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DEAR READER,

This summer, the Gulf states flooded while the West Coast burned. Seattle experienced a record-breaking 55 days without measurable precipitation. For the first time in the nine years I have lived in Western Washington, Mount Baker looked like a stranger: brown, barren and clinging onto its shrinking glaciers. In the first week of November, Bellingham, Washington, woke to an unusually early sight: four inches of snow.

This planet is going to keep changing whether we're prepared or not. It's on us to learn how to continue living on it. Luckily, humans are quick learners. We constantly learn from our mistakes, give each other knowledge and search for answers. I like to think humans share one giant classroom with our future on the whiteboard.

For some of the stories in this issue, we'll take you into an actual classroom. But for the majority, we encourage you to think of education more broadly. We'll introduce you to a reef net captain who is passing on his indigenous knowledge to the younger generation. We'll take you to a community that is learning how to live with wildfire. We'll show you people studying a different way to care for the deceased. We'll tell you a story about a beekeeping class taught behind the gates of a prison.

These are stories about reflecting on the past, living with the present and preparing for what is yet to come. I hope these stories show you the power of education in the face of climate change and other environmental challenges. As you read, I hope you learn, too.

To knowing, growing and moving forward,

Keiko Betcher
Editor-in-Chief

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Ranchers and conservationists learn how to live in coexistence with wolves that are returning to Washington.

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The community of Leavenworth, Washington, tries to understand their relationship with wildfires in their forests.

ON THE COVER

When the sanctuary gate opened, my eyes were drawn to Juno: a massive wolf-dog hybrid. The torrential downpour along with everything else around me seemed to stop. The way she glided effortlessly over the ground while she trotted was unlike anything I'd ever seen. Her fur waved in the wind like the tall grass in her open field. Juno, along with other wolves at Wolf Haven International, were rescued from unfortunate circumstances, and will live out their lives under the care of professionals.

PHOTOGRAPH BY HANNAH GABRIELSON

THE GATED GARDEN

STORY BY **JONATHAN FLYNN**
PHOTOS BY **GRETA LOZADA**

Inmates at the Washington Corrections Center in Shelton, Washington, work in greenhouses and garden beds as a part of the Sustainability in Prisons Project.

Robert Ostaszewski walks over to the hives, grass crunching underfoot in the misty morning. He kneels, noticing a bee flipped over on its back. Gently, he reaches for it and allows it to latch onto his finger. He slowly lifts the bee into the air and watches it fly away. Ostaszewski is an apprentice beekeeper, but unlike the bee, he cannot leave. Ostaszewski is incarcerated.

LEFT: *Morris Talaga, a teaching assistant in the program, bends down to pick up a piece of the violet plants growing at the prison. These violet plants provide crucial habitat for the silverspot butterfly.*

OSTASZEWSKI IS A teaching assistant in the beekeeping program at the Washington Corrections Center in Shelton, Washington. The Sustainability in Prisons Project was founded in 2003 as a partnership between the Evergreen State College and the Washington State Department of Corrections. Together, they designed a model of environmental education and nature therapy for inmates. Since then, the project has established programs in all 12 prisons in Washington. They want to provide inmates like Ostaszewski with the skills necessary to be employable in a developing green economy.

At the Shelton prison, watchtowers loom in the distance. As inmates move across the compound, they navigate through a barbed-wire maze of fences and gates patrolled by armed guards. However, no officer patrols the beekeeping enclosure. Instead of a badge, the inmates are greeted by a sign with a cartoon bee and bright-yellow letters reading, "Intensive Bee Management Unit." The bees are kept in a white box beneath a shelter an inmate construction crew built. As bees buzz in and out of the boxes, Ostaszewski's beekeeping partner explains how the little insects form themselves into a sphere, slowly circulating from the inside out to keep warm in the crisp morning. In addition to beekeeping, inmates can receive vocational training in carpentry and technical work by working in the facility's steam plant.

"When you send an inmate out after they've taken these courses, they can sustain themselves," Ostaszewski said. "They don't have to rely on government stuff and they don't have to worry about taking care of their families because they have the skills to do that and to put a roof over their heads."

In 2013, almost a quarter of Washington state inmates reoffended within their first year of release, according to a 2014 study by the Council of State Governments Justice Center, a New York-based think tank. In 2015, approximately 3,660 inmates held sustainability jobs within Washington prisons — nearly 19 percent of the total incarcerated population in the state, according to SPP's 2016 annual report.

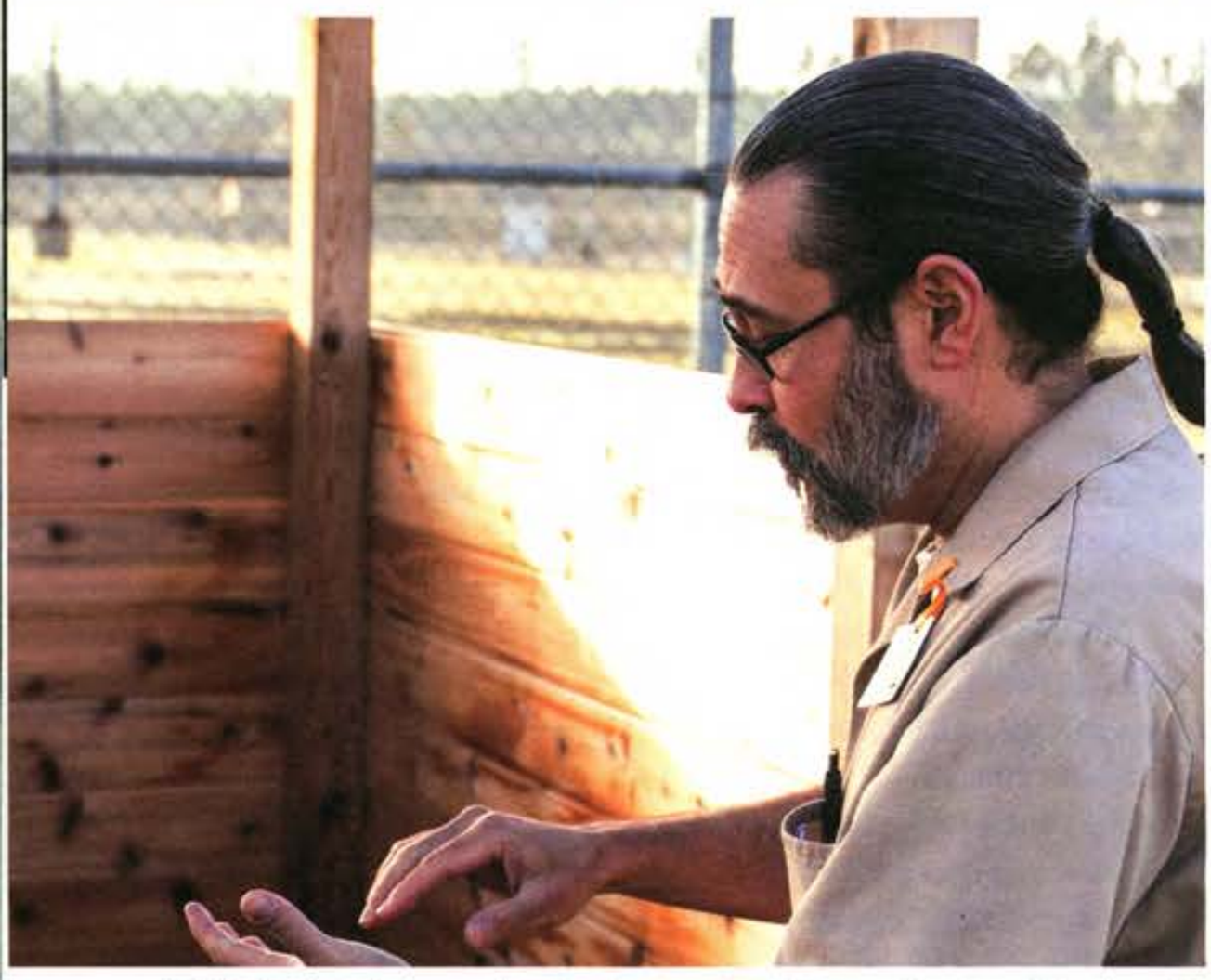
The prison pays inmates a base rate of 35 cents per hour for various jobs, said Gina Bryan, the liaison to the beekeeping program. A typical beekeeping certification course would have cost each inmate $25, but help from SPP has been able to bring the cost down to $5, she said.

Beekeeping isn't the only sustainability program at the corrections center. Last year, the inmates grew more than 13,600 kilograms of produce in the prison's gardens and donated it in Mason and Thurston counties.

Adjacent to the beekeeping enclosure sits a garden of blue violets. Although the shrub is small and delicate, this native species provides a biologically-unique habitat for one endangered organism: the Oregon silverspot butterfly. The blue violet is virtually the only habitat where the butterfly may develop during the larval stage. Morris Talaga, an inmate and teaching assistant in the program, clutches his notebook and walks over to the edge of a flower bed filled with withered shrubs.

"These are very important plants," Talaga says. He displays a few tiny violet seeds in his big, weathered hand. "You could literally put five plants in front of [the silverspot butterfly], and these are the only plants that it will come to."

The Center for Natural Lands Management, a California-based nonprofit that manages conservation land, partnered with the sustainability project to cultivate these species of violets, said Carl Elliot, the staff manager of the violet program. It's not an easy task. If the pods containing the seeds are not harvested within a few hours of becoming ripe, they will burst and shoot seeds across the garden, making them nearly impossible



TOP LEFT: *A sign near the beehives reads "Intensive Bee Management Unit" — a play on the language of the prison system.*

CENTER LEFT: *An assortment of tools the inmates use while tending to the bees.*

to collect. As a result, the violets must be monitored closely and hand-picked daily by the inmate crew. The inmates have harvested about four times the amount of violet seeds compared to the federal Natural Resource Conservation Service. The service now relies solely on the inmates for seed production, Elliot said.

A program like the sustainability project cannot be considered sustainable if it offers green-collar training for inmates without a rehabilitative element, according to a 2014 study published in Geographica Helvetica, a Swiss geography journal. To address this, activities such as gardening and beekeeping double as opportunities for inmates to develop teamwork skills and a sense of stewardship.

Inmates who participate in horticultural therapy have an easier time re-entering society after incarceration, as long as they receive transitional support after release, a 1998 study in the Journal of Offender Rehabilitation found. Additionally, offenders are less likely to return to prison if they find employment after release, according to a 2012 study in the International Journal of Criminal Justice Sciences.

Their programs have succeeded in reducing the environmental impact of the prisons, including an overall decrease of energy use and waste generation, according to SPP's 2016 financial report. The program does not have data on the recidivism rates of inmates who participated in their program.

As Ostaszewski serves out the rest of his sentence, he can continue to instruct new inmates as they, too, become beekeeping apprentices. He said he would like to become a farmer with his wife when he is released. "I'm just chomping at the bit to get out," he said. Ostaszewski believes he will get to leave the prison in 2025.

Talaga can continue teaching fellow inmates about the importance of conservation while restoring native violet populations. When released, Talaga said he would like to help his parents take care of their garden.

"It's giving back to society," he said. "I really believe that I'm helping with that, and it's a good thing for me."

JONATHAN FLYNN is an environmental science major dedicated to becoming a middle school science teacher. He believes anybody can become passionate about science if given the proper tools and means.

GRETA LOZADA is a photographer from Minnesota. Her focus is environmental studies, with hopes to initiate policy change in communities to ensure a healthier environment.

ABOVE: *Robert Ostaszewski, a beekeeping teaching assistant, explains how the bees are currently dormant.*

Troy Olsen, Lummi reef net captain, wears his traditional reef net attire while he sits on the shore of the Lummi Reservation.

CAPTAINING THE TIDE

STORY BY **COLTON GULLY**
PHOTOS BY **HANNAH GABRIELSON**

Imagine what this place was like before. Before clearcuts left scabs on mountain tops. Before rivers were diked, dammed and levied. Before fertile valleys were stripped and cloaked in foreign life.

Imagine rain falling on mudflats stretching from the South Sound to Vancouver, Canada; ancient trees standing watch over cold, clear rivers; salmon swimming up fertile veins; the headwater's majestic sound reverberating off crags of snowy basalt.

Remember what is woven between all of this: the people who give thanks to this land.

REEF NET FISHING is at the heart of the Lummi, a tribe that traditionally lived on Washington state's northern coast and in southern British Columbia. From this sustainable practice all things are derived. The reef net provided abundant food, allowing the community time to acquire wealth, which was eventually redistributed during potlatch ceremonies, a feast where the Lummi give gifts. If the sockeye were running, the people were busy preparing. Today, through the reef net, an indigenous technology almost lost, the Lummi work to revitalize their way of life.

"The Salmon people taught us that," said Richard Solomon, a Lummi elder. "Taught us where we come from. Who we are."

Reef netting is a method of fishing that mimics a reef by stringing a net between two canoes. Some distance in front of the canoes, the net is anchored to the seafloor. Salmon traveling on the tide unknowingly swim up the fake reef toward the surface. Once the salmon are visible from the bow of the canoes, a signal from the captain brings the boats together to trap them. The captain is the only person with the right to fish a certain reef net site — an inherited right — and the crew is made up of 10 men of his choosing. Today, only a few reef net captains remain.

Troy Olsen is one of those captains. He and his partner, Shirley Williams, sat at their kitchen table, listening to Steve and Richard Solomon speak in the attached living room. Richard spoke softly and was always listening. Steve is taller than his brother and his hair is trimmed close. They were talking about how reef netting was central to the Lummi worldview.

ABOVE: *Steve Solomon (left), Troy Olsen (middle), and Richard Solomon (right). Steve and Richard are both Lummi Nation elders. Troy is one of few remaining reef net captains.*

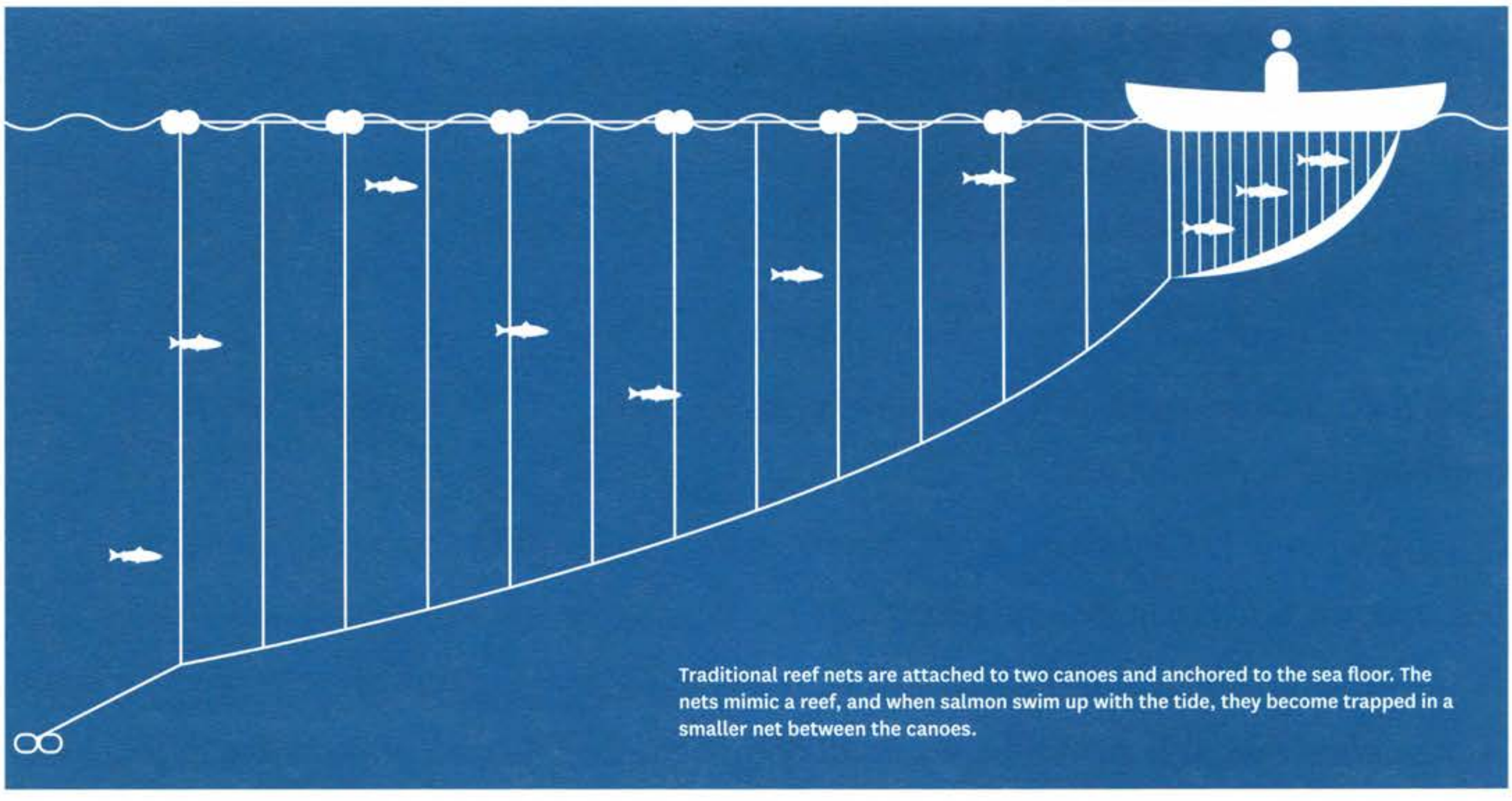
"It was our way of life — to respect the water, the trees, the air, the ground," Steve Solomon said.

Olsen is a kind, Lummi man with deep, cobalt eyes. His grandfather, Herman Olsen, was a reef net captain, making Olsen a reef net captain by inheritance. Since discovering his heritage, he and Williams have worked to help young community members discover their way of life through the spirit of the reef net.

"We're just fighting for our identity, so that the kids can honor their way of life," Olsen said.

It has been a long, hard fight. In 1974, the Boldt Decision upheld the Lummi's right to fish their usual and accustomed grounds. The linchpin in this decision was the reef net, according to Federal Judge George Hugo Boldt. Inheritance traditions were used in court to prove the Lummi did understand that reef net sites were owned by a tribal member. This refuted the claim that non-natives had a right to fish traditional indigenous sites, Boldt wrote in his judgment.

"If it weren't for the reef net issue, we



Traditional reef nets are attached to two canoes and anchored to the sea floor. The nets mimic a reef, and when salmon swim up with the tide, they become trapped in a smaller net between the canoes.

wouldn't have won U.S. v. Washington," Steve Solomon said.

In 2015, Olsen and Williams founded Whiteswan Environmental, an organization dedicated to helping future generations understand their ancestral way of life. In 2016, the organization played a large role in funding and facilitating a week-long mini-university on Henry Island, on a traditional reef net site. At the event, young Lummi set up a traditional reef net and participated in ceremonies honoring their ancient way of life.

"Together, we can support community healing through the natural, cultural and historical restoration to the Salish Sea for the next seven generations," Williams said.

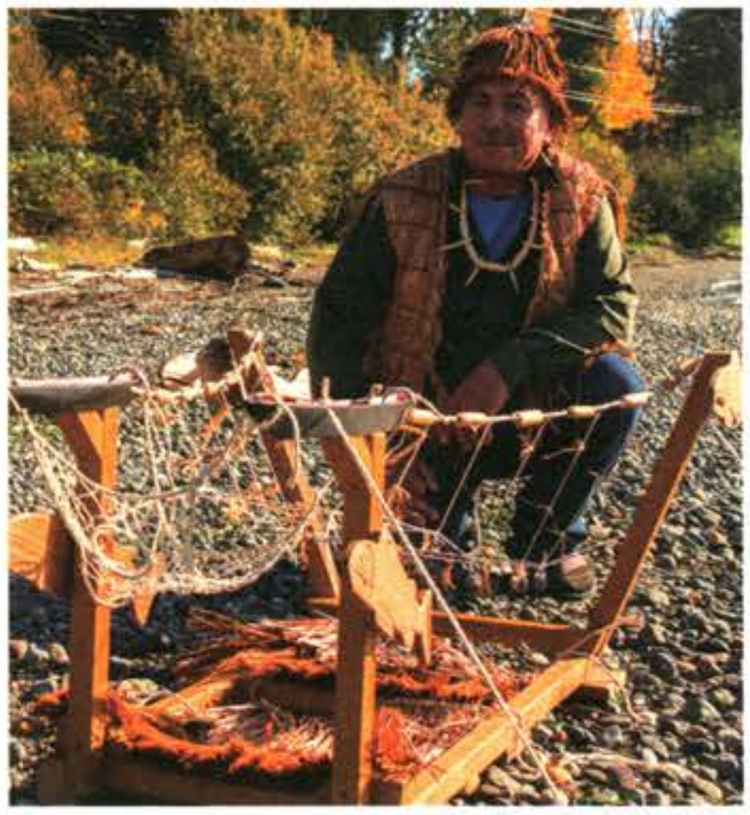
Today, Whiteswan Environmental works to realize their vision of a Coast Salish Tribal Heritage Field Institute and Interpretive Center, a place where Lummi youth will learn from a hands-on, K-through-Ph.D. curriculum. Olsen and Williams know if this monumental dream is to be realized, they must work to unite their entire community.

"One mind for the purpose of the work," Williams said.

Olsen leans over a half-assembled reef net model scattered on the floor of his living room. It has been awhile since Troy set up the model. He used to travel with it to public events and schools, setting it up and taking it down frequently. At this point, he could probably assemble it with his eyes closed, as if it is something he has always known.

COLTON GULLY studies environmental science at Huxley College to communicate the significance of humanity's experience on the earth.

HANNAH GABRIELSON is a marine ecology student and wildlife photographer. She believes the best way to make people care about something is to visually display its beauty.



ABOVE: *Troy Olsen sits next to a reef net model he used to take to public events and schools.*

BELOW: *A chum salmon swims into a commercial reef net. Commercial reef net fishing uses a modernized version of the traditional reef net.*

TRANSLATING SUSTAINABILITY

STORY BY **ISA KAUFMAN-GEBALLE**
PHOTOS BY **BEN KNOOT**

On an unusually-bright Sunday afternoon in south Seattle's Duwamish Valley, Sophorn Sim sits with a clipboard in her hands. On a creaky stoop, she speaks to Sean Phuong, a Cambodian resident of the South Park neighborhood. She points to the rusty storm drain at the edge of Phuong's property and pulls out a map, drawing a blue line from their location to the Duwamish River, about 1.5 kilometers north.

SIM IS ON one of her many weekly home visits to educate local immigrant residents about their contributions to stormwater pollution. In times like these, she shines as an educator, relating and conversing in her native language, Khmer, the official language of Cambodia.

Sim is a community outreach associate for the nonprofit ECOSS, formerly known as the Environmental Coalition of South Seattle. She devotes her time to bringing environmental education to the large immigrant community in South Seattle. She was awarded as the 2017 Sustainability Hero by Sustainable Seattle, a nonprofit organization focused on resiliency in the Puget Sound, for her work with the New Arrivals Program, which teaches environmental awareness to immigrants and refugees as they adjust to their new home. Sim also works on projects with the U.S. Environmental Protection Agency to spread the word about health-harming pollutants in waterways like the Duwamish River.

"My job is to help [immigrants] connect the dots," Sim said.

Sim notes language and cultural barriers are intimidating for immigrants who want to sustainably garden or minimize runoff from their household, but don't know how. One of the most critical ways to get the community involved is to gain their trust, which includes outreach in familiar settings, she said.

Ruben Chi Bertoni, a fellow community outreach associate at ECOSS, recalls Sim hosting presentations in her own living room. He describes Sim as determined to connect, noting her ability to convey information with empathy and inclusivity.

Sim speaks from experience about what it's like for refugees to establish themselves in South Seattle, unaware of the environmental hazards surrounding their homes. After escaping from the Khmer Rouge regime in Cambodia in 1979, Sim spent her childhood in refugee camps until she was able to secure refugee status in the U.S. Arriving in South Park, a neighborhood with large minority and immigrant populations, and some of Seattle's highest poverty rates, she recalls being oblivious to the pollutants gushing down her street and into the drain.

"Where we came from in the Cambodian community, we went through so much hardship: war-torn country, starvation, hard labor," Sim said. "We escaped the war and people thought so much, and worried so much, about their survival. They come here, work so hard, and environmental issues are the very least of their problems."

Knowing a portion of her community lives in the shadows of industrial buildings and factories, Sim is concerned long-term exposure to pollutants will mean a shorter lifespan for residents. Residents with South Park ZIP codes have an average lifespan 13 years shorter than that of the residents of Laurelhurst, an affluent, predominantly white neighborhood in North Seattle, according to a 2013 analysis by Just Health Action and the Duwamish River Cleanup Coalition.

One of Sim's biggest concerns is the popular practice of fishing in the Duwamish River.

"This is their culture," she said. "They are not fishing as much as they do in their home country or town, and when they have the river right next door, they try to fish. They are not necessarily aware of pollution."

Eating resident fish is dangerous to one's long-term health, increasing the likelihood for certain types of cancers and other health risks, according to a 2013 impact assessment by the University of Washington and other agencies. The river was added to the EPA's national priority list in 2001, due to high levels of chemicals such as PCBs and arsenic. Many of these chemicals make their way inside resident aquatic life like flounder or crab. Salmon, a non-resident fish, is excluded from the warnings.

After learning that many fishermen did not know about this advisory, Sim became involved with a study — informally known as the Fishers Study — which surveyed fishers' knowledge on the dangers associated with catching resident fish from the Duwamish.

Sim and her team at ECOSS interviewed as many fishermen as they could at popular fishing spots. They encountered nearly 20 ethnic groups fishing in the Duwamish River on a weekly basis. Fifty percent of the fishermen who were surveyed in non-English languages reported catching

LEFT: *Sophorn Sim (left) stands with Sean Phuong (right) outside of his house near the Duwamish River in Seattle, Washington.*

RIGHT: *Sean Phuong holds his new environmentally-conscious products from Sophorn Sim's home visit.*

resident fish species.

The study was unique because it was the first to focus on the voices of fishermen who frequented popular Duwamish River fishing spots, said Rebecca Chu, EPA's Duwamish River cleanup manager.

"We wanted it to be community-centric, and so we worked really closely with community members and tried to make it tailored as best as possible to the community so people would participate," Chu said.

Though the Fishers Study is over, Sim continues to visit non-English-speaking homes and businesses to give advice on sustainable practices and solutions each week.

At Phuong's home, Sim takes a jug of vinegar out of her mini-suitcase — she recommends it as an alternative to fertilizer.

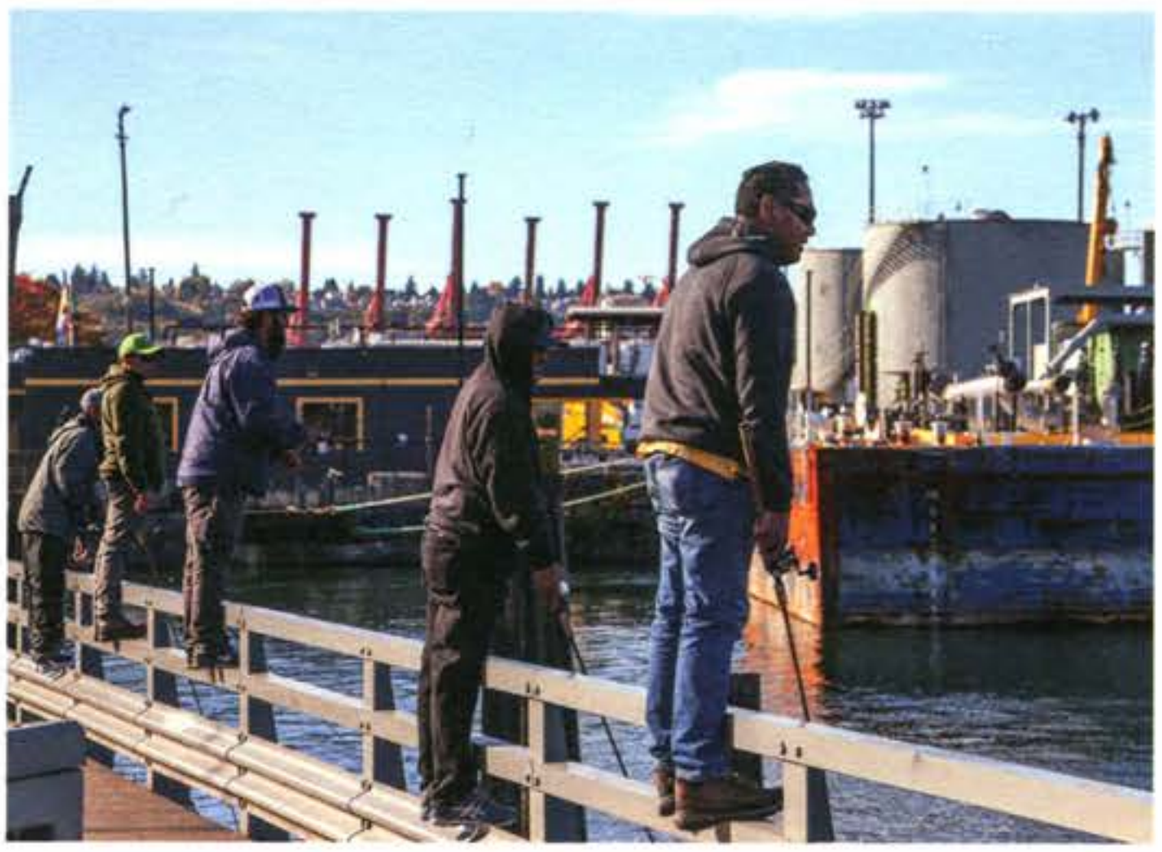
Sim stands next to Phuong as he shows her the last of the vegetables in his garden and enthusiastically talks about the leafy greens his grandson planted. She smiles, knowing he's not alone in his effort — he has family helping him.

"Everybody can be responsible to take care of our shared environment," she said.

ISA KAUFMAN-GEBALLE studies journalism and sociology, eager to unpack and share the stories of those most vulnerable to environmental issues. When she isn't writing, she produces short documentaries and volunteers at Western's radio station.

BEN KNOOT is a wildlife photographer and outdoor enthusiast studying environmental policy and environmental education at Western.

ABOVE: *Sophorn Sim hands Sean Phuong a bottle of vinegar he can use as an alternative to fertilizer in his garden.*
BELOW: *Fishermen wait for a bite along the Duwamish River. Resident fish in this river are often contaminated with harmful chemicals.*



NO CHILD LEFT *INSIDE*

STORY BY JUSTIN THOMPSON
PHOTOS BY ALAINA BASH

Tiny Trees Preschool students bundle up and go out on their educational hike.

Olive, a Tiny Trees Preschool student, eats a snowball before heading back to the outdoor classroom.

Tiny, brightly-colored rain jackets stand out against the snow-covered ground of Big Finn Hill Park in Seattle. Perched on logs, a group of around 14 preschoolers join together in song before heading out for a hike. The songs continue as their teacher leads them down the trail, subtly working in a lesson on numbers.

THIS IS A typical start to a day at Tiny Trees Preschool, soon to be one of the first all-day outdoor preschools in Washington state. Outdoor schools are environments where children learn and play outside. The state passed new legislation that will allow preschoolers to spend more time in the outdoors, offering an alternative style of early childhood education.

"It's not a fringe thing," said Heidi Bruce, co-founding board member of the Orcas Island Forest School, another outdoor preschool in Washington. "One thing I do want to emphasize is that historically, indigenous populations around the world have been doing this kind of nature-based pedagogy."

Bruce partnered with several outdoor preschools and state Sen. Kevin Ranker, D-Orcas Island, to help pass a state Senate bill establishing a pilot program to certify all-day, nature-based preschools or child care programs. If the pilot program succeeds, outdoor preschools will be able to get certifications to hold class outside for longer than three hours, which is the current maximum.

"It had really great bipartisan support, which nowadays sounds unheard of," Bruce said. "If your entry point is the environment and you want your kids to love it, it's like, OK, you're sold. If your entry point is health and fighting childhood obesity, they are active all day so there is another."

Currently, the program is in its planning year. Eventually, the pilot program will lead to 10 full-day sites around the state and will entitle them to receive state and federal subsidies. The Department of Early Learning will monitor the three-year pilot program. Roughly 40 half-day outdoor preschools and child care programs opened in Washington over the last decade, some with enrollment waitlists.

"Parents are really looking for more ways to give their kids more time in the natural world," said Andrew Jay, CEO of Tiny Trees Preschool. Tiny Trees has seven half-day outdoor preschools in the greater Seattle area.

The bill states the program will expand the number of high-quality schools for early learning because less money is required for physical facilities. This means more money can be spent on hiring and training educators. It costs about 30 percent less to run a nature-based school, Bruce said. With the new bill, low-income families will have greater opportunities to enroll their children in alternative preschools.

"Everyday, they are putting on these amazing little Alaskan fisherman suits, insulated rubber boots and they are having grand adventures," Jay said. "They're learning all of the preschool skills you would expect; introductions to letters, numbers and symbols, but they're also exploring this amazing outdoor space."

Play is a way for children to explore their abilities and test their limits, enabling them to develop problem-solving skills while building self-esteem, according to educational consultant Ruth Wilson in the 2012 book

"THEY'RE LEARNING ALL OF THE PRESCHOOL SKILLS YOU WOULD EXPECT...BUT THEY'RE ALSO EXPLORING THIS AMAZING OUTDOOR SPACE."

- ANDREW JAY, *TINY TREES PRESCHOOL CEO*

ABOVE: *Liz Boyle, a teacher at Tiny Trees Preschool, tells a story to her students.*

"Nature and Young Children: Encouraging Creative Play and Learning in Natural Environments." Outdoor play fosters creativity, allowing children to manipulate their environment using a variety of natural materials, Bruce said.

"It's different from other outdoor education programs where teachers say, 'OK, today we are going to learn about mushrooms,'" Bruce said.

At Orcas Island Forest School, children have storytime and are encouraged to talk about their morning before heading off into the forest for playtime. To ensure their safety, there are five children to every teacher. They use a flexible curriculum and base each day around the children's interests.

"I think [outdoor preschools] have extraordinary potential," said Nick Stanger, an environmental education professor at Western Washington University. "They help teachers remember that play is an important learning process and that being outside is just as valid as being inside in terms of learning."

While out on their educational hike, the children of Tiny Trees plunge their gloves into the snow and start to make snowballs. But before throwing them at each other, they ask their target for permission. The students at Tiny Trees are learning to respect each other and their environment. With planning for the pilot project underway, more students in Washington will begin to have the opportunity to form relationships with their ecosystem.

JUSTIN THOMPSON is an English major who plans to become an educator and creative writer. He has published a children's story in a literature magazine and his photos have been featured in the campus advising center.

ALAINA BASH is a student at Huxley College pursuing environmental studies with a minor in environmental policy. Her passions include photographing the natural world and loving every animal she encounters.

"All dogs!" Molly Linville calls across the ranch. Linville, a former wildlife biologist, has raised cattle on her ranch in Palisades, Washington, for seven years. As she opens the gate into the pasture, her pack of dogs, trained to herd cattle and ward predators off, follow her as she drives out into remote areas of the rangeland. Linville jokes that a squealing belt and the roaring diesel engine in her utility task vehicle act as an added protective measure to keep large carnivores off her property.

RANCHES WITH WOLVES

STORY BY **MALLORY COOKE**
PHOTOS BY **HANNAH GABRIELSON**

ABOVE: *Juno, a gray wolf-dog hybrid, stands in the rain at Wolf Haven International in Tenino, Washington.*

SINCE THEIR REINTRODUCTION to Yellowstone National Park and Idaho in 1995, gray wolves have slowly been making their way into Washington state. After almost a century without wolves, the Washington Department of Fish and Wildlife confirmed the state is now home to 20 wolf packs. While the presence of wolves may benefit ecosystems, ranchers in Washington are faced with the reality of learning to live with this new apex predator.

"You know, Little Red Riding Hood and wolves at the door," said Darrel Smith, a science adviser and carnivore specialist for Western Wildlife Outreach, a Port Townsend-based nonprofit that promotes education about large carnivores in the Northwest. Historically, wolves were vilified for preying on cattle and sheep stocks, which contributed to their local eradication. But sentiment has largely changed around this issue — nearly 75 percent of Washington residents supported local wolf recovery, according to a 2008 Fish and Wildlife study.

But issues between ranchers and wolves still exist. In 2014, these predators were responsible for the deaths of 30 livestock animals, according to a Fish and Wildlife wolf-livestock annual report from 2016. Two years later, Fish and Wildlife began killing the wolves associated with these attacks.

"Ranchers may kill a cougar or a coyote that is attacking their livestock and the environmental community seems comfortable with that — but wolves bring on another aspect, and it seems to be sort of an emotional one," Linville said. This seems to give wolves another set of teeth, putting ranchers who want to protect their cattle in a tough position, she said.

Land use has changed in the century since wolves were eradicated. A policy revision established in the 1930s opened up public forest lands for multiple uses, including livestock grazing and wildlife habitat. That means wolves and cattle now share a home. It also means many of these lethal removals take place on public land.

"So why isn't [losing a cow to a wolf] just a cost of being in business?" Linville said as she drove through the rough backcountry terrain. "Because cows get pneumonia and die, they get hit by cars and trains, they die in birth and they fall off cliffs." Money is often tight for ranchers, and losing a cow can mean anything from losing a few hundred dollars for a calf to $3000 for a bull, Linville said. "Wolves are just one more thing to absorb — and these costs are cumulative."

Wolves are not at fault for the policy landscape they walked into, and it seems unfair that they should bear the burden of these costs, Smith said. To protect wolf populations in Washington, Fish and Wildlife started working toward finding non-lethal alternatives.

Linville is a member of the Wolf Advisory Group, or WAG, a committee that advises the state Fish and Wildlife Department on its wolf policies. The group meets to discuss how wolf and livestock populations can coexist by recommending strategies to manage their interactions.

As she opens the gate into the pasture, the herd of 100 cattle move away as a group. Linville is one of few in the ranching community who practices low-stress livestock handling, a method that teaches cattle to work as a team to run predators off. Cattle used to behave this way on their own, but years of ranching allowed them to spread out across the landscape, leaving them more vulnerable, Linville said.

"When they're scared, they ball up and face outwards so they can see whatever danger is coming," she said. "And boy, they can deal with a lot when they work together like that."

Other non-lethal deterrence measures include using flags and other bright, moving objects to scare wolves away, and range riding, a technique that increases human presence in remote areas of rangeland.

Since non-lethal options do exist, state

"SO WHY ISN'T [LOSING A COW TO A WOLF] JUST A COST OF BEING IN BUSINESS?"

- MOLLY LINVILLE

FORMER WILDLIFE BIOLOGIST AND INDEPENDENT CATTLE RANCHER

wildlife officials have made it a requirement for cattle ranchers to have adopted at least one or a few non-lethal management practices before Fish and Wildlife will take lethal action. Conservation Northwest, an environmental group headquartered in Seattle, has collaborated with the state to educate ranchers on these methods, in an attempt to keep wolf killings to a minimum.

There are signs these efforts are making a difference. Wolf depredations on cattle have dropped from 30 deaths in 2014 to nine in 2016, according to the Fish and Wildlife report.

Most Washington livestock owners are open to learning how to use these tools if help is available, said Chase Gunnel, communications director for Conservation Northwest. Non-lethal management prevents ranchers from leaving their cattle unprotected for the grazing season, which Linville calls "set-it-and-forget-it" ranching. "To me, that's not a predator problem — and we need to be honest about that," she said.

Knowing how and when to use lethal control will take time to understand, but people are quickly making progress toward non-lethal options, Linville said.

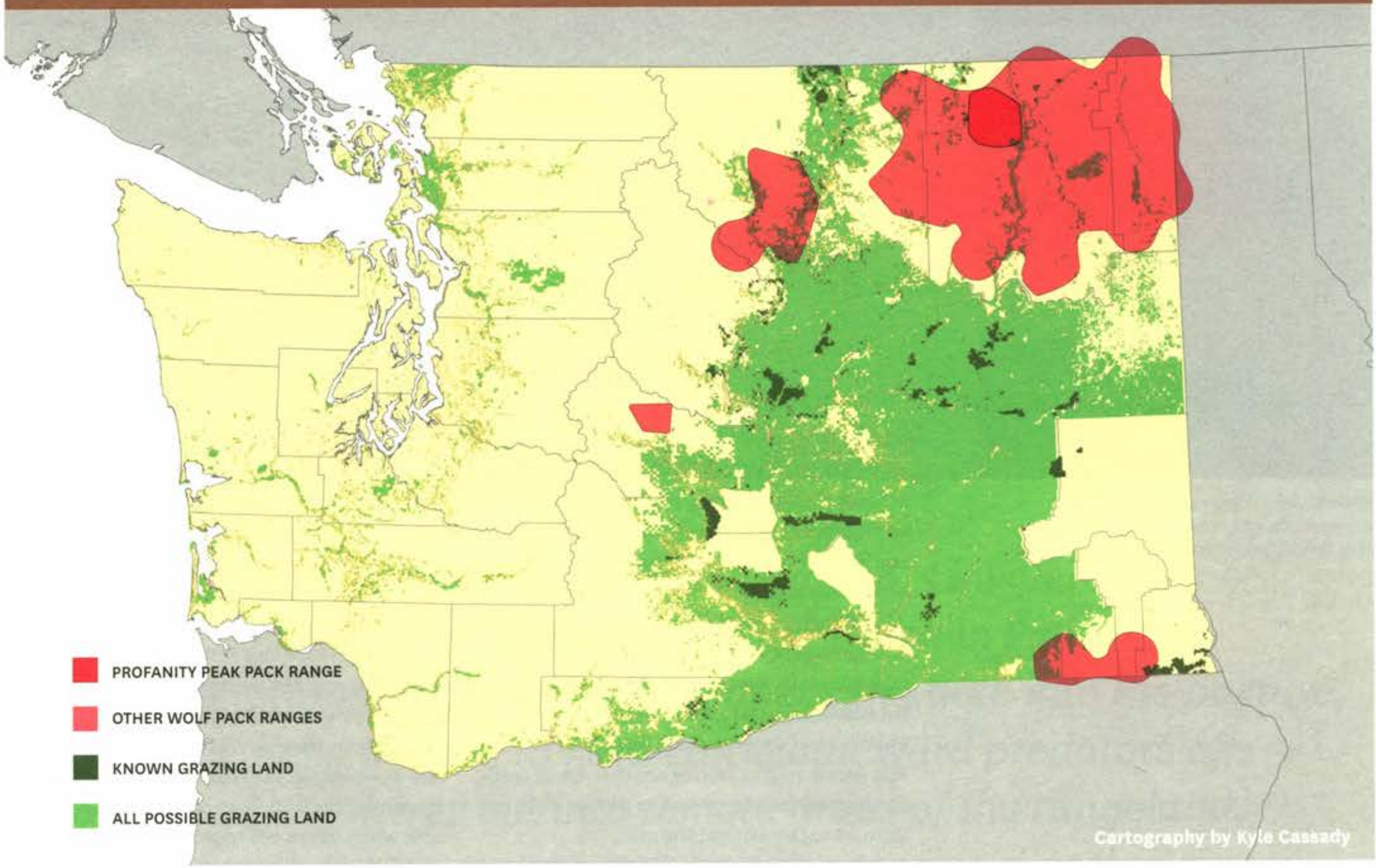
"It's in many ways more about managing the people than it is about managing the wildlife," Gunnel said.

As wolves continue to adjust to this area, Washington residents continue to learn how to adjust to their presence.

MALLORY COOKE studies environmental policy at Western to gain a deeper understanding of politically controversial topics in search of a middle ground.

HANNAH GABRIELSON is a marine ecology student and wildlife photographer. She believes the best way to make people care about something is to visually display its beauty.

WOLF PACKS AND GRAZING LANDS IN WASHINGTON STATE



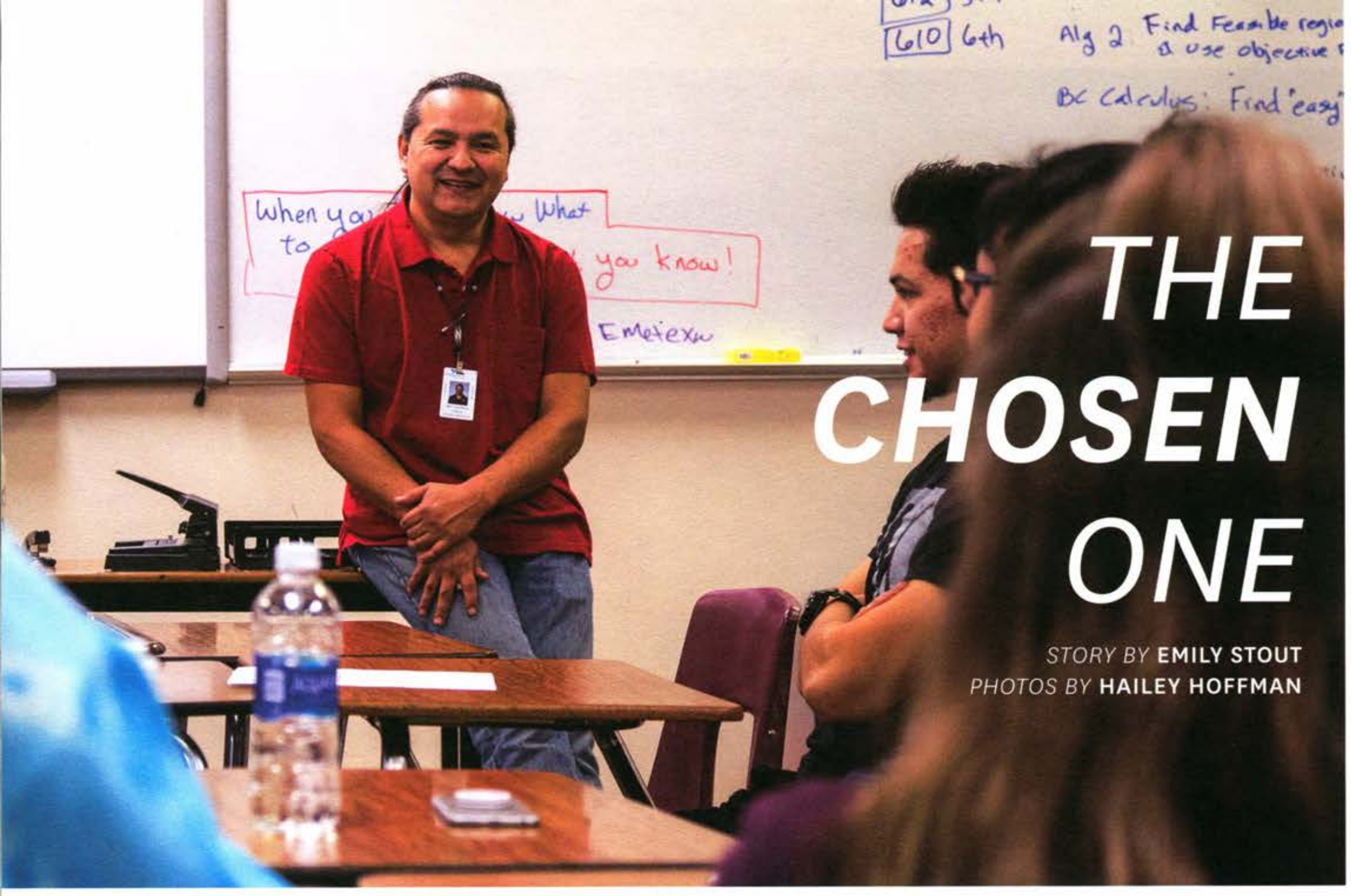
Wolfpacks in Washington are in close proximity to grazing lands. The Planet used a dataset specifying livestock grazing allotment and pasture boundaries for the "Known Grazing Lands" category. For the "Possible Grazing Lands" category, we combined land use that fell under agriculture and open space land and agriculture classified under 84.34 RCW, an open-land taxation act.

SOURCES: *Washington State Department of Ecology 2010; (Wolf pack data) Washington State Department of Fish and Wildlife 2016; U.S. Bureau of Land Management 2017; U.S. Geological Survey*

Cattle stand in open pasture land on Molly Linville's ranch. Linville practices low-stress livestock handling, a strategy used to avoid fatal encounters between wolves and cattle.

ABOVE: *A cow skull lies in a field on Molly Linville's ranch in Palisades, Washington. Wolves preyed on several cattle in Washington state this year.*

ABOVE: *Molly Linville, a former wildlife biologist, stands in front of her cattle on her independently-owned ranch in Palisades, Washington.*



STORY BY **EMILY STOUT**
PHOTOS BY **HAILEY HOFFMAN**

On a slow Monday at Ferndale High School, the bell rings and students shuffle into class. They walk around, talking and laughing among themselves. Suddenly, a soft hum sweeps across the room and everyone grows quiet. Matt Warbus stands in the front, wearing a teacher's badge and playing a traditional cedar flute. "Hello, my friends and relatives, my name is Smak i'ya' and I'd like to thank everyone for being here today," he says in Xwlemi Chosen, the Lummi language.

WARBUS, KNOWN TO his students and colleagues as Smak i'ya', has been the Lummi language teacher at Ferndale High School for 16 years. What began as a small Native American student club during lunch hour in the 1980s has blossomed into a large program that focuses on keeping the Lummi language alive among more than 600 Native American students in the district. Many are hopeful about the expansion of Native American education programs in Washington state as a counterweight to the long history of marginalized indigenous communities.

Giving students tools for success is the ultimate goal and Smak i'ya's dedication plays a large role in making that possible, said Jill Iwasaki, director of student services for the Ferndale School District.

"Ferndale is extremely lucky to have him," she said.

At the start of class, Smak i'ya' walks around the room and addresses students individually, asking them about their day and how other classes are going. In the front row, two students fist-bump and others chat about an upcoming fundraiser for a community service project.

"I think if I didn't have this class, I'd be more lonely," said Sadie Olsen, a student in Smak i'ya's Native American leadership class.

Smak i'ya' grew up in Lynden, Washington, until he started high school and left home. He hopped around to many high schools in Whatcom County before finally settling at the Lummi Nation School and graduating at the age of 21.

"I was looking for a place where I felt comfortable," Smak i'ya' said.

In 2015, the state Senate passed a bill requiring schools in Washington to include tribal history and culture in their curriculum. Part of the curriculum change is reaching out to local tribes, and for Ferndale, that meant more connection with the Lummi tribe. Iwasaki said the

ABOVE: *Smak i'ya holds his traditional cedar flute, which he plays for his students at Ferndale High School.*

LEFT: *Matt Warbus, or Smak i'ya', Lummi language teacher at Ferndale High School, speaks to students in his leadership class.*

Ferndale School District holds regular meetings with Lummi families and is increasing efforts to work with tribal members. This can be difficult because of mistrust harbored toward the public school system, Smak i'ya' said.

In Ferndale, much of the mistrust from tribal elders blooms from the racism that took place in public schools in the 1970s, Smak i'ya' said. During this time, tribes asserted their fishing rights, often meeting opposition from non-tribal fishermen. In 1974, Federal Judge George Hugo Boldt ruled 50 percent of the salmon catch in Washington state belonged to tribes with treaties, including the Lummi tribe.

This decision intensified anti-indigenous sentiments, affecting Native students in Ferndale on a daily basis, said Michael Marker, associate professor of indigenous studies at the University of British Columbia and head teacher of Lummi Nation School when it was established.

"There was a lot of confusion and oppression that had been part of the history of colonization that actually got played out in the schools," Marker said.

Smak i'ya' attended Ferndale High School for a short time in 1989, well after the Boldt Decision. Although it wasn't as severe as it used to be, Native students were often made fun of and sat in one area of the room out of fear of being bullied, he said.

In 2001, when Smak i'ya' was told he was going to be the Lummi language teacher in Ferndale, he was hesitant.

"It was mixed feelings," Smak i'ya' said. "Part of it was being excited, part of it was being afraid."

Smak i'ya' remembered the isolation he felt as a student in Ferndale, so it took a few years for him to finally settle into the job. Over time, however, he built lasting relationships with the students and faculty. "I began to realize that they actually appreciate the work that I am doing," he said.

After he earned an associate degree at Northwest Indian College and briefly attended Western Washington University, Smak i'ya' began doing cultural work for the Lummi tribe. In the mornings, he took part in Lummi language courses offered to tribal employees. Before work, Smak i'ya' learned vocabulary words and competed to memorize them with his cousin, who worked with him at the time.

When a linguist visited the tribe, Smak i'ya' realized the importance of spreading the language. Several Lummi elders recorded their knowledge of the language on tape and Smak i'ya' listened to those recordings with interest.

An estimated 155 indigenous languages are spoken in the United States. One-hundred-thirty-five of these, however, are classified as moribund — spoken only by adults and not effectively passed on to younger generations. There are 16 Native languages spoken in Washington state, but only a few of them have fluent speakers under the age of 60.

With support from Northwest Indian College, Lummi Nation School and Ferndale School District, the Lummi language is better off than many indigenous languages. Still, the Lummi language is considered to be nearly extinct according to the Expanded Graded Intergenerational Disruption Scale, a scale that Ethnologue, a publication about living languages, uses to assess the health of languages.

Education programs like the one at Ferndale High School give languages a legitimacy that Lummi was previously denied, said Judy Pine, a linguistics professor at Western.

"Having that recognition that you have a real language with real grammar — I think it's a powerful tool for communities," Pine said.

Smak i'ya' said having these classes at the public school has a positive impact on the students' confidence. All his classes are open to non-native students and he hopes this creates an environment of inclusion. He now teaches a two-year Native American leadership program in addition to language. With help from students, he may be able to begin teaching elementary classes in the next few years.

"IT WAS MIXED FEELINGS. PART OF IT WAS BEING EXCITED, PART OF IT WAS BEING AFRAID."

- SMAK I'YA'
LUMMI LANGUAGE TEACHER AT FERNDALE HIGH SCHOOL

Since Smak i'ya' started teaching, the language program has expanded to Horizon Middle School. He would like to see it grow into all the middle schools and elementary schools in the district.

Smak i'ya' said above all, he wants to create a space where students know they can be successful.

"I am about building consistency and stability for my students," he said. "This lets them know that they can depend on me, and that I'll always be there for them."

EMILY STOUT is a journalism student at Western. She spends approximately 70 percent of her life in coffee shops and loves learning about new people and places.

HAILEY HOFFMAN studies visual journalism and Spanish at Western. She loves to spend her time travelling and hiking with her camera.

CAUGHT BETWEEN **EXTREMES**

STORY BY **SOPHIA ROUCHES**
PHOTOS BY **HAILEY HOFFMAN**

"¡Sí, se puede!" a group of picketers chant, standing alongside a county road nestled between rows of berry crops, a stone's throw away from the Canadian border. Farmworkers emerge from their fenced-in trailer homes to listen as Ramon Torres, president of Familias Unidas por la Justicia, declares, "These people are making money off our backs, people were getting sick... We're gonna keep fighting for what we think is right, our rights."

LEFT: *Ramon Torres, president of Familias Unidas por la Justicia, leads protesters in a chant outside of Sarbanand Farms near Sumas, Washington.*

IN EARLY AUGUST, a line was drawn — or rather, a row of bushes — separating Sarbanand Farms near Sumas, Washington, from a crowd of workers and community members. Workers were protesting in response to the death of Honesto Silva Ibarra, a 28-year-old berry picker who worked at the farm. They were fired the next day.

In October, former workers continued to march outside the farm's property lines, claiming poor working conditions and unfair treatment. Sarbanand Farms insists they are committed to providing a safe, clean and supportive work environment for all employees.

Justice for migrant workers has long been a pursuit of Community to Community Development, or C2C, a grassroots program based in Bellingham, Washington, that advocates for food sovereignty and immigration rights. They organized the picket.

The workers were part of the federal H-2A visa program, which gives migrant workers a temporary visa for seasonal agricultural work with specific farms in the United States. The farm covers housing, food and travel expenses, and guarantees work for the duration of the workers' contracts. However, C2C advocates say H-2A actually hurts migrant workers.

"It's basically a way for companies to bring in workers that are expendable and that they get complete control over," said Edgar Franks, the civic coordinator for C2C. "Workers can't raise any issues without the fear or threats of losing their job, or never being able to come work in the United States again and make the money that they need for themselves and their families."

In early August, Ibarra was admitted to a Bellingham clinic after complaining of severe headaches and fever. In response, over 60 workers refused to show up to work because they felt Ibarra was denied medical attention by Sarbanand Farms. Additionally, workers allege poor working conditions, a lack of access to drinking water and being served spoiled food, Torres said.

These workers were fired by Sarbanand Farms on Aug. 5 for violating their contracts by not showing up to work. When the farm instructed workers to move off the premises, some members of the community stepped forward, offering their yard as a temporary home for workers. C2C and community members dropped off tents, food and warm clothes for the fired migrant workers as they figured out what to do next. Ibarra died on Aug. 6 after he was airlifted to Harborview Medical Center in Seattle.

While C2C provides a strong support system for migrant workers, several organizations have assembled to defend the farm owners, including Save Family Farming, an advocacy group based in Burlington, Washington, that supports farmers.

"While farmers are understandably upset about the many false accusations and the portrayal in the media as heartless and cruel employers, our primary concern is the harm done to these workers who are being manipulated by the activists for their own benefit in generating union dues," said Gerald Baron, the executive director of Save Family Farming, in an email.

Sarbanand Farms released a press update on Aug. 15 stating they offered transportation for the fired migrant workers, 25 of whom had already accepted. Additionally, the farm said, "We were all deeply saddened by the loss this past week of Mr. Honesto Silva Ibarra, even after he received the best medical care and attention possible as soon as his distress came to our attention."

Sarbanand Farm's lawyer said according to Ibarra's death certificate, he had diabetic ketoacidosis and died from natural causes. Diabetic ketoacidosis occurs from a severe lack of insulin and extremely high levels of blood glucose and when untreated, it can be fatal, according to the Centers for Disease Control and Prevention. Sarbanand Farms said they were unaware of Ibarra's diabetes, according to their Aug. 15 statement.

"THIS IS NOT THE WAY THAT WE WANT OUR FOOD SYSTEM TO GO. IT'S EXPLOITING ALL OF OUR RESOURCES AND EXPLOITING THE LABOR OF OUR PEOPLE. I THINK THAT WE CAN DO BETTER."

- EDGAR FRANKS

CIVIC COORDINATOR FOR C2C

Franks said out of the group of fired workers, several had severe dehydration, headaches and nausea and were taken to the hospital. "Some people were having partial facial paralysis... a young man's foot was almost amputated because he didn't want to take the day off in fear of getting fired," Franks said.

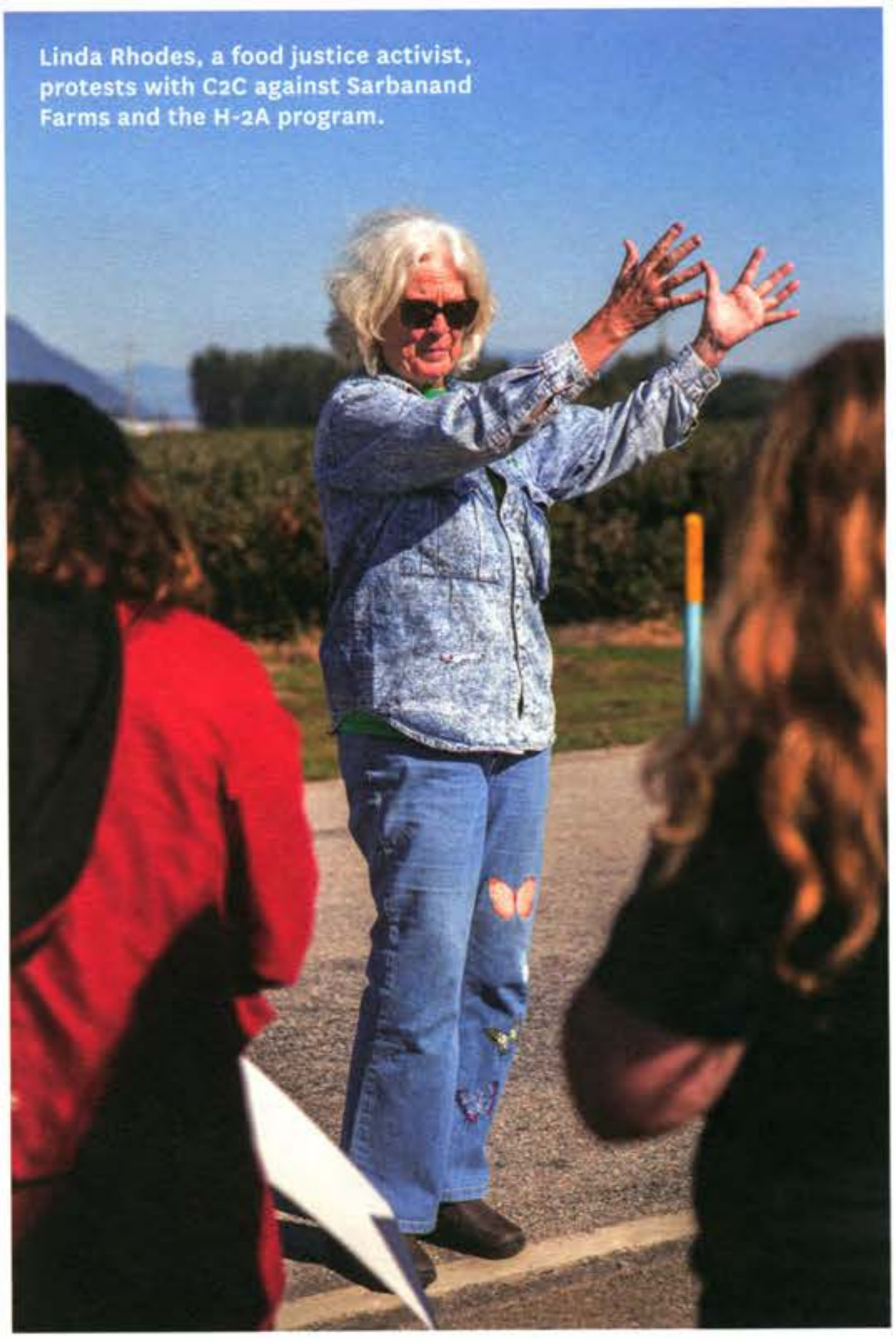
Baron responded in an email and said, "Almost everything claimed by the activists is false."

Following the death of Ibarra, over 500 workers finished the season at Sarbanand Farms. At a protest in October, Javier Villanueva, an H-2A worker, explained why he continued to work at the farm while protesters chanted nearby.

"If they're not doing anything bad to you, would you quit your job?" Villanueva said in Spanish. "We need the money and the work... we're kind of stuck in the middle. So, everybody has to look out for their family... we want to keep working."

The Department of Labor is responsible for the oversight of H-2A, ensuring regulations are followed. This year in Washington state, there were over 15,000 H-2A workers — a number expected to increase next year.

BELOW: *Javier Villanueva, an H-2A worker from Mexico, remains at Sarbanand Farms despite the recent death of fellow worker Honesto Silva Ibarra.*



Linda Rhodes, a food justice activist, protests with C2C against Sarbanand Farms and the H-2A program.

"That's just a huge amount of workers for any department to look after," Franks said. "Investigators don't go unless there is a complaint, and if no one is complaining everybody thinks everything is good."

Sarbanand Farms said they are cooperating with the Department of Labor as they investigate working conditions on the farm. They have not released further updates on the investigation.

Berry-picking season has come to an end in Western Washington, and H-2A migrant workers have headed home. Meanwhile, farmworker activists continue to support and raise the voices of farmworkers.

"This is not the way that we want our food system to go," Franks said. "It's exploiting all of our resources and exploiting the labor of our people. I think that we can do better."

SOPHIA ROUCHES is a Huxley College student studying environmental education. She is passionate about connecting people to the environment. Her work is driven by her love for the natural world.

HAILEY HOFFMAN studies visual journalism and Spanish at Western. She loves to spend her time travelling and hiking with her camera.

Brian Flowers, lead funeral director and green-burial coordinator for Moles Farewell Tributes in Bellingham, Washington, bends down by a green-burial plot.

A DYING TRADITION

STORY BY **COLLEEN SAWYER**
PHOTOS BY **ALAINA BASH**

On an overcast October morning, a light drizzle softens the ground in a grassy meadow. A trail meanders past several piles of light bark, each of them as unique as the people buried underneath. On one mound, bearberry has taken over and raindrops drip from the leathery evergreen leaves. On another, stand the bones of two baldhip rosebushes, seemingly lifeless. But Brian Flowers assures that come spring they will blossom.

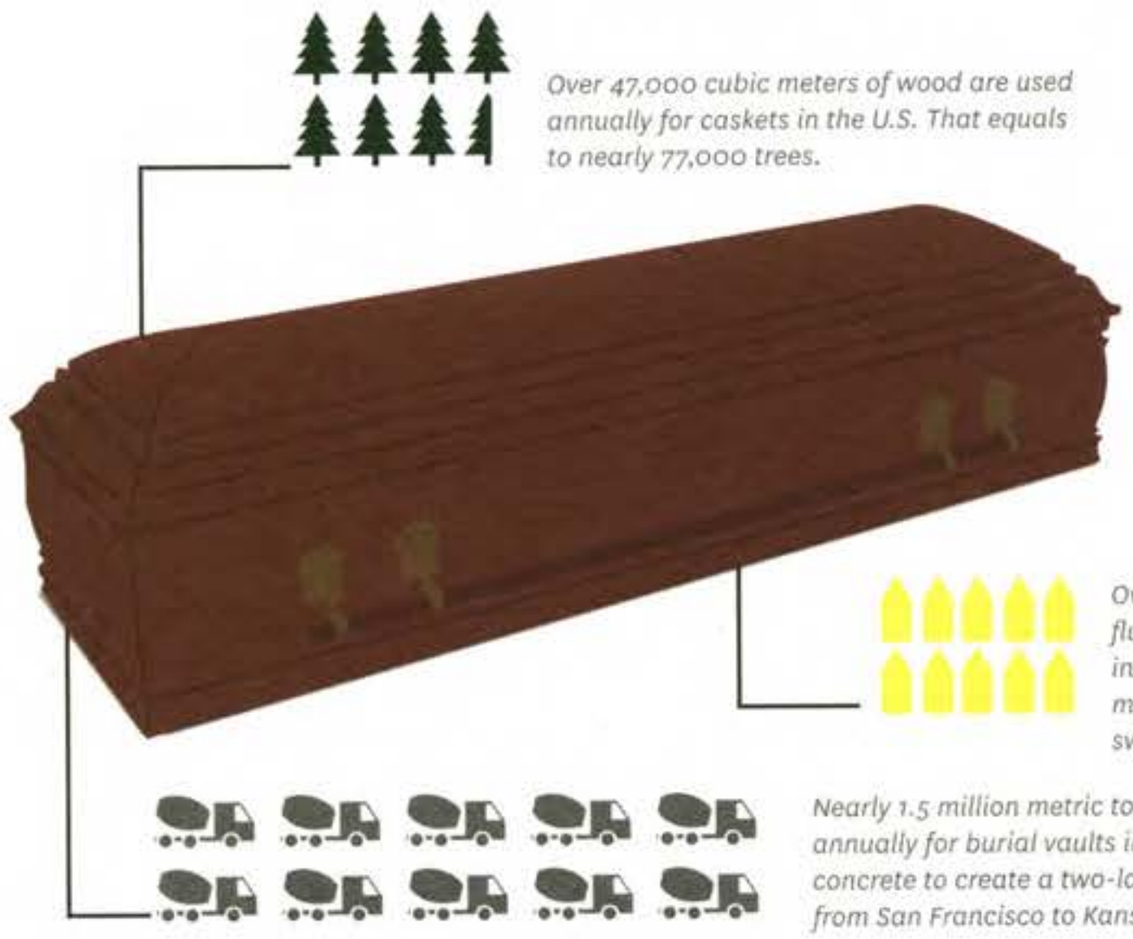
FLOWERS IS THE lead funeral director and green-burial coordinator for Moles Farewell Tributes in Bellingham, Washington. While the environmental impacts of death are not a primary concern for most people, conventional burial methods have consequences that are often overlooked. Flowers is part of a growing trend toward an eco-friendly alternative.

"I never in my wildest imagination would have thought that I'd be a funeral director," Flowers said.

Flowers originally worked as a cabinet and furniture maker. While working on a kitchen one day, Flowers noticed the pantry's shape resembled a casket. Wondering how to go about creating a simple coffin, Flowers called family friend John Moles, the fourth-generation owner of Moles Farewell Tributes, a funeral company. Moles told Flowers about green burial, which involves a locally-made, sustainably-harvested hardwood casket.

Blowing the sawdust out of his ears and nose, he arrived at Moles' funeral home nearly a decade ago in his only pair of khakis and a but-

CONVENTIONAL BURIAL RESOURCES



SOURCE: *Mary Woodsen, lead research director for the Green Burial Council*

ton-down shirt. Flowers offered to help develop, design and oversee the space that would become The Meadow, the 12th green-burial ground in the country and the first connected to a conventional cemetery.

Green burial is an alternative to contemporary burial methods, allowing the body to recycle back into the earth. Without toxic embalming, the body is placed in a biodegradable container, such as a wooden casket, a muslin shroud or a grandmother's handmade quilt. Instead of traditional grave markers, families have the option to plant native species, aiding in the restoration and conservation of the natural habitat.

The two most popular treatments of the dead, traditional burial and cremation, have grim environmental impacts. Traditional burials require embalming the body with formaldehyde, a known carcinogen. Each year in the U.S., nearly 1.5 million metric tons of concrete for vaults, over 47,000 cubic meters of wood for caskets and over 100 million liters of embalming fluids are buried in the ground, said Mary Woodsen, lead research director for the Green Burial Council. That's enough concrete to create a two-lane highway stretching from San Francisco to Kansas City, nearly 77,000 trees and sufficient embalming fluid to fill more than six Olympic-sized swimming pools.

Furthermore, in traditional caskets and burial vaults, bodies will decompose anaerobically, meaning the lack of oxygen will cause the bodies to release methane, a potent greenhouse gas.

Though it's gaining popularity as an alternative to conventional burial, cremation still has negative environmental impacts. Cremating one body uses the same energy contained in 20 gallons of fuel, said Woodsen. In 2010, more than one million bodies were cremated in the U.S., amounting to enough fuel to drive a 30-mpg car around the earth 25,000 times.

"Nothing epitomizes our divorce from the natural world more than contemporary funeral practices," Flowers said.

He walks through the meadow, lively and determined, even as the sheets of rain begin to thicken and a gloom settles in. As he points out the various mounds that jut from the ground along the trails, Flowers begins to explain the process that created these hills.

For green burial, each grave is dug to a depth of around one meter, shallower than a conventional grave. The shallow grave, layered with cut flowers, twigs and sticks, allows for more microbes, oxygen and moisture to speed up the return of nutrients to the land.

The orthodox nature of the funeral industry makes it easy to be a visionary, Flowers said. At his first green-burial conference, he remembered receiving death stares from a crowd of conventional funeral directors. Over time, attitudes toward green burial have shifted — by his last presentation on green burial, hundreds attended, asking how they could learn more.

Recently, several other advocates for eco-friendly death care have emerged, such as Katrina Spade, a friend of Flowers' and founder of the Seattle-based company Recompose. Spade is attempting to take the principles of green burial, which are usually limited to rural or suburban locations, and apply them in high-density urban areas. To do that, Recompose is working to create a model facility using a space-efficient design filled with sawdust and woodchips in hopes of naturally decomposing bodies over a span of 30 days. If this model, set to open in Seattle, proves successful, Spade hopes to build similar facilities around the world.

Inside the dimly-lit funeral home, Flowers removes his puffy, navy-blue jacket. For just a second, light glimmers in his eyes.

"I see daily how people take comfort around death," Flowers said. "Energy is neither created nor destroyed, it just changes forms."

COLLEEN SAWYER is a Western student studying environmental journalism. She is interested in the media's role in shaping the social debate surrounding current environmental issues.

ALAINA BASH is a student at Huxley College pursuing environmental studies with a minor in environmental policy. Her passions include photographing the natural world and loving every animal she encounters.

STORY BY **ELIZABETH CUTLER**
PHOTOS BY **GRETA LOZADA**

ONLY AS PRESCRIBED

Smoke swells up into the trees while a prescribed fire burns the brush on the ground outside of Plain, Washington.

The white pickup truck cruised along the mountainside, leaving the small Bavarian-styled village of Leavenworth, Washington, behind. The deeper into the forest it went, the darker the sky turned. Within seconds, a blanket of black smoke covered the road like a warning. A fire was near.

While the smell of burning wood might normally be a cause for alarm in this forest with a history of massive wildfires, Hilary Lundgren showed no concern as she parked and stepped out of the pickup truck.

Nearby, under a forest canopy, a bright-yellow jacket acted like a beacon. Tilting flames out of a silver torch, a firefighter walked along the designated section of land as the flames followed his footsteps. Bushes crackled as they ignited. This was no typical wildfire. Lundgren wanted this one to burn.

AS WILDFIRES INTENSIFY in the Okanogan-Wenatchee National Forest, which surrounds much of Leavenworth, residents, government officials and others have banded together over the last decade to learn how to live with fire. This fall, the forests outside this town became the testing ground for the state's first prescribed fire-training conference, where people could learn how towns can adapt to the threat of wildfires.

"People normally see fire in a bad way, but we look at fire in different parameters," said Michael Barajas, an assistant fire manager officer.

The conference aimed to educate emergency responders on prescribed burns. As fires were set throughout four different watersheds, Lundgren, program director for Fire Adapted Washington, a network that helps communities live with wildfire, worked with local residents to educate them about the risks of wildfire.

The conference was held in part by the Chumstick Wildfire Stewardship Coalition, created in 2008 to implement a community protection plan. The coalition, where Lundgren previously worked, removes brush surrounding the town to reduce the risk of a fire burning through the streets. They also help businesses plan for what could occur when a megafire — a fire that burns more than 400 square kilometers — arises, such as electrical outages and food shortages. In Leavenworth, education and outreach about prescribed fire only started about two years ago.

In most schools, students learn the steps to survive an earthquake. In Leavenworth, they learn how to survive a megafire. While different natural threats require different protocols, some safety measures are the same across all hazards. The Red Cross brings pillowcases — a concept from Hurricane Katrina — and educates students about emergency preparedness.

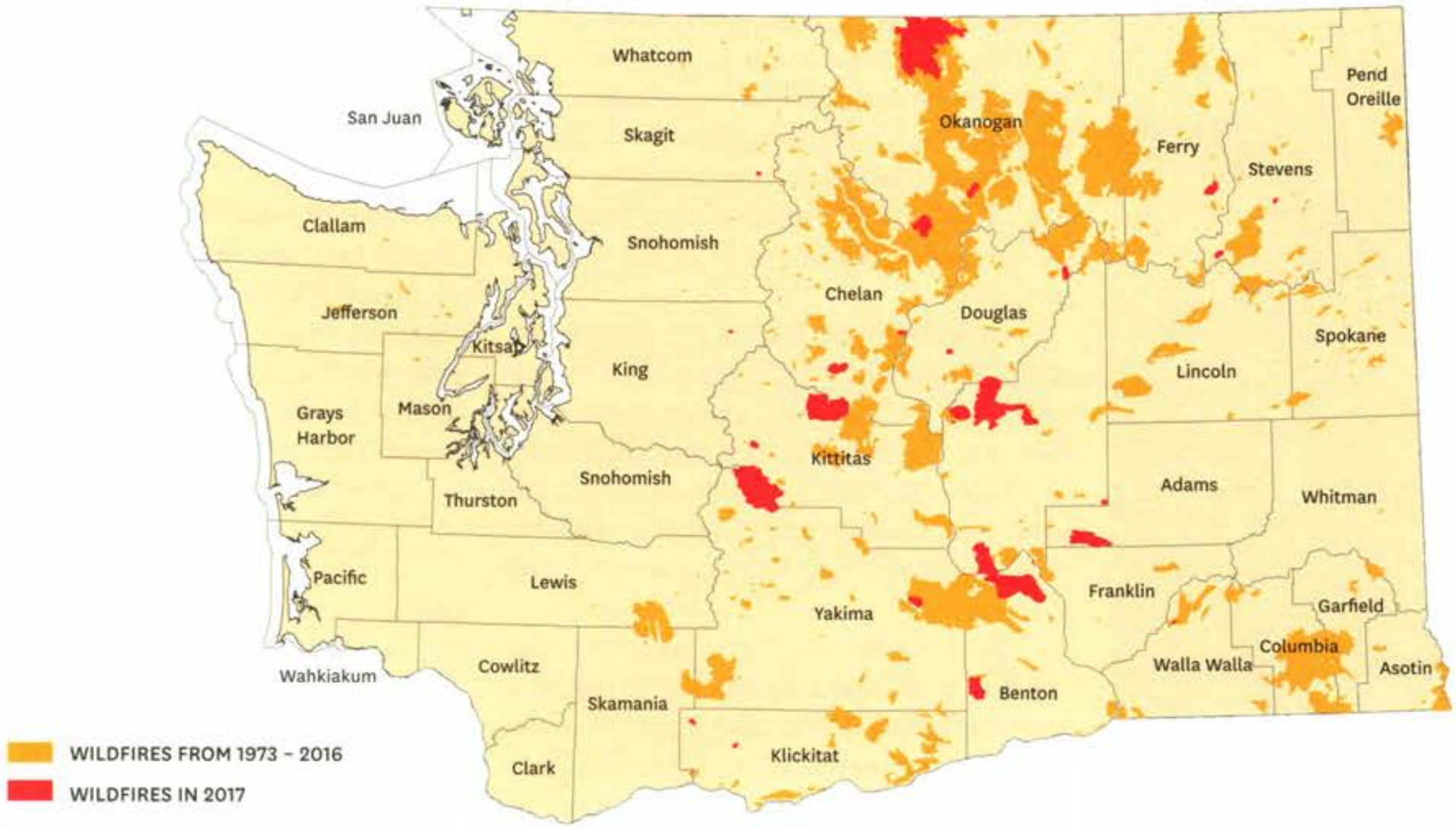
"Living on the east side of the Cascades, you kind of come to expect fires," Lundgren said. "It is a normal part of life, just like rainy season on the west side of the Cascades."

In 1910, the largest wildfire in U.S. history ripped through more than 12,000 square kilometers of Washington, Idaho and Montana, killing 87 firefighters. The devastation prompted the U.S. Forest Service to implement strict fire-suppression measures. Traditional fire suppression causes forests to become overcrowded with snags and debris, making it more likely for megafires to occur.

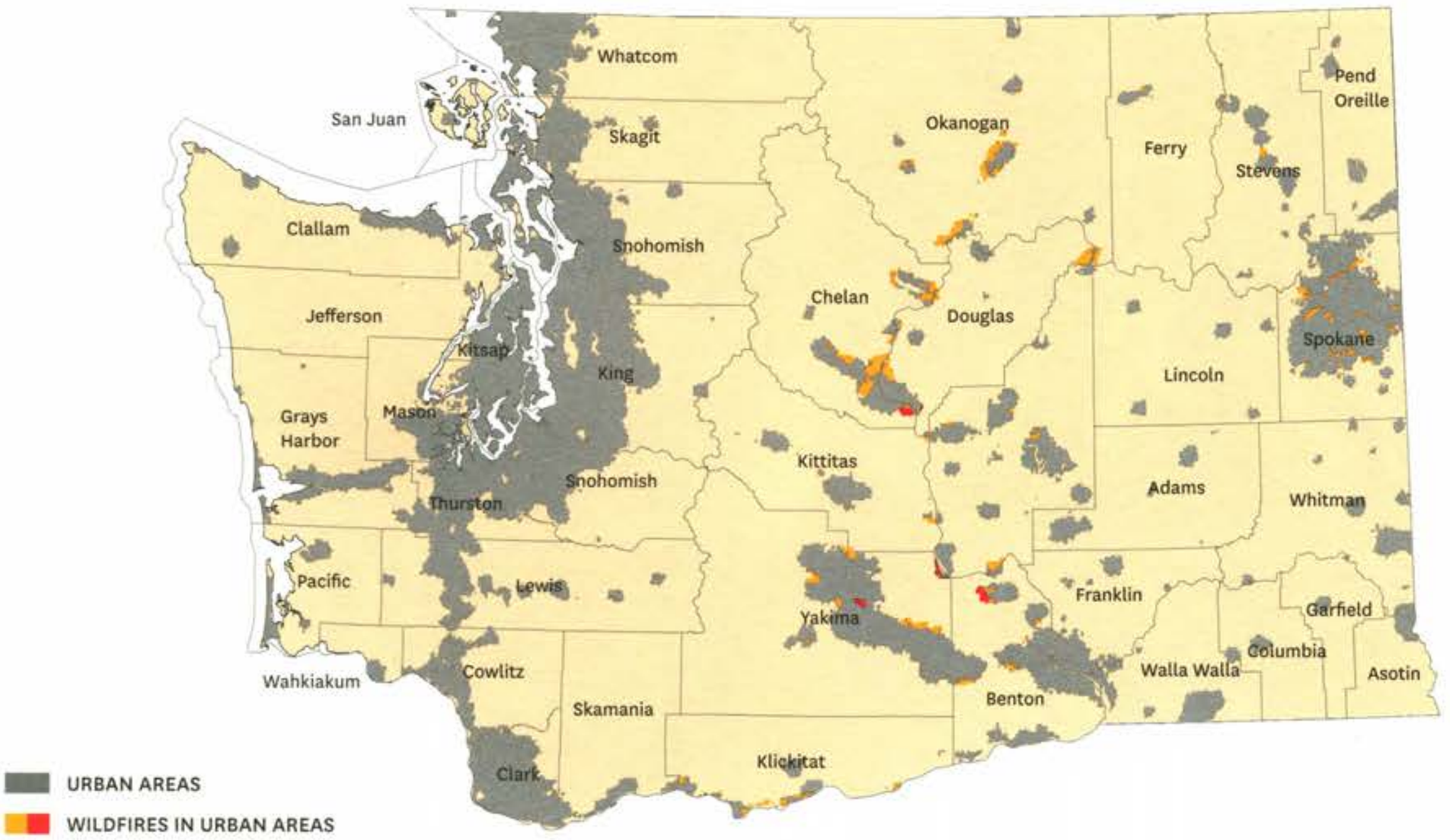
"The problem in some places [is that] fire suppression changes the ecosystem," said Michael Medler, an associate professor in

ABOVE: *A firefighter sets a prescribed fire on the side of the highway in Plain, Washington. Prescribed fires help to minimize the intensity of future wildfires.*

WILDFIRES FROM 1973–2017



URBAN WILDFIRES FROM 1973–2017



Wildfires from 1973–2017 versus urban wildfires from 1973–2017. In this analysis, urban areas are defined as areas where enough light is emitted to be detected by the Defense Meteorological Satellite Program Operational Linescan System. Our map shows a total of approximately 8653 hectares of urban area burned in 2017.

Source: Geogmac.gov (Department of Natural Resources, U.S. Department of the Interior, U.S. Department of Agriculture, U.S. Geological Survey); National Oceanic and Atmospheric Association and The Defense Meteorological Satellite Program

Cartography by Kyle Cassady

ABOVE: *Nolan Brewer is a firefighter who attended the prescribed-fire training conference in Plain, Washington, where experts learned how to use fire as a protective measure against megafires.*

BELOW: *The sun is blanketed by thick smoke from the flames of a prescribed fire burning in the Okanogan-Wenatchee National Forest.*

environmental studies at Western Washington University. "If you had a fire regime where 100 years ago there was a fire every five to six years and you stop fires for 100 years, you're going to have a forest that looks incredibly different."

Strict fire suppression lasted nearly a century, until prescribed fires were reintroduced to Washington in 2004. Prescribed fire is a burning method that thins away all forest debris that can fuel a fire. Typically, it is a low-intensity fire that rarely exceeds a height of about one meter.

Prescribed fires are not a new concept. Native Americans used fire to nourish the environment and improve hunting, said Kara Karboski, the fire landscape and community coordinator at Washington Research Conservation and Development Council, a nonprofit organization that finds solutions to natural resource issues.

"A lesson for our communities that live out here is to expect fire because it was here historically, and it is actually essential to the forests and for the resilience of the forest," Karboski said. "We need fire to return nutrients back into the soil."

Unlike much of Western Washington, Leavenworth's dry climate makes it harder for nutrients to return to the soil. In forests with more precipitation, moisture allows microbes to easily digest organic material. For dry forests that lack sufficient moisture for microbes, fire provides a means to break down plant matter and return nutrients to the soil.

At the edge of the forest where the prescribed fire was burning, two small signs warned people not to enter. Firefighters leaned against white pickup trucks and watched the flames flicker across the forest floor as the two-week prescribed-fire training conference came to an end. With a new site in mind, Lundgren jumped back into the truck. As the black sky disappeared in the distance, the sun returned. Lundgren veered off the road near a patch of land sprouting a new generation of trees and brush. A year ago, a prescribed fire left this spot charred and littered with ash. Today, it's one of Lundgren's favorite spots.

ELIZABETH CUTLER is an energetic journalist who loves hunting down new stories, while working on a public relations degree.

GRETA LOZADA is a photographer from Minnesota. Her focus is environmental studies, with hopes to initiate policy change in communities to ensure a healthier environment.

THE PLANET MAGAZINE | **MULTIMEDIA**

Lisa Wilson is a Lummi tribal member working and speaking for her people in the northwest corner of Washington state. This is the story of where she found her voice and how she is using it now.

JON CARROLL studies documentary film at Fairhaven College. He balances his days between promoting change in the Salish Sea ecosystem and climbing its extraordinary granite.

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CLASS OF FALL 2017

TOP FROM LEFT: *Ben Knoot, Evan Donnelly, Jon Carroll, Emily Stout, Hailey Hoffman, Alaina Bash, Hannah Gabrielson, Mallory Cooke, Jonathan Flynn, James Egaran*

BOTTOM FROM LEFT: *Sarah Zischke, Isa Kaufman-Geballe, Emma Schumacher, Colleen Sawyer, Elizabeth Cutler, Greta Lozada, Sophia Rouches, Colton Gully, Jon-Mycal Panattoni, Justin Thompson*

"Education, if it means anything, should not take people away from the land , but instill in them even more respect for it."

- WANGARI MAATHAI