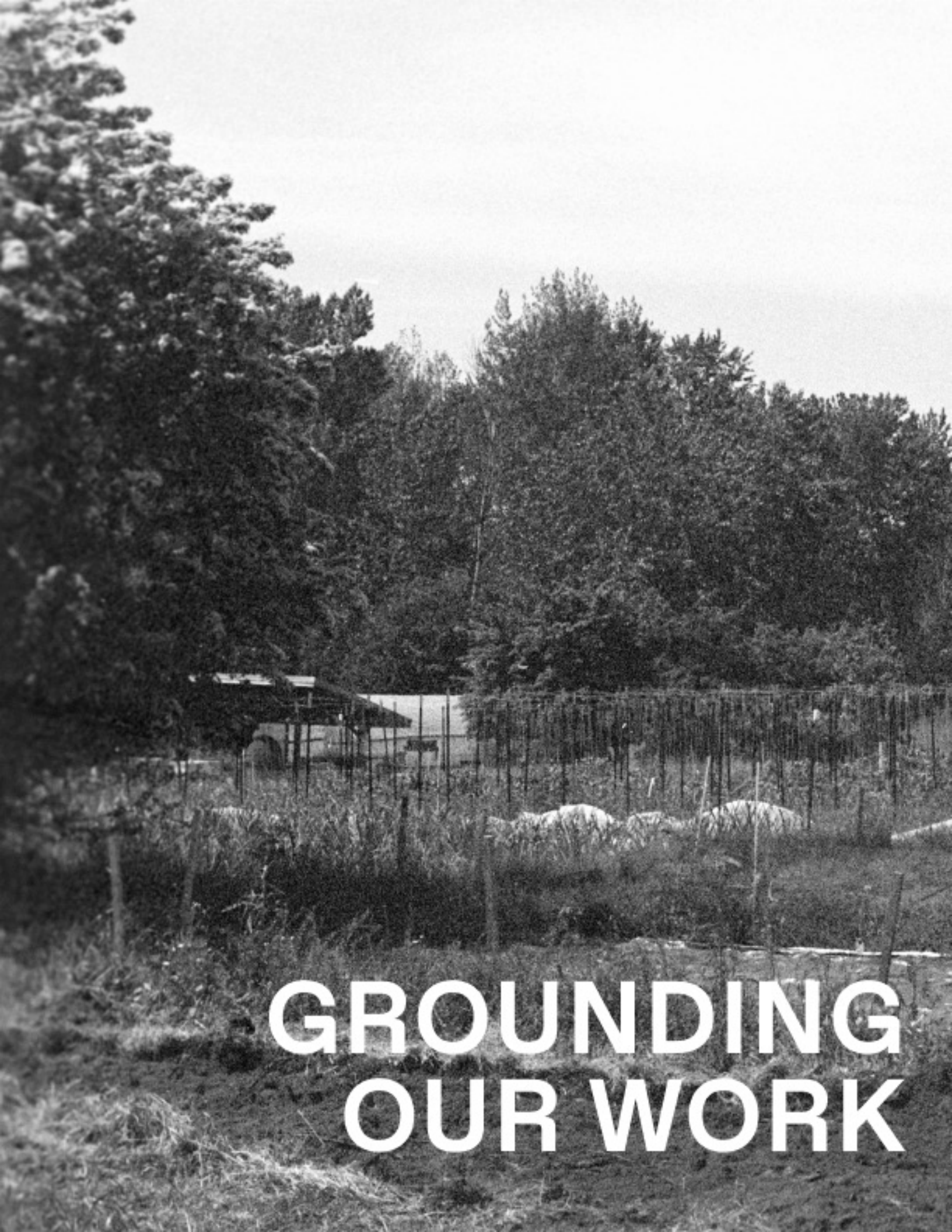
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Tatiana Brown — Manager of Program Operations
Maddy Laoprasert — Associate Program Director
Boe Zhou — Grant and Project Coordinator
Kort Maeda — Education and Outreach Coordinator
Lorenzo Roel Flores McCleese — Incoming Grant and Project Coordinator
Karolyn Maeda — Incoming Education and Outreach Coordinator

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Edited by Kort Maeda and Tatiana Brown
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GROUNDING OUR WORK







INDIGENOUS FOOD SYSTEMS

Alongside the construction of the Wapato Pond, the crew is working on the creation of the ADA accessible pathways throughout the UW Farm. The accessible pathways will provide greater access to the Wapato Pond. Photo by Kort Maeda.

The Wapato Pond at the UW Farm is an agricultural growing space on campus that allows for cultivating wapato (*Sagittaria latifolia*), an Indigenous freshwater plant with tuberous roots. Wapato is one of the First Foods, a term used to describe staple foods of various Indigenous diets cultivated for over 14,000 years. Located in the Center for Urban Horticulture, the pond is an expansion and continuation of the wələbʔaltxw (Intellectual House) Native Garden. This collaboration reflects a shared commitment to honoring Indigenous food systems and fostering community engagement.

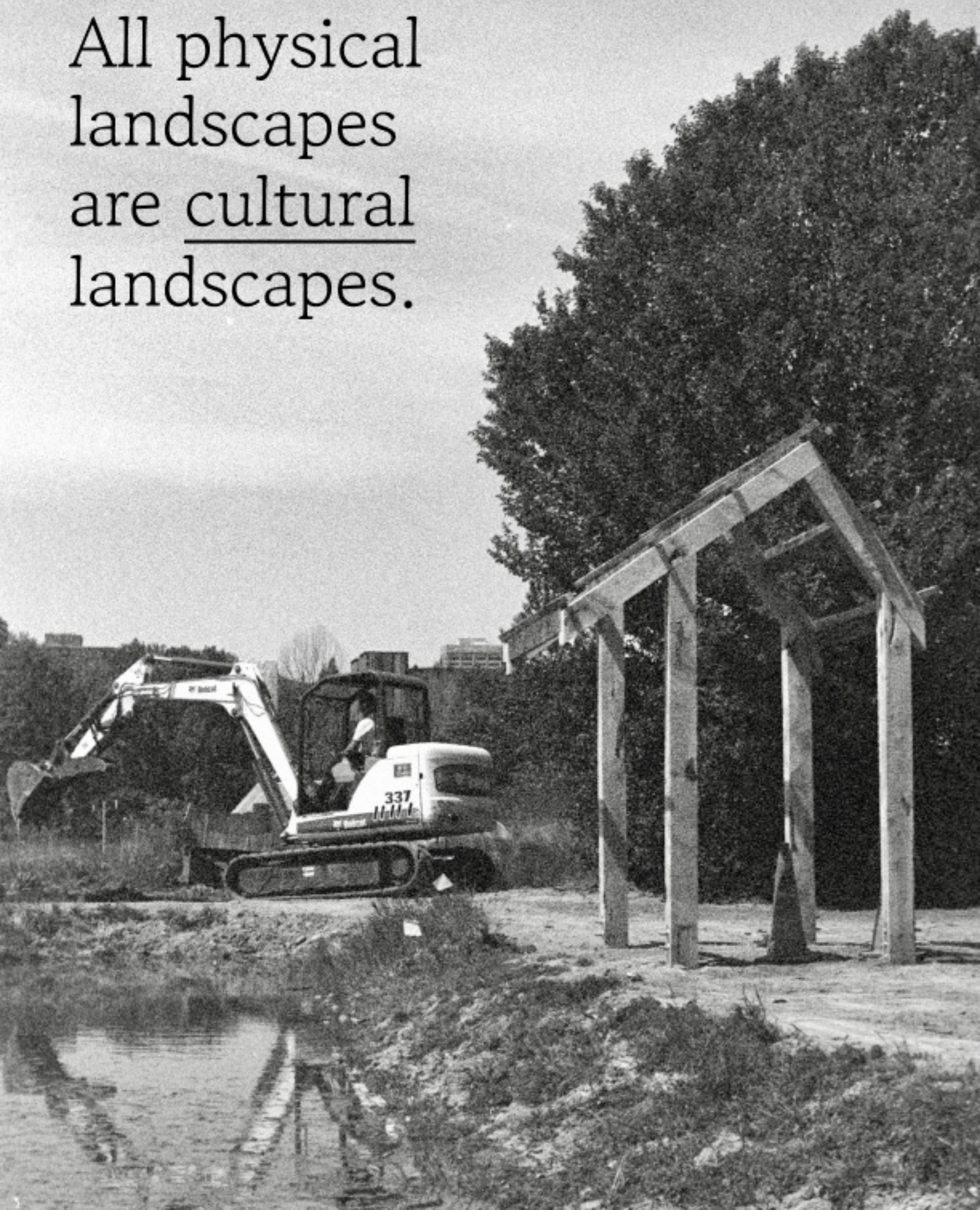
Previously, the Intellectual House's Native Garden cultivated wapato in two aquatic stock tanks on the UW Farm. The transition from the stock tanks to the construction of a physical pond marks a significant shift in how this culturally relevant plant is grown on campus. Moving operations from the above-ground tanks to the soil, the Wapato Pond provides hands-on

opportunities for harvesting, planting, and learning, making it the first instance of wapato being cultivated in the ground at the University of Washington.

The vision for the Wapato Pond was initially proposed by Lisaaksiichaa Braine, the former director of the Intellectual House. Braine's goal was to increase access to native foods for First Nations students experiencing food insecurity while also fostering greater awareness of these traditional foods. This vision aligns with a broader initiative to enhance the visibility and cultivation of Indigenous crops on campus, sparking public interest and ensuring deeper connections between people and place.

To bring this vision to life, recent UW Landscape Architecture graduate Kove Janeski worked with UW Farm Manager Perry Ackworth to fulfill Braine's request for the agricultural pond. Combining his

All physical
landscapes
are cultural
landscapes.



Wapato is one of the First Foods, a term used to describe staple foods of various Indigenous diets cultivated for over 14,000 years.

academic expertise and experience as UW Farm staff manager, Janeski led the design and construction of the Wapato Pond in the spring of 2023. This long-term collaboration became Janeski's independent studio topic and involved collaboration with UW Farm and UW Botanic Gardens. This project was supported by a \$5,000 CSF mini-grant with additional funds from the College of the Environment class gift, demonstrating applications of landscape architecture for social justice and community resilience.

The process of building the Wapato Pond did not come without its challenges. Invasive plant species had overtaken the space, requiring intensive labor,



(left) Wapato Pond Project Manager Kove Janeski graduated from the University of Washington with a Master's in Landscape Architecture in 2024. Janeski has led the design and construction of the Wapato Pond since the spring of 2022. Photos by Kove Janeski.



The pond has become a productive growing space for wapato, a learning space for visitors, and a habitat.

including the use of heavy machinery, to clear the area. Despite these hurdles, the team carefully shaped the land to ensure proper drainage and minimize pollutants in the pond. Construction coincided with the creation of accessible pathways throughout the farm, ensuring accessibility for all visitors. Over the summer of 2024, the pond was completed, with a pathway cutting through its center and a seating area featuring a repurposed toolbox bench shaded by solar panels.

Since completion, the pond has become a productive growing space for wapato, a learning space for visitors, and a habitat for ducks, birds, and frogs that have found their way to it. Each year, the UW Farm receives over 2,500 visitors, who get the opportunity to learn about food systems and land practices within UW's urban farm space. This fall, wapato will be ready to harvest and teach students and visitors more about Indigenous food systems and practices.





The transition from spring into summer feels religious this time.

The deep inhale of salal is followed by the exhale of the first ripe salmon berry whose leaves, soft and green are spread with open palms to collect the pooling light. Fingers laced tight, do not let the mid June, late afternoon gold slip through the cracks. Holding, in a prayer, golden berries will grow amongst neon greens and finally I can close my eyes.

Learning from Place

A Reflection on the Hansee Site

Despite having lived in the PNW for almost my whole life, when I went to my first Society for Ecological Restoration (SER) work party my freshman year on Heron Haven, the only plants I could identify were a Douglas-fir and the English ivy matted around it. That year I was an avid SER volunteer, and got to know more species as I both pulled and planted them under the guidance of the officers. They pushed me to take on a bigger role in the club, and so beginning in the Fall quarter of 2022, I took on the role of site manager for Hansee Site.

At my first work party as site manager, I had one volunteer, who came for a couple more after that, and finally got to play the role of an educator. I repeated an aggregate of what I had learned from classes, other officers, and my own experiences at restoration sites on the point of removing ivy, despite it's idyllic college aesthetics, and replacing it with a diverse cohort of locally grown and sourced native plants.

In my time in college, I never took a class on restoration. I was guided by peers, time spent at restoration work parties and at the SER-UW Native Plant Nursery as a volunteer, intern, and student assistant, and the personal relationship I developed with my site and its plants over the two years I spent restoring it. Seeing it so tangibly change over that time as my volunteers, friends, fellow officers and I pushed back the ivy, hacked away at the Himalayan blackberry, and put hundreds of native plants in the ground brought a closeness to Hansee site that I never imagined I could develop with a place.

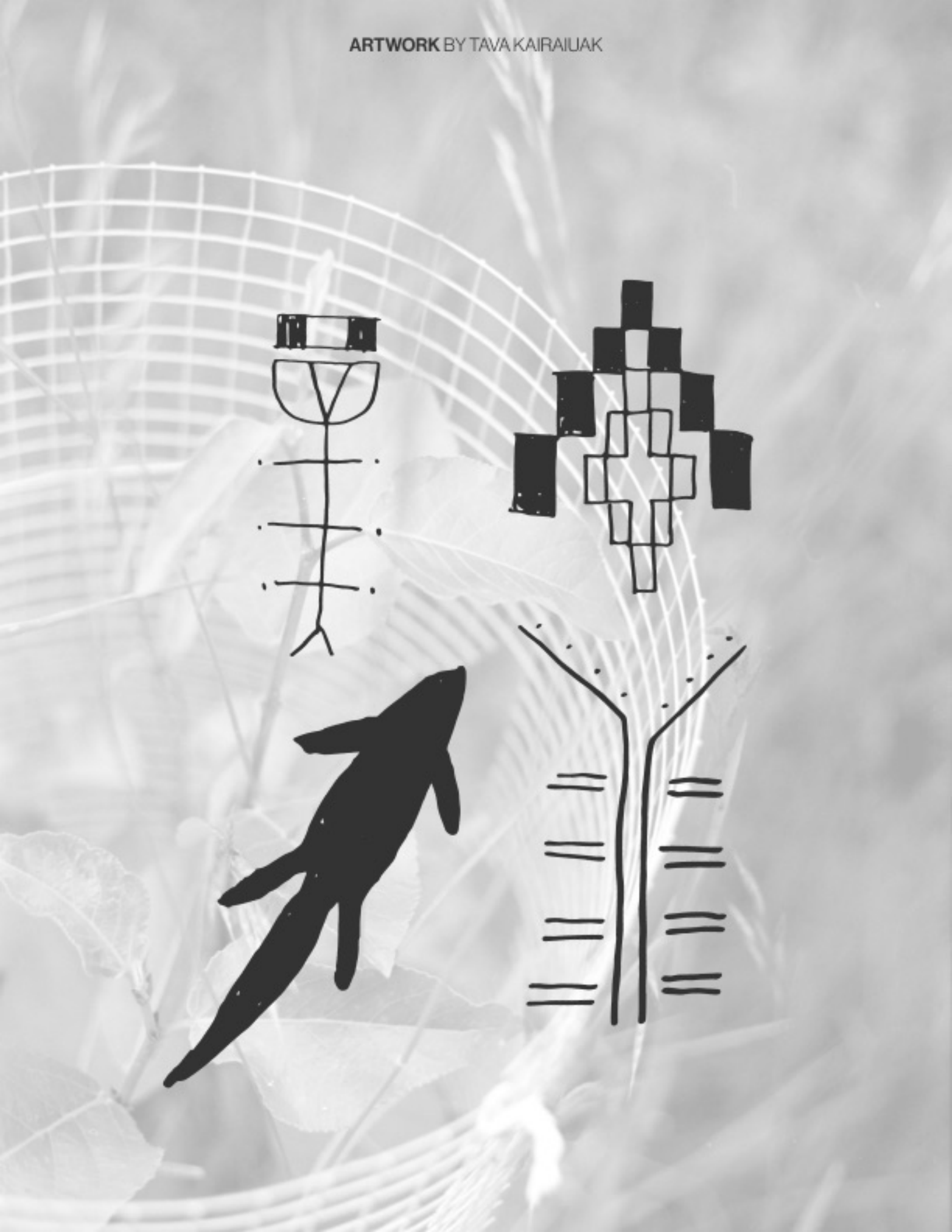
In my time in college, I never took a class on restoration. I was guided by peers, time spent at restoration work parties



Joshua Kim graduated in spring 2024 with a degree in Environmental Science and Resource Management. Kim established and has managed the site for over 2 years.



SER-UW student volunteers and site managers volunteer at the Hansee Site during one of their weekly work parties. Photo by Joshua Kim.



On hitting a deer on north cascades highway
He is body more than anything
More body than me
My body is an after thought, a mass that trails around
His body is his being.
Blood still pulsing, hair skin muscle, stomach taught.
His time of death is 5:14am.
I had woken up with a premonition
Maybe he did too
The body is gone by the time we drive back

Quickly we put distance between us,
Motoring away in the broken body
Of my dad's red truck.
There's an urge to distinguish
To grasp on to my phone, my book, the stick shift
Evidence of the difference between us and him.

He is body he is body he is body

Into the shifting darkness
The bright white circle from the flashlight thickens it all.
Known and unknown,
Control and fear.

What is there to fear?

Willows at Work

Enhancing Ecological Restoration through Phytoremediation



Walking through the paths, visitors can find Nootka rose (*Rosa nutkana*), black cottonwood (*Populus trichocarpa*), and red alder (*Alnus rubra*), planted by student volunteers during work parties. Photo by Apollo Normet.

Located in one of Seattle's most ecologically productive wetland ecosystems, the Willow Site is an active remediation and restoration project, created on the remains of a former landfill. At 73.5 acres, the Union Bay Natural Area, commonly referred to as UBNA, is located on the traditional land of the Duwamish People. The land now known as Union Bay was first stewarded by keepers of Indigenous knowledge.

Today, the Willow site is tucked away where Ravenna Creek, a slow-moving body of water, flows out to Lake Washington. Union Bay has become a space for urban recreation and green space, a home to migratory birds and native plant communities. Walking through the recently created paths, visitors can find Nootka rose (*Rosa nutkana*), black cottonwood (*Populus trichocarpa*), and red alder (*Alnus rubra*), all planted by student volunteers.

Situated at the mouth of Lake Washington, UBNA contains Seattle's extensive land use and waste management history. From 1925 to 1966, the marshland served as the city's primary landfill, becoming the dumping ground for everything from residential to industrial waste. As a result, the site contains 50 years of buried toxins that leached into waterways. The landfill was capped in 1971 with a layer of clay, to prevent further contamination, and became under the University of Washington's management in 1972. Over time, without native vegetation, invasive species, such as Himalayan blackberry (*Rubus armeniacus*), reed canary grass (*Phalaris arundinaceae*), and Scotch broom (*Cystis scoparius*), covered the landscape. Widespread invasive species continue to dominate the landscape.

Ecological restoration efforts rely upon trial and error.



The behind the scenes of the frequent restoration work at the ever-evolving Willow site. Photo by Apollo Normet.

The Willow site is home to well over 1,000 plants, creating a vibrant plant community.

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The Willow site was envisioned in the fall of 2021 by UW professor, Dr. Sharon Doty, within the School of Environmental and Forest Sciences. The site came to fruition with the help of students from her classes and the Society for Ecological Restoration, better known as SER-UW, a student chapter for ecologically sensitive management. The initial plan for the UBNA Willow site outlined the removal of invasive Himalayan blackberry and replanting of willows under the guidance of Doty. In the end, a mix of willows (*Salix spp.*) and poplars (*Populus spp.*) were chosen for their remediation properties, and their ability to pull toxins from landfill-contaminated soils.

While each site comes with unique challenges, ecological restoration efforts rely upon trial and error. Each year, SER-UW site managers are tasked with the planting and monitoring of vegetation communities. Successful restoration techniques are site-specific, requiring experiential planting to discover which native plants take root. A recent graduate, Apollo Normet, was the Willow site manager, completing their capstone project on phytoremediation at UBNA. Normet graduated with a degree in Environmental Science and Terrestrial Resource Management and was one of the student volunteers involved in site planting and monitoring. The Willow site has been the focus of research on hydrology, plant communities, and remediation efforts.

The Willow site is home to well over 1,000 plants, creating a vibrant plant community for more-than-human species in the urban ecosystem that rely upon Union Bay for feeding, mating, and migration. The site has gradually become a habitat for cottontail bunnies, deer, and beavers as well as populations of migratory birds. The presence of urban wildlife can be observed throughout the site, where deer frequently chew off plant tops, cottontail bunnies nibble on young plants, and beavers create dams in the nearby creek.

Unlike most sites managed by SER-UW across campus, the Willow site lacks irrigation, relying on student volunteers to use water from the creek during the spring and summer months. The Willow site is the result of collaboration between UW students, faculty, and staff, creating a space for active learning. The site has been made possible by the work of past ESRM capstone members, Dr. Sharon Doty, UW Grounds, and many SER-UW volunteers, planting and monitoring native vegetation. As UBNA continues to change, the Willow site will change alongside, becoming a dynamic landscape re-establishing native plant communities and habitats for more-than-human species.

Read more about the Society for Ecological Restoration UW (SER-UW) at <https://sites.uw.edu/seruw/>.

Coevolution

A Reflection by Erik Erstgaard, SER-UW '24

I was reading on my second-favorite bench, surrounded by dappled sun patches on the forest floor, when a group of older students started to gather in a nearby clearing. Sporting clipboards, groups formed and then started walking through the forest, studying the landscape with some sort of purpose. Wondering what they were looking for, I wandered over to see if there was a professor charging them with a forest-exploring assignment. I soon discovered that the professor was one I had two years prior, in an introductory sustainability seminar. Today, he was taking his current "Principles of Silviculture" class to this forest for a lab session. Silviculture, being the science of controlling forests for timber production,

My curiosity was mainly driven by the fact that this forest has been my obsession for the last three years: a restoration project named Heron Haven that I inherited and soon made the focal point of my undergraduate experience. So I was relieved when I found out the assignment was not the silviculture I had learned in this professor's brief seminar lecture previously, which had infuriated me for painting clear-cut logging as a sustainable practice. Especially maddening to my sophomoreic activist past self was that this guy was in charge of a 4,000-acre experimental forest owned by the University that was being managed under these so-called principles. My views on forestry have since become more nuanced, but fortunately, the assignment for my 4-acre tract of forest was a silvicultural restoration treatment. In other words, which trees should be harvested to achieve the greatest ecological results,

A restoration project named Heron Haven that I inherited and soon made the focal point of my undergraduate experience



(above) The Heron Haven on a warm day in May. The site is home to migrating birds and native flora and fauna.

(right) SER-UW President and Heron Haven site manager Erik Erstgaard points out native plant species.



This turned out to be a question I had thought a lot about. Despite not having the clearance to cut down trees, I had dreamed many a plan to remove the invasive hedge maples and cherry laurels, thin the dense thickets of teenage cedars, and use the dead wood for bird, insect, and fungi habitat. So I was quite interested in what the graduate students could come up with, whether I had the intuition of a studying silviculturist. But beneath this layer of intrigue was a deeper feeling of uneasiness. The graduate student and professorial eyes felt prying, too analytical and a shade of judgmental. It felt like my personhood was under the lens of science. I filled the forest with so much meaning that it had become a representation of myself, and my level of control over it was being challenged.

My first introduction to Heron Haven was as a volunteer. I would attend volunteer work sessions—we called them “work parties”—in between the virtual classes of my freshman year. Because of the pandemic these weren’t well-attended, but also because of the pandemic I was eager for outdoor social activity. The site looked completely different to me back then. That could be due in part to its physical transformation, the amount of invasive ivy removed from the understory could fill multiple garbage trucks and a trail now mediates site visits. But looking back now, the contrast is more in the meaning I have since attached to every detail of the land’s patterns, turns, changes, and friends. The meaning grew fiercely from curiosity and now is as familiar as the fixtures of my childhood bedroom.

One Spring afternoon, we were planting the final assortment of plants for the year when Nikoli decided he would let the other volunteer, Zara, and I choose where to place a couple of the plants for a change. We had been consistently attending work parties so our expertise of species-specific plant needs had grown just enough for this challenge. The plant was twinberry (*Lonicera involucrata*), an elegant shrub with two “twin” yellow flowers followed by twin shiny purple berries each year, and they enjoyed habitats with more moisture and sunlight. We each took a 1-gallon, potted shrubs and started hunting for the perfect moist and sunny forever-home within our forest understory.



(above) The native plants for SER-UW sites are grown on campus at the Native Nursery. Photo by Erik Ertsgaard.

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That is a moment
for immense care
and attentiveness,
an intimacy
between you, the
plant, and the land
surrounding.

But we quickly realized our freedom to choose was limited: every location we would place the pot would be lovingly scrutinized by Nikoli, so we would try a new location and repeat until we eventually found a spot he liked. The iterations on twinberry locations were so numerous I remember thinking Nikoli was just waiting for us to pick the spot he initially wanted. This exercise, although frustrating at the time, was one of the best, most memorable learning I gained. In that moment you determine the course of the rest of that twinberry's life, from its health and lifespan to how it fits into the community around it. That is a moment for immense care and attentiveness, an intimacy between you, the plant, and the land surrounding.

When perusing a dull, unformatted list of scientific and common names to make a plant order, managers are left to fill in the meaning underneath each name. Each person's experiences, preferences, and reasoning culminate to make a list of species that matches the conditions of the site but also reflects their personality, consciously or subconsciously. This assortment of species is then passed through the filter of change, left to grow in the autonomously interacting beauty of a living ecosystem. The nice thing about being a site manager is that no one really sees the plants you've installed but haven't survived. Death is a reality you have to live with; for multitudinous and often unknown reasons up to half of restoration plants die within the first two years. Then again, this means that the extant community of plants on any given restoration site is a reflection of the manager's personality in living dialogue with the land they are restoring. And each other living organism acts as manager in their own capacity big or small, from the bumblebee choosing which of my planted flowers it prefers to pollinate to the suite soil microbes facilitating or inhibiting the survival of my favorite-tasting salal berries. No organism, especially me, acts alone on Heron Haven. And there is beauty in that no matter how many successes or failures determine my self-consciousness. And the meaning behind each pattern, turn of the trail, and plant friend will change as this community grows and I do as well.



(above) Site managers for the SER-UW sites on campus are given the opportunity to make planting decisions. Photo by Erik Ertsgaard.

ARTWORK BY TAVA KAIRAIUAK



WAYS OF KNOWING



ARTWORK BY KORT MAEDA

Willow Site

A Reflection by Apollo Normet, SER UW '24

I had the wonderful opportunity to complete restoration and remediation work at the Willow Site in Union Bay Natural Area. This experience extended my learning beyond the traditional classroom, offering lessons in navigating the natural world, forming friendships, developing leadership skills, and testing my limits—often challenged by beavers chewing on my plants and the unpredictable Washington State weather.

Union Bay provided a “blank slate” in an overlooked and underappreciated location close to home and the University. Restoration work is both physically demanding (involving tasks like invasive species removal, plant installation, and pruning) and mentally challenging (requiring planning, mapping, sampling, and adapting as conditions change). Initially, I was not fully prepared for these demands. This work also gave me time away and was cathartic compared to the homework and tests associated with STEM coursework.

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Union Bay provided a blank slate in an overlooked and under appreciated location close to home.

Since graduating, I've been asked two questions: what's your plan now, and what will you miss most? I hope to continue with restoration work as my career path. What I will miss most are the connections I made. Working with a like-minded and dedicated team made the experience extremely fun and rewarding, leading to an improved space for both the environment and the community, as well as friendships that will last a lifetime.

My work would not have been possible without the support of many people. A huge thank-you goes out to Professor Sharon Doty for her years of mentorship, the various community members who donated money and/or their time, the previous capstone project members, my capstone group, and the group that followed us, SER-UW and its members were a tremendous help, and their wealth of knowledge was invaluable.

I encourage anyone with an interest in campus or community spaces, plants, or simply getting involved, to reach out to SER-UW.

2024 SER-UW Site Manager, Apollo Normet, stands in the center of the Willow site, part of the larger Union Bay Natural Area. The site uses willow species and their properties to remediate the soil of the former landfill.



tāta yan i talaya-ña



fåmfok

ARTWORK BY GILLIAN DUEÑAS

Designing for Birds

Empowering Students While Designing a Bird Friendly Campus

By Lauren Cortez-French, CSF Committee Members
School of Marine and Environmental Affairs, '24

In just two years, what began as a Ph.D. dissertation focused on the relationship between birds and the built environment has blossomed into a transdisciplinary research project involving 119 students from numerous academic programs and backgrounds.

Founded and led by UW Architecture Ph.D. student Judy Bowes, the focus of Bird Friendly Campus is to compare the design features of on-campus buildings, including those that are LEED-certified, to determine their likelihood of being involved in a bird collision. Today, in addition to this objective, the Bird Friendly Campus aims to provide students from any discipline with a low-barrier opportunity to conduct fieldwork, learn about sustainable architecture and ornithology, and earn course credit while doing so.

While finishing her undergraduate degree, Judy Bowes took a job at a local aviary housing birds of prey, many of whom had been injured by collisions with human-made structures. It was here that Bowes, who was studying sustainable architecture, began to grapple with the impact of the built environment on non-humans. To explore this issue in depth, Bowes pursued a Master of Science in Architecture at UW before continuing onto a Ph.D. Initially, she planned to monitor bird collisions with only a small team of three researchers and a few volunteers. However, Bowes quickly found that many students were as eager to study bird collisions as she was.

Recognizing the volume of interested students and the immense opportunities for learning, Bowes decided to adopt a dual focus during her time at UW – conducting her Ph.D. research while also leading the multifaceted Bird Friendly Campus project. Data is collected daily, with involved



Monitors walk along assigned routes and check for dead birds around buildings.

students monitoring at least one morning every week. Monitors walk along assigned routes and check for dead birds around buildings or other signs of collisions, such as imprints on windows or feathers. Students record this data in the Bird Friendly Campus' app, Avian Impact, also created and continuously improved by students. The app reduces transcribing errors and possible misidentification of bird species by allowing the data collector to easily capture a picture of their findings, mark their location, and record notes about the building's design features.

Many post-graduate opportunities require research and fieldwork experience, which is often limited to a select number of students, requires courses with additional fees, or is inaccessible for those without a car or who have mobility needs. To help students overcome these and other constraints, Bowes and her mentor created an independent study course in which students of any major can earn course credit for their participation. In addition to collecting data, students in this course can approach bird collisions from their area of expertise, whether that be architecture, biology, or informatics. Involved students have already utilized their data for a wide range of projects, from evaluating the viability of materials for window designs that can reduce bird collisions to studying scavenging behavior following bird deaths from collisions.

As Bird Friendly Campus has grown, so has its need for a larger core team. Through a CSF grant of \$43,339, Bird Friendly Campus is able to employ a team of 10 students fulfilling roles ranging from Field Coordinator to App Developer. These paid roles provide students with meaningful work experiences and allow Bird Friendly Campus to continue to grow sustainably.

After just 2 years of data collection, Bird Friendly Campus has identified hotspots of bird collisions, including transparent glass corners, glass skyways, glass railings, and reflections of vegetation. With a 2024 CSF grant of \$69,015, Phase 2 of Bird Friendly Campus will focus on testing and implementing methods to reduce collisions at these architectural hotspots, such as bird-safe glass and vinyl, which allow birds to more easily detect transparent and reflective surfaces.

Bird Friendly Campus' success lies in its transdisciplinary approach, drawing students from architecture, environmental science, marine biology, informatics, and even pre-med. Bowes has focused on empowering students by ensuring that they are properly compensated for their work through credit or pay, giving them ownership over their data, and cultivating a learning environment that does not require prior expertise in a field. Through these approaches, Bird Friendly Campus not only advances conservation research but also provides students with a unique and impactful educational experience which opens doors for their future careers.

Read more about a Bird Friendly Campus at <https://www.birdfriendlycampus.com>.



An example of bird-safe glass installed in the Life Sciences Building on the UW campus. Photo by Judy Bowes.

for everything

around them.

keep

moving?

ARTWORK BY KORT MAEDA

'oh that's very nice
Very abstract and
beautiful" - Kew Ken



LENA POINT, AK

Resilient Design

By Neha Chinnai, CSF Committee Member
Master's of Urban Planning, '24



Rendering of the proposed greenhouse complete with solar panels on the roof to provide electricity. Model created by UW Solar.

Students Leading Interdisciplinary Climate Resilience on UW's Campus

In the summer of 2023, UW Solar completed a CSF-funded feasibility study for the Resiliency Tunnel, a community and educational space on the University of Washington Farm. The proposed "high tunnel" greenhouse, made with sustainable materials like hemp-crete, aims to support food production through extending the growing season and reducing food waste. The design includes solar panels that will provide electricity to the farm that currently uses the Center for Urban Horticulture's electricity. The project aims to decrease the farm's energy usage by 10%.

The tunnel will also capture rainwater used to irrigate the agricultural Wapato Pond south of the greenhouse. The Wapato Pond, funded by a CSF mini-grant and designed by Master of Landscape Architecture student Kove Janeski, will grow wapato and other Native culturally-significant aquatic plants.

As a student-run organization, the Resiliency Tunnel project offers UW Solar members the opportunity to get involved on campus and strengthen their leadership skills. Kayce Hsueh, an incoming fourth-year undergraduate student studying environmental science and marine biology, has been involved in the project since her first year at UW. "I definitely think the [project has] given people the opportunity to independently pursue a project and get real life experience," said Hsueh. "We're getting grants, we're going out to the Farm, we're looking at materials to build and making models of everything."

