MAY 2021

# BLOT MAGAZINE

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# EDITOR'S NOTE

Dear Reader,

The smell of fresh rain lingers in the air. The concrete glistens with the reflective glow of water and mud forms on the ground which was recently covered in snow. The birds are chirping. The flowers are blooming. The sun shines in the middle of a bright blue sky. It's spring.

We have been living in a pandemic for over a year now. As vaccines roll out and we begin adjusting to a new normal, it's important to take the time to see the world around us.

In this issue of Blot, we give ourselves an opportunity to share the wonders of Idaho's landscapes. Our writers and photographers have taken to local hiking paths to find the best views in the area. We talked to plant enthusiasts, including local plant store owners, about advice for students who want to bring a little bit of green into their homes.

Local beekeepers share the highs and lows of beekeeping and honey production, and entomologist Brad Stokes shares how pesticides are harming Idaho's native bees. We dive into unique hobbies such as rockhounding and talk with experts on the importance of fire and how we manage it. Our photo story focuses on the Idaho's fish populations and the College of Natural Resource's wet labs.

The world is healing together. This past year was tough, but we're still here. As we head outside to see the sun shining and the grass turning green, we can be assured there is still beauty out there if we just take the time to explore it.

B. Finnegan

Brianna Finnegan
Editor-in-Chief

# IN THIS ISSUE:

# A STRESSED-OUT STUDENT GUIDE TO HOUSEPLANTS


**Story By** *Bailey Brockett*
**Photos By** *Cody Roberts*
**Illustration By** *Dani Moore*
**Design By** *Dani Moore*


SIGNS FOR MASKS, AND A REDUCED CUSTOMER CAPACITY ARE VISIBLE THROUGH A VEGETATION-FILLED WINDOW IN A MODERN PLANTSMAN.

## YOUR TINY DORM WINDOW DOESN'T MEAN YOU CAN'T HAVE THE PINTEREST PLANT AESTHETIC YOU'VE ALWAYS DREAMED OF

Do you have the finals week blues combined with COVID-19 isolation woes? It may not be a solution to any of your academic or virus struggles, but a plant may bring a new sense of life into your pandemic infested world. Not sure where to start? Let the plant enthusiasts help.

### The Plant Enthusiasts

Trina Anderson is a nursery worker at SYG Landscaping and Nursery in Pullman. She has been with SYG for five years and has been learning the difference between weeds and plants since she was young. With a houseplant expert for a mother and a landscaper for a father, Anderson picked up her plant knowledge easily.

"I learned a lot from them growing up and through hands on experience," Anderson said. "I also read a lot."

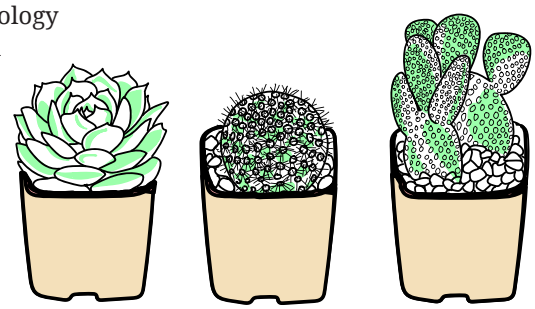
Dominic Villareal is the owner and founder of A Modern Plantsman in Colfax, Washington. He found an interest in plants about 10 years ago when he took walks around his neighborhood in southern California and would pick up various plants to take home. He bought his first plant, an alocasia, around the same time.

"I remember just being really fascinated by the huge leaves of an alocasia," Villareal said. "I thought, 'How cool is this? It's called an elephant ear, and these leaves can get bigger.'"

Chrissy Nimnicht is a member of the UI Plant and Soil Science Club (PSSC), a plant hobbyist and a plant pathology major. She has been growing and working with plants from a young age.

She used to grow plants with her grandmother, who had an orchard and a massive garden. They often grew Christmas cactus and experimented with geraniums. A current favorite of hers is a Mexican cactus that sits amongst her myriad of plants atop her desk.

"Being in Moscow, and being on campus, my gardening is limited to what can go on my desk and my windowsill," Nimnicht said.



**Why You Should Invest in Plants (Yes, Even in a Dorm or Apartment)**

These experts all agree plants are a great addition to any home because they can make a dorm or apartment feel more alive.

"It's something alive and green there with you," Anderson said. "It brightens up the space and makes it feel more comfy and homey. You can talk to them and they don't talk back."

"For me, they bring a therapeutic value," Villareal said. "They give a space life because it's literally a living thing. I think caring for something and tending to it brings a lot of value to my life."

"It's so nice to see something green and growing in your space, especially if you're stuck in an apartment looking at the side of another building," Nimnicht said. "Most people, when they go to college, also leave their pets behind and it can be really hard to adjust to not having a living thing to take care of."

**What Plants Should You Get?**

Anderson recommends spider plants. These plants don't require a lot of light or water, so they are quite forgiving and difficult to kill. They need four to six hours of indirect light daily, whether that is from natural light or a grow light, a light that provides rays similar to the sun's spectrum. If you put them in direct light, they will get sunburnt. They are easy to propagate because they send out long shoots with a few blossoms of baby plants. You can propagate these in water or moist soil and grow entirely new plants.

"You can generally tell when they need to be repotted because they'll outgrow the pot," Anderson said. "If you can see roots sticking out the bottom, go up one pot size."

She also recommends succulents because they don't require much light or water and tend to be forgiving, similar to spider plants. Specific succulents she suggests are aloe, jade plants and haworthia.

DOMINIC VILLAREAL POSES IN FRONT OF THE PLANT WALL HOLDING A LEMON-LIME DRACAENA IN A MODERN PLANTSMAN.

Villareal recommends anything slow growing and low maintenance. Plants that are problem-solvers and don't require much light work well in dorms or apartments that don't have ideal space or lighting.

"A lot of times people come into the shop and they say 'I have no lighting,'" Villareal said. "And I say, 'Well you'd be surprised out how many plants don't need a lot of direct light, they just need some sunlight.'"

Some of the easiest plants Villareal refers customers to are drought tolerant plants such as snake plants, sansevieria, Zamioculcas zamiifolia plants and anything that requires watering less than once a month.

Nimnicht is a succulent fan and recommends them to anyone in small spaces. These will do well on a windowsills or anywhere that gets some amount of light.

"Succulents, in general, are great for small spaces, because most of them do grow in shady conditions of hostile environments anyway," she said. "You don't have to water them, and they don't need that much light."

CHRISSY NIMNICHT HOLDS A RAT TAIL CACTUS.

CONTINUED ONLINE AT BLOTMAGAZINE.COM

# ALTERNATIVE HUNTING IN THE GEM STATE

## ROCKHOUNDS OF ALL LEVELS SHARE THEIR EXPERIENCES AND ADVICE ABOUT THE OUTDOOR HOBBY


Story by | *Nataly Davies*
Photos by | *Nataly Davies*
Design by | *Becca Ebenroth*


POLISHED AND CLEAN MINERALS AT GEM STATE CRYSTALS ARE THE RESULT OF COLLECTING.

GEOLOGICAL PROFESSIONAL, THOMAS WILLIAMS, IN HIS OFFICE HOLDING ONE OF HIS MANY ROCKS.


MOSCOW RESIDENTS CAN FIND BOOKS AND OTHER RESOURCES ON HOW TO GET STARTED WITH ROCKHOUNDING.

Nathan Staley, a fourth-generation rock collector, descended from ancestors who worked in iron mines. As a kid growing up in Texas, he was drawn toward the dirt, often digging with his hands to look for fossils, which are common in the area. Once Staley moved to Idaho to attend Boise State University, he knew he had to take advantage of the location.

As the gem state, Idaho is often explored by collectors called "rock-hounds." These amateur geologists spend their free time searching the outdoors for unusual or valuable minerals, a hobby that's recently grown in popularity.

With family ties in Idaho and some connections to the rockhounding community, Staley's been able to find a few areas in the Treasure Valley. However, there are some rockhounds who would prefer not to share locations.

"People are really stingy about sharing information, trying to find the good stuff is a pain," Staley said. "There's people that do it for fun and people who do it for a living."

While there are a variety of minerals to be found, rock hunters must keep in mind the laws that govern public land.

In Idaho, rockhounds can collect gemstones from most land administered by the U.S. Forest Service, Bureau of Land Management and the Department of Lands. However, some states impose limitations or restrict rockhounding altogether.

According to the National Park Service, rockhounding and other mineral-collection activities are prohibited in nearly all units of the National Park System, with exceptions for a recreational area in California and some Alaska park units.

## "THERE'S SOMETHING KIND OF INDIANA JONES ABOUT IT."

Thomas Williams, a clinical associate professor in the University of Idaho's Department of Geological Sciences, takes part in the outdoor hobby.

"There's something kind of Indiana Jones about it," Williams said. "You go out in your boots describing rocks, which is very satisfying."

Located in McClure Hall, his office greets visitors with an array of minerals and rocks in every shape, color and texture. Every surface displays a stone.

As a geological professional, Williams is familiar with how to search for rocks, but those who aren't may wonder where to get started. He suggests joining mineral collecting clubs nearby or using the Mineralogical Society of America as a resource to help understand the process of rockhounding.

"If you really are interested in rockhounding, there are mineral collecting books that are not designed for professional geologists," William said. "They can give you a background about possible locations and mineral information."

Gem State Crystals, located in downtown Moscow, has a collection of books like the kind Williams describes. The shop also displays local rocks and minerals that can be used to become familiar with exterior appearances.

Those who collect professionally go through legal processes in making claims to locations. According to the Idaho Department of Lands, there are opportunities to take out mineral leases or explore locations which give exclusive rights to explore and prospect minerals on state endowment trust lands that are not in lease.

LOCAL ROCKS AND GEMS CAN BE FOUND AT GEM STATE CRYSTALS.

"Rockhounding is not instant gratification," Staley said. "Often it's difficult to locate rocks and when you find it, equipment and skill may be required to extract your find."

There's also potential dangers rockhounds must consider before going out, like the chances of encountering scorpions, snakes and treacherous trails.

Staley spends additional time cleaning and polishing his finds. But the time and effort are rewarding. One of his favorite Idaho finds is a translucent orange opal from the Snake River Plain and corundum with iron traces from Adams County.

Erika Rader began her rockhounding journey later in life. The geological assistant professor started going out on the field for leisure scouting in 2018 with the intention of finding local areas to take students for a future rockhounding course.

The volcano expert used this as an opportunity to dive into an area of geology she normally does not focus on. However, in her short experience she too has seen the territorial attitudes of other collectors.

"Some people will bring their equipment in disguised packages that don't look like they're carrying gear," Rader said. "They don't want people to follow them or get asked questions about local finds ... its more fun for me and I want to be respectful about people's property, claims and how serious this business can be for them."

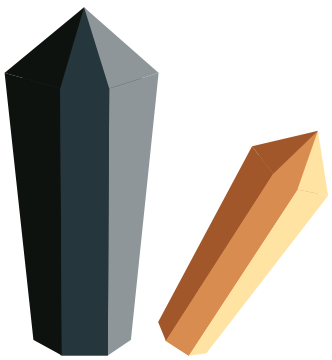
The rockhounding course Rader wants to offer would educate students with rock identification skills. While the course is not available, the minerology class she teaches has some field trip opportunities, supplying a sense of what it would be like.

**"ROCKHOUNDING IS A FUN WAY TO INTERACT WITH NATURE, BECAUSE IT'S A SLOW PACE."**

"Rockhounding is a fun way to interact with nature because it's a slow pace," Rader said. "You're not trying to chase down anything that's running away ... There's no weather constraints, you can go year-round."

Like any other hobby, there is passion driving the people investing time into it. William's admiration for minerals and rocks shows as he shifts each stone in his office with care and precision. Finding the words to explain why people form an interest with geological formations is a challenging task, but he uses the words from his past geology professor.

"It's a story you step into," Williams said. "There's a long history in front of you and you get to use different sciences to bring millions of years altogether."



ERIKA RADER SITS ON A LEDGE DURING A WORK FIELD TRIP AT BLACK CANYON, COLORADO. COURTESY ERIKA RADER.

# FIRE!

## FIRE ISN'T GOOD. IT ISN'T BAD. IT IS, JUST LIKE WE ARE.

## UNIVERSITY OF IDAHO'S FIRE ECOLOGY AND MANAGEMENT STUDENTS AND STAFF SHOW HOW FIRE CAN BENEFIT THE ECOSYSTEM AND UNITE THE COMMUNITY.

**Story By** | *Abby Fackler*
**Photos By** | *Dani Moore & Courtesy*
**Design By** | *Connor Watkins*

If you google the word "fire" almost all of the images that come up capture one of three things: firefighters engulfed in flames while putting out a burning building, flames edited onto a dark background or devastating wildfires. It takes a fair amount of scrolling before you'd find a photo similar to the one taken of Lars Filson, a University of Idaho senior studying fire ecology and management, burning wood with a drip torch while walking calmly about a plot of land.

This kind of work that Filson, and other students in UI's Fire Ecology and Management Program, conduct is called prescribed burns, which are controlled fires that contribute to the ecological health of certain areas.

"We look at how individual species will react to fire, and then spend a lot of time studying basic ecology and ecosystem processes," Filson said.

**"WE LOOK AT HOW INDIVIDUAL SPECIES WILL REACT TO FIRE, AND THEN SPEND A LOT OF TIME STUDYING BASIC ECOLOGY AND ECOSYSTEM PROCESSES."**

Often, people think of fire as something that needs to be put out, and firefighters as people that work only to put them out – especially after witnessing the devastating wildfires in California and Australia that occurred over the past year. However, suppression is only one aspect of what firefighters and fire workers do, and it isn't always the answer. UI's Fire Ecology and Management Program through the College of Natural Resources gives students the opportunity to explore how fire can be beneficial when controlled properly and can contribute to healthier ecosystems.

"We're at a really pivotal point in the history of this country right now, where historic fire suppression, climate change, ecosystem fragmentation, and the outward expansion of various populations have all been contributing factors to why there's been such catastrophic fires," Filson said. "That makes it a really exciting time to be going to school because there is so much importance in fire management."

Filson began his fire education at Central Oregon Community College in Bend, Oregon, and transferred to UI after three years to pursue a bachelor's degree in fire ecology and management because of opportunities the university provided.

The College of Natural Resources offers more courses focused on fire than any other natural resources school in the country, according to UI's website. Students also have access to the UI Experimental Forest, where many prescribed burns take place. However, burns also take place outside of a class setting.

The Student Association of Fire Ecology Club also allows students to participate in burns. SAFE Club is a national organization formed in 2000, created to provide students of fire ecology and management and other related studies networking

LARS FILSON ADMINISTERING GASOLINE TO A CONTROLLED FIRE. COURTESY OF DENNIS BECKER.

STUDENT RISA RUSHTON AND HER CLASSMATES PARTICIPATE IN A LAB STUDYING THE EFFECTS OF FIRE, AND HOW IT CARRIES OVER TO THE CANOPY LAYER.

opportunities, access to funding and the ability to share information between chapters. Filson served two terms as the club's national president and is currently serving as the local chapter's vice president.

"The SAFE Club is a great opportunity for students in the fire program to be really involved on campus," Filson said. "It's a really tight community."

Within the fire ecology and management program and the SAFE Club, there's an emphasis on prescribed burns and how to execute them properly, which its members are passionate about.

"Prescribed fire is one of the best ways that we can manage our forests, and it's really good for them," Risa Rushton, a senior studying fire ecology and management said.

Along with pursuing her degree, Rushton has served as a wildland firefighter for the past four years.

"I managed to get a job and it changed my life," Rushton said. "I fell in love with fire, and after the second-year fire completely switched my plans and I made sure I could come to UI to get this degree."

With her "boots on the ground" experience combined with her deep interest in research and fire science, Rushton knows better than most what fire is capable of and understands the negative sentiment toward it.

"Fire does have a very negative connotation in the modern world," Rushton said. "It's seen as something that destroys homes, destroys lives and destroys beautiful views. However, when you dig into the science and the research that people have done on it, fire is very beneficial, especially here."

## "FIRE DOES HAVE A VERY NEGATIVE CONNOTATION IN THE MODERN WORLD."

According to Rushton, the West has many fire adapted species and ecosystems that need wildland fire to grow and be healthy, and these fires ultimately help prevent more severe fires. This is because of the historical fire regime, which Rushton defines has how often fire comes into an ecosystem and how severe it is.

When fire burns in more frequent cycles that are less severe, it can provide an ecosystem with nutrients and positively contribute to its health. On the other hand, when fire is too suppressed it can lead to a build-up of too many plants or "fuels" and cause more severe fires.

"That's why we've been having a lot of these mega-fires," Rushton said. "The huge increase in fuels from the lack of burning and the increase in temperature from climate change builds to create these situations that make fire look really bad."

In theory, if more fires were left to burn, future fires may not be as extreme. However, this is often more difficult for people to execute in practice. According to Heather Heward, a UI fire ecology and management instructor, this is because people are reactive by nature.

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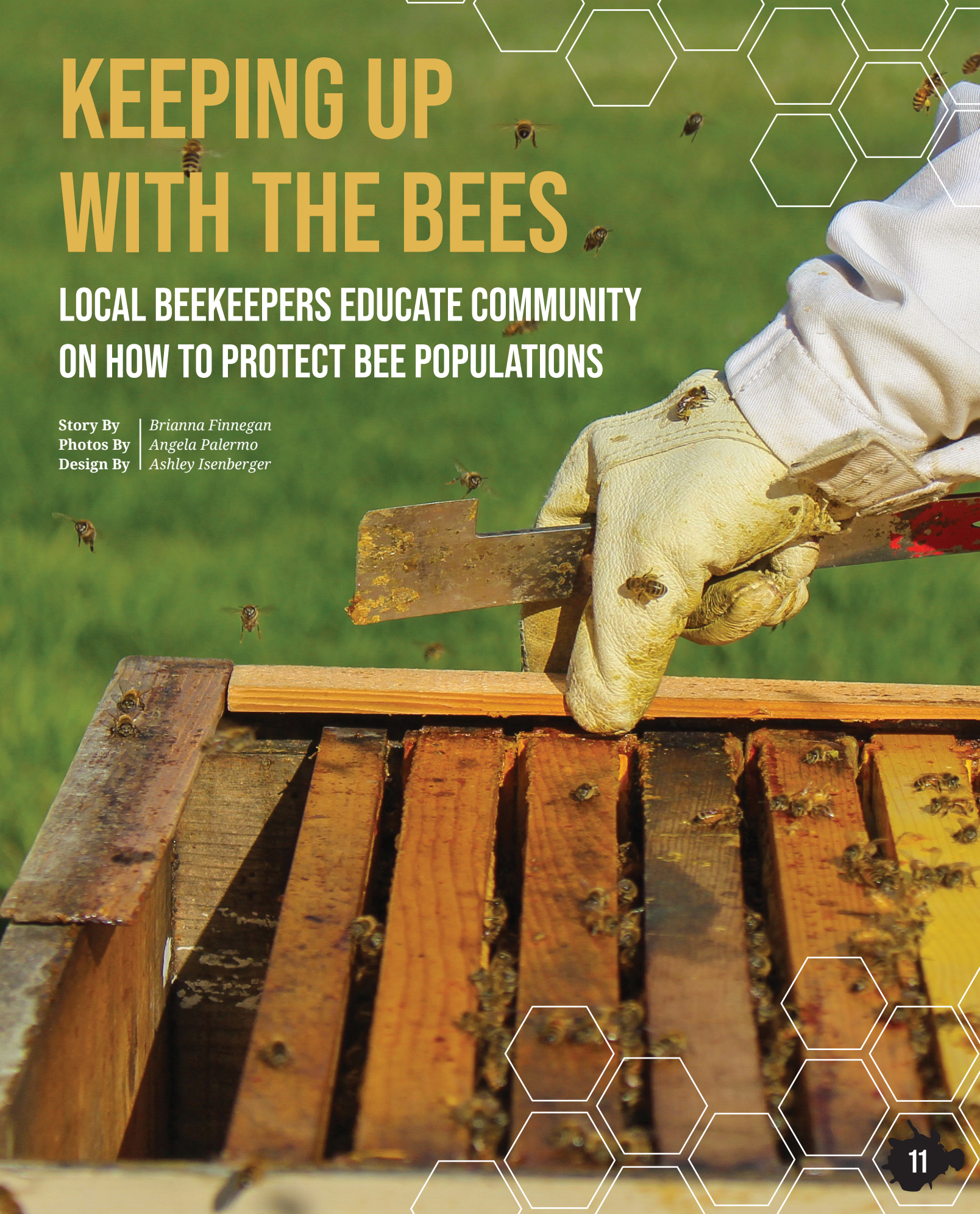
HEATHER HEWARD MONITORING A PRESCRIBED BURN. COURTESY HEATHER HEWARD.

# KEEPING UP WITH THE BEES

## LOCAL BEEKEEPERS EDUCATE COMMUNITY ON HOW TO PROTECT BEE POPULATIONS

**Story By** | *Brianna Finnegan*
**Photos By** | *Angela Palermo*
**Design By** | *Ashley Isenberger*



"I GOT INTO BEES BECAUSE OF MY DAD."

ALISON TOMPKINS HOLDS A SHEET OF HONEYCOMB FROM ONE OF HER HIVES.

As she walks across the yard, Alison Tompkins can hear a familiar buzzing sound. It gets louder as she comes closer to the yellow and tan boxes. Attached to the hood of her white protective suit, a net covers her face. When she approaches, she gently removes the lid from the hive, leather gloves cover her hands as the humming sound gets louder. The bees fly in and out, wandering around the edges of the wooden frames.

Due to environmental factors such as pesticides and varroa mites, bee populations across the country have been declining. As a result, over the past couple years there has been a large push to protect bees and other pollinators. Beekeepers and scientists are working hard to educate community members on the importance of pollinators and how to save the bees.

## BEEKEEPING AND HONEY PRODUCTION

A tall man with white hair and a goatee leans back and watches as crowds of people meander down the row of stalls. His hands rest inside of his dark yellow jacket, a logo reading DiggBee Honey on the front of it.

He remains quiet as a young couple approaches his table. They examine the rows of honey neatly arranged in front of him in an assortment of jars and little honey bears. He answers their questions when asked, but the majority of the time he leans back and watches the crowd.

As the weather warms up, the Moscow Farmers Market will return soon, and local beekeepers like Robert Kunasek will be selling their honey. He started beekeeping several years ago, selling honey through his company DiggBee Honey at local markets like the Moscow Farmers Market.

"I majored in oceanography and learned all about fish farming, but I never was able to get a job in a fish

HONEYBEES WORK ON A HONEYCOMB.

hatchery," Kunasek said. "I started learning about bees and I thought, 'well that satisfies my curiosity.'"

One way Kunasek was able to channel this curiosity was through the honey making process.

"I started thinking about how to get the best honey, and I thought, 'Well the bees all do the same work, it's where you put the bees and the kind of plants that they're working on.' So I look for blackberries and fruit," Kunasek said.

Alison Tompkins, another beekeeper in the area, found her fascination with bees after her father began beekeeping himself. Tompkins maintains her hives in her backyard and occasionally sells honey, honeycomb and beeswax candles through her company, Moscow Bee Co.

"I got into bees because of my dad," Tompkins said. "Once he retired he started beekeeping. He was interested in beekeeping because his dad was a beekeeper. My dad grew up in Houston and they were pretty poor. One of the ways that his dad was able to bring in extra money was by selling honeycomb."

Kunasek and Tompkins are both hobbyist beekeepers, meaning they work full time and tend to their hives as a hobby rather than as a career.

"This is not my main source of income," Tompkins said. "I do other things, I have more colonies than your average backyard beekeeper, but I don't have enough to support myself. I generally have anywhere from a dozen to two dozen colonies."

When he was starting out, Kunasek said he did a lot of research on bees and maintaining hives. Through trial and error, he began to find the best ways to maintain his hive, checking for varroa mites and other things that may harm the colony.

Tompkins and Kunasek said most of the work they do is monitoring and maintenance as the bees pollinate and create honey. Tompkins said she provides monthly maintenance and typically only opens the hives if the weather is good.

HONEYBEES CLUTCH ONTO A SHEET OF HONEYCOMB.

"They have to do it all themselves, the really hard work comes when you're either splitting hives or you're harvesting," Kunasek said. "You pretty much leave them alone and let them do what they do, and if you disturb them too much they take a while to get their productivity back up."

According to Tompkins, colony activity changes throughout the seasons and therefore maintenance also needs to change season to season. Throughout the year, bee activity changes and that can change what the colony looks like.

"What's normal in spring isn't what's normal in August," Tompkins said. "In spring, they're building up brood numbers. In August you might search the whole hive and only find a little teeny single fist sized brood."

**BROOD | BRŌOD | NOUN**
THE EGGS, LARVAE AND PUPAE OF BEES.

A big thing beekeepers look for when maintaining hives are invaders that could harm their colonies such as varroa mites.

"Varroa mites are a big deal," Tompkins said. "There's actually some very different schools of thought on what is the best way to deal with varroa mites. Everything from herbal remedies to chemical treatments."

A HONEYBEE SITS ATOP A HARDENED PIECE OF HONEYCOMB.

When Kunasek first started beekeeping he lost his colony to varroa mites, an issue he said he has since worked hard to prevent.

"I was trying to do all natural, let them take care of themselves," Kunasek said. "I've come to learn that you have to treat for mites, especially when you're doing beekeeping because you have several hives in close proximity."

## RESEARCHING POLLINATORS

Brad Stokes grins ear to ear as he flips through PowerPoint slides of various bees native to Idaho. His eyes are full of excitement as he notes the details of each type of bee, from the big green eyes of one to the underground nesting habits of another.

Stokes, an entomologist working at the University of Idaho extension in Elmore County has spent a lot of time researching bees and other pollinators.

"I did my masters research in entomology insects," Stokes said. "Then when I got this position, I realized that bees were a big concern in the scientific community. We've been reading around about colony collapse disorder (CCD) for a while and the preservation of our Idaho native bees, so that's what got me involved."

Through his research on CCD, Stokes found that there are many factors that cause the disease in bee colonies.

"It's a synergistic problem combining several aspects of ecology, pesticides, lack of nectar resources, as well as passive honeybee colonies," Stokes said. "There are hive beetles and wax smalls as well, so it's this combination effect that leads to CCD as we understand it, the disorder can really be a huge economic concern for beekeepers around the entire world."

Currently, Stokes is working on a project that tracks bee populations in Elmore County. He started the project in 2018, tracking bee populations each month by type, and where they were.

"In 2018 I put out a bunch of traps around Elmore County, and the idea was to trap and document the pollinator species, specifically the bees in this case, that are present here so it's documented in the future," Stokes said. "I'm hoping to repeat this experiment in the summer of 2022 so we can actually measure if our bee species are declining, increasing or staying the same."

Using what he's found through his research, Stokes aims to help the community better understand pollinators and how they help the environment, especially when it comes to learning more about the hundreds of species of native bees in Idaho.

"We have some absolutely beautiful bees in Idaho," Stokes said. "A lot of people don't realize that 70% of the our native bees are actually nesting under ground. That's important as spreading the word about bees or pollinators in general."

Stokes believes it is also extremely important to share the impact bees have on our environment. While honeybees produce honey, they are not native to Idaho. Native bee populations are important because they help pollinate local plants such as wildflowers.

"There's some tight-knit relationships with some of our native Idaho wildflowers and other plant species," Stokes said. "If the bees collapsed, there might be a catastrophic cascade, we might lose some species of wildflowers or other Idaho native plants."

## SUPPORTING POLLINATORS

A clump of bees rests against the corner of a house, buzzing as they nestle together. Tompkins gently uses her gloved hands to scoop out the bees, searching for the queen, and places her in a safe container for the remainder of the colony to follow.

In addition to beekeeping, Tompkins receives calls to remove swarms of bees from people's property.

**COLONY COLLAPSE DISORDER | NOUN**
ALSO CALLED CCD. IS A DISEASE THAT CAUSES MAJORITY OF THE WORKER BEES TO DISAPPEAR FROM A HIVE.

By collecting swarms Tompkins helps protect the bees from being harmed by pesticides and other traps.

"I think one of the biggest misconceptions that I get calls about is people telling me that they have a swarm, when in fact they have an established colony living somewhere," Tompkins said. "There's a very big difference between a swarm, that's just a cluster, almost ready to grab, versus an established colony with drawn comb, brood and honey."

Tompkins said a swarm is a natural part of bee lifecycles. When the colony grows it continues to fill up space and needs to create a new colony.

"They have a pretty low chance of survival if they don't find a place to inhabit before winter," Tompkins said.

Collecting swarms is just one of the many ways beekeepers help protect pollinators. There are many reasons why bee populations are declining, including the use of pesticides.

Tompkins and Kunasek advocate for limited use of pesticides when they're needed. They suggest using less and targeting specific problem areas as well as making sure not to spray plants that are blooming.

HONEYBEES FLY AROUND ALISON TOMPKINS' HEAD.

BEESWAX CLUMPED TOGETHER ON EMPTY SCREENS.

"Think of it like you would think of yourself if you were taking medication," Tompkins said. "Don't use a bazooka to treat something that only requires a very small amount of a very specific product."

Stokes said certain pesticides and insecticides, such as neonicotinoids, are of particular concern as to how they affected bees. Neonicotinoids are a type of insecticide that have chemicals that act similar to nicotine.

"The real concern with these specific or the specific class of insecticides, is they're systemic within the plant," Stokes said. "They're typically applied to the ground and then they're soaked up by the plant they get into the leaf tissue, the nectar and the pollen itself. So, even small amounts of these chemicals are bio magnified by bees."

By educating the community about the importance of pollinators and the impact humans have on their populations, both beekeepers and scientists aim to protect local pollinators. Stokes has done this through community events and aiding in the creation of protection policies. In 2020 Stokes was awarded the Pollinator Advocate Award through the North American Pollinator Protection Campaign.

"They select one candidate each year from the U.S. for this award, so it was a big national award for me, and a big win for extension and the University of Idaho," Stokes said.

Advocating for pollinators isn't just about saving the bees. Tompkins and Stokes explained the importance of protecting all pollinators whether that's bees, monarch butterflies and others.

"I always try to stress that it's not just about honeybees, it's about pollinators," Tompkins said. "We actually have a lot of native pollinators that are very effective. So I always encourage people to look at this from the standpoint of supporting pollinators, not saving the bees."

**"SUPPORTING POLLINATORS, NOT SAVING THE BEES."**

# YOUR GUIDE TO GETTING OUTSIDE

## EXPLORE THE PALOUSE WITH THIS GUIDE TO THE BEST TRAILS AROUND MOSCOW


**Story By** | *Elizabeth Holdridge*
**Photos By** | *Anteia McCollum*
**Design By** | *Danielle Hawkins*


It has been quite a taxing winter, full of tense news and gloomy weather. Luckily, spring is finally here and it's time to get back outside. One of the best ways to feel happier and healthier is to get out into nature.

College students, in particular, need a boost of serotonin after this past year and a half. Young adults between ages 18-24 disproportionately experience more mental health issues in comparison to the rest of the population, and the pandemic has only made that worse, according to The Washington Post.

Being in nature is shown to significantly improve mental health. A study conducted by Stanford researchers found walking in nature can reduce feelings of anxiety and lower risk of depression. Fortunately for University of Idaho students, Moscow has plenty of close options for outdoor recreation. Here's a guide to the best places to hike, walk or bike safely on the Palouse. These are some of the closest hikes to Moscow, all within a 20 miles of campus. All are accessible to the public and perfect for students wanting an easy nature break.

Abby Croson, University of Idaho junior, is a frequent visitor of trails in the Moscow area. She uses nature and going on hikes to relieve stress as time to get in touch with herself and her beliefs. In nature, Croson said she "feels less stressed and like she can take a breath."

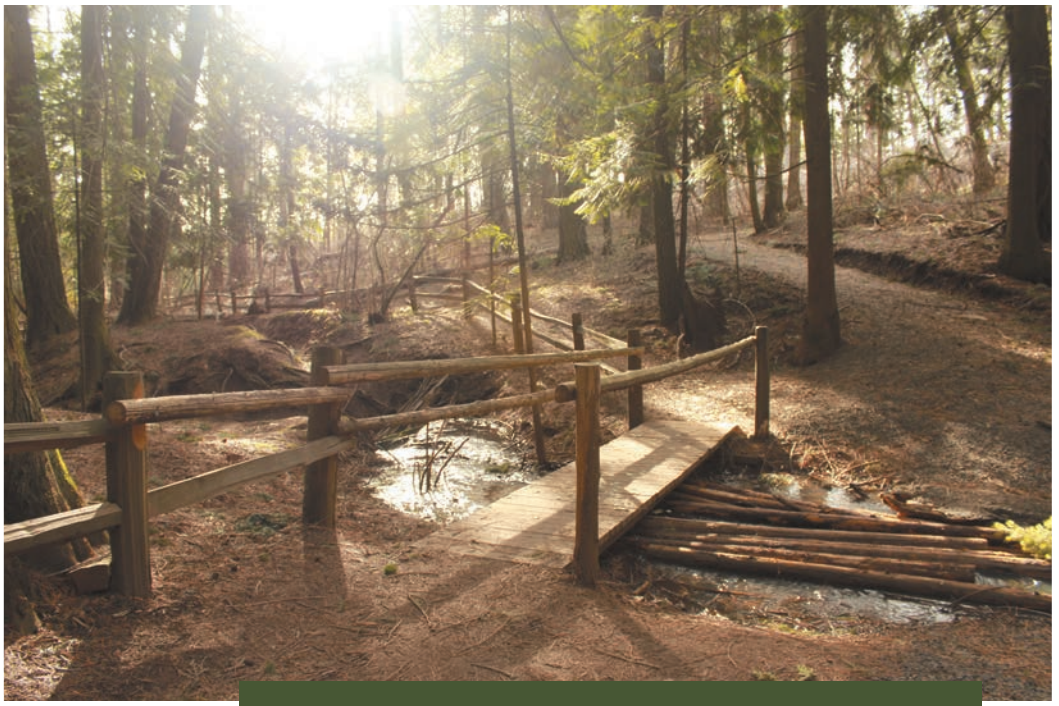
As college students, we often get wrapped up in our responsibilities and social lives, but Croson believes it's important to remember to appreciate your surroundings while you're there.

"There really aren't rolling hills like in the Palouse anywhere else and I think it's so cool while in college we get to experience it," Croson said. "I think people take advantage of it and don't recognize how special it is."

Croson believes if you spend time outside, you will have a better mental state. It allows you to show up more engaged and present to your other responsibilities when you are able to have that time outside.

**Idler's Rest**

Idler's Rest Nature Preserve is 7 miles from Moscow, at the foot of Moscow Mountain. It has options for both short and long hiking trails, for a total of 5 miles. This spot is perfect for an afternoon hike because of its proximity to town and options for smaller hikes. Croson loves this spot for it's beautiful wildflowers in the spring and the short trails are perfect for a walk and picnic.



THE FIRST SMALL CREEK CROSSING ALONG TRAIL AT THE IDLERS REST NATURE PRESERVE.

**Kamiak Butte County Park**

Kamiak Butte County Park is located 20 miles from Moscow. This park is north of Pullman and considered a National Natural Landmark. There is a large picnic and campground site at the base of the butte with access to trails leading up to the summit, and a great view of the Palouse from the top. This spot is used by university students who take the entry-level environmental science class and is well-loved in the community.

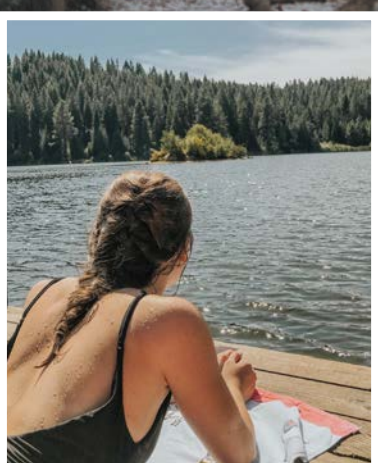
A SNEAK PEAK OF THE VIEWS NEAR THE CREST OF KAMIAK BUTTE, WITH THE ICY TRAIL IN THE FOREGROUND.

**Palouse Trails**

Palouse Trails is also known as Paradise Path, Latah, Chipman and Corkill Trails. This trail system extends all throughout the Palouse. Paradise Path runs through the UI campus and connects to the Latah Trail, which connects Moscow and Troy. The Chipman Trail connects Moscow and Pullman. The Corkill Trail connects Kendrick and Juliaetta. These trails are extremely accessible to students, with Paradise Path right on campus and is bike, rollerblade and walking friendly. Croson frequents these trails for running, biking and even cross-country skiing in the winter. The Chipman Trail is great for cross-country skiing because it's flat and has a paved trail the whole way through.

**Moscow Mountain**

The Moscow Mountain trail system is located 6-8 miles from Moscow and includes many different paths open to bikes and foot traffic. Most of the trails are located on private land and protected by the Moscow Area Mountain Bike Association (MAMBA). Croson believes Moscow Mountain isn't utilized enough for the diversity of its trails. From a quick afternoon walk to a day-long hike, Moscow Mountain has it all.



CROSON ENJOYS THE VIEW AT SPRING VALLEY RESERVOIR AFTER TAKING A DIP IN THE COOL WATER. COURTESY OF ABBY CROSON

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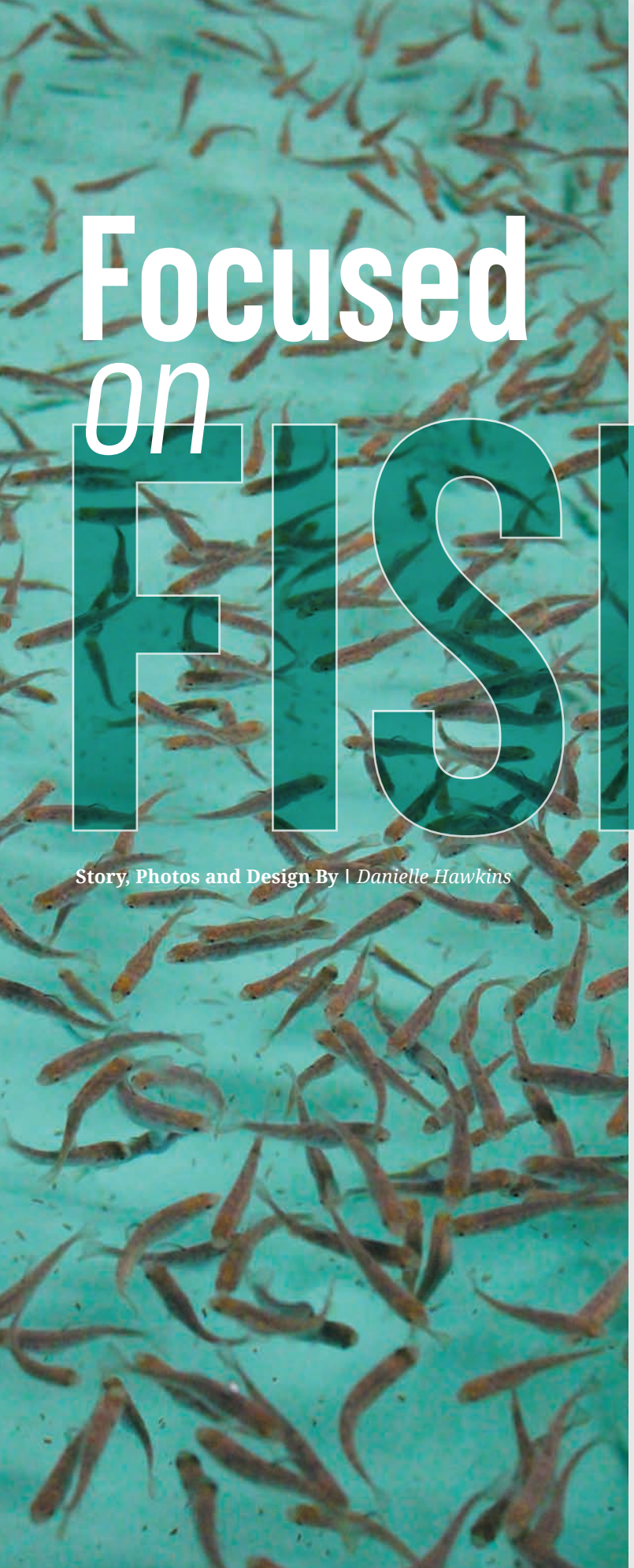

# Focused *on* FISH

**Story, Photos and Design By** | *Danielle Hawkins*

## THE DEPARTMENT OF FISH AND WILDLIFE STUDIES FOCUS THEIR RESEARCH ON SUSTAINABLY MANAGING FISH POPULATIONS TO BALANCE OUR ECOSYSTEM AND PROVIDE NOURISHMENT

"Salmon are a cultural icon of the Pacific Northwest," Christopher Caudill, associate professor of fisheries in the College of Natural Resources, said. "They're an endangered species, so one of the concerns is by not having fish in the landscape and not having people experience salmon, we're losing that cultural heritage of the Pacific Northwest and for the First Nations tribes."

Caudill began his work with the University of Idaho in 2003 on a postdoc project studying fish migration, specifically endangered species of salmon and steelhead trout, in dams on the Columbia and Snake Rivers.

"I've been leading the Fish Ecology Research Lab since 2008," Caudill said. "We have 15 to 30 people in four different states, Idaho, Oregon, Washington and Montana. We've radio tagged almost 30,000 adult salmon."

Caudill is also researching the Pacific lamprey, or the "ninja vampire snake fish" as he affectionately refers to them, which have a very similar life cycle to salmon despite being nocturnal. Like salmon, Pacific lamprey migrate to the ocean as juveniles, mature in the salt water, but come back to fresh water to spawn. Lampreys are also a first food of the Pacific Northwest tribes.

While Caudill's research is mainly conducted in the field, nestled in the College of Natural Resources is the Aquaculture Research Institute, home to two wet laboratories that have controlled tanks to study fish care, feeding and diseases.

"Whether they're destined for a dinner plate or a reservoir for someone to go fishing in, our goal is to grow healthier fish," Luke Oliver, a PhD student in the College of Natural Resources, said.

Part of Oliver's research is focused on the repopulation of burbot within the Kootenay River.

"There were less than 50 harvestable individuals in the whole system," Oliver said. "Originally burbot came to UI because their population was nearly extirpated in the wild, and the Kootenai Tribe of north Idaho relied on them traditionally as sustenance."

LEFT: **AKAMA TRIBE MEMBER, HARRY TOMALAWASH, HOLDS LAMPREY READY TO ROAST OVER AN OPEN FIRE. COURTESY OF ADAM WICKS-ARSHACK.**

BELOW LEFT: **WILLIAM WE-AH-LUP, A SALISHAN TRIBE MEMBER, SMOKES FRESHLY CAUGHT SALMON IN 1903. COURTESY OF ADAM WICKS-ARSHACK.**

For over a decade, researchers within the College of Natural Resources, in partnership with the Kootenai Tribe and Bonneville Power, conducted studies to determine the most effective and sustainable way to grow burbot, which included how to get them to reproduce in captivity, how to grow eggs and larvae and what to feed them in order to start stocking them in the wild.

"This research led to the burbot fishery, which had been closed since 1991, being able to open again in 2019," Oliver said. "Now we're looking at trying to make burbot a commercial aquaculture species."

Whether studying in the field or in wet labs, the studies are in production by researchers through CNR. Researchers are sustainably managing fish and wildlife populations for the balance of the ecosystem and the food sources of the tribes of the Pacific Northwest.

ABOVE: **A LIFE-SIZED PLASTIC REPRESENTATION OF A JUVENILE SALMON WITH THE RADIO TAGGING DEVICES USED BY CAUDILL AND HIS TEAM.**

RIGHT: **CAUDILL MAPS OUT THE MIGRATION OF SALMON AND LAMPREYS ON THE WALLS OF HIS OFFICE.**

EVAN JONES AND LUKE OLIVER OBSERVE ATLANTIC SALMON FISH IN THE WET LABS AT THE COLLEGE OF NATURAL RESOURCES.

LEFT: **ATLANTIC SALMON IN THE AQUACULTURE RESEARCH INSTITUTE.** MIDDLE: **LUKE OLIVER CHECKS ON THE SMALLER BURBOT AT THE LAB IN THE COLLEGE OF NATURAL RESOURCES. THE LARGER MATURE FISH ARE LOCATED AT THE ARI POULTRY HILL WET LAB.** TOP RIGHT: **TANKS OF FISH LINE THE ROOMS AT THE WET LABS AT VARIOUS STAGES OF VACCINATION AND DIET STUDIES. "ONE OF THE MAIN LOSSES IN THE EARLY REARING STAGES IS DISEASE, SO THIS IS OUR OTHER BREAD AND BUTTER," BRENT VUGLAR, CNR MASTERS STUDENT, SAID. "WE VACCINATE FISH AND THEN CHALLENGE THEM AGAINST THE DISEASE TO SEE IF THE VACCINATION IS SHOWING PROTECTION AGAINST ANOTHER SPECIES OR ANOTHER PATHOGEN. IF WE CAN PREVENT THAT EARLY-STAGE LOSS, THERE IS A HIGHER PROFIT OR YOU'RE SAVING MONEY TO PUT THEM BACK IN TO A RESEARCH OR CONSERVATION PROJECT."** BOTTOM RIGHT: **JUVENILE ATLANTIC SALMON ARE GROWN FOR FURTHER RESEARCH STUDIES BY STUDENTS IN CNR.**

# The Arboretum

**Story by** | *Dylan Foster*
**Illustration by** | *Joel Bartlow*
**Design by** | *Joel Bartlow*

The park near my home is a very special place. It's an arboretum, a museum for plants and trees. A small, man-made forest, created from seeds of nature hailing from all over the globe.

The whole park is split up into sections based on what region of the world the plants or trees come from, and little signs litter the ground, informing passersby of the names of the various flora and where they grow. The trees and bushes are all spaced out in an even, orderly fashion and gravel or wood chip paths wind through the park, offering different paths to circle the grounds. Benches line the walkways and wooden bridges span the small stream that runs from one end of the park to the other. When I walk through it, I often see squirrels, geese and turtles scurrying, waddling and crawling through the park.

The arboretum is beautiful. But, it is a far cry from the nature I grew up with. The small valley I was raised in was surrounded on all sides by high mountains that made you feel small no matter where you were. Mountains filled with lush pine forests and the reminder that humanity wasn't here first. I often ventured into those mountains with my dad as a child, and the nature that enveloped me on those trips couldn't be further from the well-kept order of the arboretum.

Up there, in the Rockies, the trees towering in all directions grow together so thickly that I would often lose sight of my dad just by walking a few steps away from him. The grass is long and wild, strangled with weeds, flowers and roots. The paths are thin tracks of dirt, overgrown and often strewn with rocks and branches. If it isn't the trees crowding in at all sides as you walk the hills and valleys, it's the chest high grasses, the weeds, the flowers and the bushes. Streams are more often rushing and furious than plodding and calm, bridges are rare and animals tend to be heard more than seen. They know humans are dangerous.

In the wilderness of those mountains, there are no signs and the paths don't run in circles. The hundreds and thousands of trees and plants surrounding you go unnamed and unknown. The trails, unmarked and seldom traveled, feel endless, as if you could follow them into some new, fantastical world. The streams and rivers, tumbling down the mountain, uncontrolled and free, are like the pulsing veins of an untamed beast. All around you, life can be felt and heard, but it is cautious in revealing itself. This nature, unchained by human design, is vast, magnificent and terrifying. It's unlike anything in the world. It's the world, freed from us.

When I first brought my dad to the arboretum, a man who has lived much of his life surrounded by mighty mountains and untamed forests, he scoffed at the well-spaced trees and bushes, the neatly clipped grass and the careful labels. I understood his feelings. I know it isn't real nature to him. I also can't help but compare.

And yet, when I walk through the orderly, artificial nature of the arboretum, I don't feel disappointed. The wilderness of the Rockies has an overwhelming majesty that can't be replicated. It holds a wonder that is becoming increasingly rare. As I wandered it's gravel and wood chip paths, though, I realized this humanized museum of nature, this arboretum, has its own wonder.

As the squirrels, geese and turtles wander past me, hardly reacting to my presence, I can never help but feel amazed. The animals have no fear of being hunted. As I wander those circular paths and cross those wooden bridges, I find myself fascinated by the incredible variety of the plants surrounding me. I'm exploring the nature of the world. As I step out of the urbanization, out of the bleak, dusty, sagebrush covered hills and dry farmland of the place I now live, I can't help but appreciate its beauty. This is my only window into the sublime nature of my past.

The arboretum contains elements of nature from every corner of the globe, and allows them to live in harmony with one another. It brings parts of many different ecosystems to one place, where they can be appreciated and understood. That artificial, carefully ordered nature breaks down the barriers of uncertainty which make the wild forests I knew so overwhelming, and nurtures a desire to understand the mysteries of nature. Most of all, it provides a place for humans, surrounded by cement, and concrete and dirt, to remember that the natural world is both beautiful and unique. That it is worth preserving.

**"... THIS HUMANIZED MUSEUM OF NATURE, THIS ARBORETUM, HAS ITS OWN WONDER."**

The park near my home is a very special place. It's a pale imitation of the true, free nature of my youth. It's controlled, ordered, and labeled. It doesn't feel infinite, unknown or full of wonder. But it's become as beautiful to me as that breathtaking place of my past. For all its artificial order, it brings me a little bit closer to those grand mountains and deep forests I once called home. It makes me hopeful that we can live with nature without destroying it. It makes me hopeful that we can continue to appreciate it. It makes me hopeful that, maybe, we can even save it.

# Ruffled Feathers

*Poem by* | *Emily Pearce*
*Illustration by* | *Rebecca Ebenroth*
*Design by* | *Joel Bartlow*

If only if  only the woodpecker cried,
The farmers, they saw him and took both his eyes.
They went to the market with marbles in pockets
And sold his eye sockets for a cup full of rye.

When woodpecker got up and started to fly.
He hit the wind, thought it was goodbye,
But he flew blindly without a doubt in mind.
Woodpecker was soaring till his wings grew sore.

He dived headfirst and hit the market's floor,
Commoners gasped as dinner fell from the sky.
Pitchforks in hand, eyeing him, drolling like fools,
Woodpecker was ignorant that he might die.

A vendor gave woodpecker a ride on his shoulder,
With marbles in his hand, he gave them to the bird.
Though his sight was gone, he had made a friend,
Woodpecker and the vendor were pals to the end.

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