

The Roost

Annual Newsletter of the Owl Research Institute

10 Years
of Northern Saw-Whet
Owl Migration Research



Owl Research
INSTITUTE

November 2021 | Volume 25



WH0000 we are

The Owl Research Institute (ORI) is dedicated to owl conservation through research and education. We are a non-profit, 501(c)(3), tax-exempt organization, established in 1988. Our headquarters are located in Charlo, Montana on the Flathead Indian Reservation.

ORI is funded by individual and non-profit group donations, grants from foundations and corporations, and occasionally agency contracts. We accept donations of real property. Please consider us in your estate planning. Donations are tax-deductible to the extent of the law.

What we do

We conduct long-term research on owls, their prey species, and their relationship to the habitat in which they live. We use these data to help maintain viable populations. Additionally, we collaborate on strategic projects, educate the public about owls, and provide research data to land management agencies and conservation partners.

Denver Holt
Founder and President

Beth Mendelsohn
Research Biologist

Steve Hiro
Volunteer Biologist

Janet Rose
Director of Philanthropy and
Conservation Initiatives

Lauren Smith
Director of Communications

Chloe Hernandez
Intern and Wildlife Technician

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The Long View on Long-eareds

Cover: Northern Saw-Whet Owl. This page: Great Gray Owl.
Photos | Kurt Lindsay.



Message from the President



photo | Max Lowe

Greetings from the ORI field station!

THIS YEAR, autumn has been spectacular here in western Montana. Many warm days and cool nights have made for refreshing sleep and glowing autumn foliage.

At our field station, the Great Horned Owls raised three young (p. 26), as did the pair nesting at my neighbors' Jim and Dolores' place. This autumn, at least 3 Grizzly Bears also spent quite a bit of time around the field station. There was no real trouble as they were only active at night, leaving their "calling cards" on the lawn (in the form of big piles of scat).

It was another up and down year for the owls we study. Snowy Owls and lemmings did a bit better (pp. 10-12), Short-eareds started off great, but then it all went downhill (pp. 18-19). Long-eareds were way down after last season's big year (pp.

20-21). Barn, Pygmy, Boreal and Saw-whet all had a low year. On the other hand, our Saw-whet migration study fared pretty well (pp. 6-9).

We sadly said goodbye to Liberty DeGrandpre after 4 years with ORI. However, we added 2 new staff members and an intern (pp. 4-5).

Steve Hiro, retired heart surgeon, has now volunteered for ORI for 29 years! In addition to his research on Pygmy Owls (pp. 22-23), Steve is in the process of restructuring our board of directors.

And, after 35 years, our study of Long-eared Owls in Missoula, Montana, is coming to a close. The property where we conducted our research has been sold, and we will be ending our Long-eared Owl research on this property.

As all of you know, we are now pushing two years of the COVID-19 pandemic. We have not received government assistance, but rather relied on our constituents to keep funding our projects. Thus, once again I ask for your support to keep our projects going.

As I always say, when you're done with this newsletter, please pass it on to a friend, or someone you know that might be willing to support our mission.

Thanks and enjoy the holidays and upcoming winter season.

Denver Holt
ORI Founder and President

A Fond Farewell to Liberty



Liberty with a Snowy Owl chick at ORI's Alaska field site, 2019.

AFTER FOUR YEARS with ORI, Liberty DeGrandpre (affectionately known as 'Lib') has moved on. Due to the passing of her father, Liberty decided to join her mother and help run their family business. It was a wonderful four years working with Lib. There was no job too difficult, no job too mundane – Lib, just got it all done with a laugh and smile. "Yeah this sucks," she would say, "but I got it." She often said that working at ORI was the best job she ever had.

Lib's work ethic energized all of us and brought the ORI to another level of achievement. Her creativity is unmatched. She brought an artistic, creative, and witty business way of thinking into wildlife research. Equally, her writing style conveyed the ORI's goals in such a manner that people were energized to assist, join, and support ORI research and education projects.

While we'll miss having her in the office every day, we're pleased to share that Lib will stay with us as a board member and friendly advisor.

Anyone wanting to contact Lib can reach her at Mission Valley Properties, St. Ignatius, Montana.

And Welcome to Janet and Lauren



Janet Rose

Philanthropy and
Conservation
Initiatives



janet@owlresearchinstitute.org

Janet has been involved in wildlife conservation and equine welfare and has helped to manage and lead nonprofits for more than two decades.

She holds a BA in journalism and psychology from NYU and an advanced degree in Zoology from Fordham. Owls hold a special place in her heart.

Janet believes that a strong philanthropic program will ensure the present and future of ORI's vital research and field efforts. Please contact Janet if you'd like to learn about supporting ORI's owl research and global conservation efforts.



Meet Chloe Hernandez,

ORI's 2021 intern (turned field tech!)

A RECENT GRADUATE of Wildlife Biology from Texas State University with a desire to expand her wildlife knowledge, Chloe applied to ORI's internship and found herself in Charlo this spring.

Nighttime surveys of Great Grays soon turned to scrambling through gullies searching for Long-eared Owls, hiking up steep mountainsides listening for Northern Pygmy Owls, bushwhacking through aspen stands in search of Northern Saw-whet cavities, and dragging ropes in the grasslands, flushing Short-eared Owls.

By the fall, Chloe was ready and willing to take over the Northern Saw-whet Owl Migration Station full time. She also helped design the new Northern Saw-whet Owl shirts.

"I absolutely love ORI and Western Montana. My interest in owls and raptors has snowballed into full-on passion!" she says.

Chloe is a valuable addition to the team, and we're glad to have her working with us this year!



Above: Chloe with a Long-eared Owl chick. Right: Recording measurements from a Northern Saw-whet Owl.



Lauren Smith
Communications



lauren@owlresearchinstitute.org

Lauren's background is in ornithology and writing. She has worked as a field biologist, environmental educator, editor, and most recently as a communications specialist for a disability-focused research institute.

She first got into birds while banding in her advisor's backyard as an undergraduate at Ohio Wesleyan University, where she studied Zoology and English. She earned an M.S. in Environmental Studies from the University of Montana.

Lauren believes that clear, accessible communication is an essential aspect of all research, and is excited to help share ORI's research and conservation efforts with the world.

Northern Saw-whet Owls

Breeding Season Update



NESTS WERE SPARSE during the Saw-whet Owl breeding season of 2021. We searched our usual areas for nests and only found 2. One, found early on, failed for unknown reasons during the incubation stage. The other, in the northern part of our study area, hatched 3 chicks but only 2 survived. Saw-whets use large cavities, or holes, mostly in dead trees for nests. They choose cavities with large openings that are sometimes quite deep, mostly excavated by Northern Flickers or Pileated Woodpeckers, and usually have a soft, duffy floor. We analyze the characteristics of these nest choices to learn how to better protect snags for nesting habitat.

Ponderosa Pine
(*Pinus ponderosa*)



Total — 18

Quaking Aspen
(*Populus tremuloides*)



Total — 27

Western Larch
(*Larix occidentalis*)



Total — 6

Black Cottonwood
(*Populus balsamifera*)



Total — 15



ORI has found 66 total Northern Saw-whet Owl nests in natural cavities from 1981-2021. The 4 most common tree species are shown above. Finding and measuring natural cavities takes many hours of dedicated field research.



Left to right: Volunteers Patricia Vega Garrido, Amanda Hancock, and Tanner Humphries. The fourth owl is being held by Chloe, who is taking the photo.

10 Years of Northern Saw-whet Owl Fall Migration Banding

THIS YEAR MARKED the 10th consecutive year for our Northern Saw-whet Owl migration banding station in Missoula. At ORI we strive for long-term data sets (minimum of 10 years). Given the natural fluctuations and many variables affecting owl populations, it takes many seasons to begin to discover meaningful variation.

Our 10 years of data provides a solid foundation to begin analyzing and looking for changes or trends over time.

THIS SEASON BY-THE-NUMBERS



Volunteer Judith Mendelsohn (Beth's sister!) models the newest ORI shirt design with two Northern Saw-whet Owls. Visit ORI's online store to buy your own (owls not included).



recaptures

10



nights open

47



owls caught

231

hours trapping

230

nets

4



Thank you to our committed and hardworking volunteers: Skyler Bol, Brenna Cassidy, Ashleigh FauntLeRoy, Webber Greiser, Tanner Humphries, Alex Jehle, Elsa Jehle, Cooper Malin, Judith Mendelsohn, Kai Mills, Lindsay Petrillo, Logan Webster, and Patricia Vega Garrido



ORI HAD THE PLEASURE of hosting Patricia Vega Garrido from Santiago, Chile, for two weeks in October 2021.

Pati visited with us to learn about our research, and hopes to start her own owl projects. We are excited to have the opportunity for international collaboration, and we look forward to hosting her again sometime soon- and hopefully visiting her in Chile!

Pati shares some reflections from her visit:

Pati holding a Northern Saw-whet Owl at the banding station.

Trabajar como voluntaria en the Owl Research Institute

Desde pequeña mi mayor interés ha sido la naturaleza, en especial la fauna silvestre; siempre he querido estudiarla y protegerla, dar a conocer su importancia y transmitir la felicidad que me hace sentir.

Soy Médico Veterinario de Chile y me encuentro cursando un Master en Conservación en la Universidad de Queensland, Australia, el cual se encuentra suspendido por la pandemia. Buscando experiencias para trabajar con búhos en el intertanto llegué a ORI.

Partí desde Chile sin conocer el real alcance de esta institución y el impacto que genera en la comunidad civil y científica. Al llegar a Missoula, Lauren, directora de comunicaciones, me recibió con los brazos abiertos y me hizo sentir bienvenida. En la tarde había programada una charla abierta al público, a la cual asistieron más de cincuenta personas; allí conocí a todos los miembros de ORI y quedé maravillada con las imitaciones que Denver hizo de los cantos de diversas especies de búhos.

Denver Holt, el fundador y presidente de ORI, el señor búho, fue muy amable conmigo durante mi estadía; me invitó a ver rapaces en Mission Valley, mientras me contaba todo sobre las diversas especies de búhos que habitan el lugar.

En otra salida junto a Denver, Steve y Chloe, me

Volunteering with the Owl Research Institute

Since I was little, my main interest has been nature, especially wildlife; I have always wanted to study wildlife and protect it, make its importance known and transmit the happiness that it makes me feel.

I'm a veterinarian from Chile, studying for a Master's in Conservation Science at the University of Queensland, Australia, which is suspended due to the pandemic. Looking for experiences to work with owls in the meantime I found ORI.

When I arrived at Missoula, Lauren, director of communications, welcomed me with open arms and made me feel like home. In the afternoon, there was a public talk scheduled, where more than fifty people attended. There I met all ORI's members and was amazed with Denver's imitations of the calls of several species of owls.

Denver Holt, ORI's founder and president, the owl master, was very kind to me during my stay; he invited me to see raptors in Mission Valley, meanwhile he taught me all about the various species of owls that inhabit the place.

In another ride with Denver, Steve and Chloe, they

showed me the methodology that they use to capture and study Long-eared Owls. The work consisted in going through bushes through narrow ravines; maybe they thought that this could discourage me, but the possibility of working with owls in the field motivated me enormously. The ease with which we carried out the capture was surprising; it is incredible how they know perfectly where to find these individuals and how they behave.

Among the members of ORI I also had the opportunity to meet Beth, the researcher who gave me the chance to live this experience. The night we shared at the Northern Saw-whet Owl station, Beth showed me in the individuals we captured all the fascinating peculiarities that make owls the masters of the night. Their asymmetrical ears to distinguish where a sound is coming from, the serrations and fringes on their feathers that contributes to their quiet flight, their facial disc that allows them to capture sound, among many others. She also told me about the multiple topics that still need to be studied in these species to conserve them effectively.

It was great to meet each member and discover their dedication and commitment to the conservation of these raptors. I am grateful for the opportunity to accompany them for two weeks, as witnessing their work renewed my hopes in conservation. I hope to be back soon.

enseñaron la metodología que usan para capturar individuos de Long-eared owl y estudiarlos. El trabajo consistía en ir atravesando matorrales a través de quebradas estrechas; quizás pensaron que esto podría desanimarme, pero la posibilidad de trabajar con búhos en terreno me motivaba enormemente. Fue sorpresiva la facilidad con que ejecutamos la captura, es increíble como saben perfectamente donde encontrar estos ejemplares y cómo se comportan.

Entre los miembros de ORI también tuve la posibilidad de conocer a Beth, la investigadora que me dió la oportunidad de vivir esta experiencia. La noche que compartimos en la estación de muestreo de los Northern saw-whet Owls, Beth me mostró en vivo y en directo todas las fascinantes peculiaridades que hacen de los búhos los maestros de la noche. Sus oídos desnivelados para distinguir desde dónde viene un sonido, el borde dentado y los flequillos en sus plumas que contribuyen a su vuelo silencioso, su disco facial que les permite captar el sonido, entre muchas otras. También me habló de los múltiples tópicos que aún es necesario estudiar en estas especies para conservarlas de manera efectiva.

Fue magnífico conocer a cada integrante y descubrir su dedicación y compromiso con la conservación de estas rapaces. Les agradezco la posibilidad de haberlos acompañado durante dos semanas, ya que presenciar su labor renovó mis esperanzas en la conservación. Espero poder volver en un futuro cercano.



Chloe holds a Northern Saw-whet Owl in the banding station to take measurements while Pati looks on. Photo | ORI



Photos from ORI's public Northern Saw-whet Owl banding night. Over 50 people attended to listen to presentations about our research, information about the banding station, and to learn about owls. Photos | Sierra Cistone

30 Years of Snowy Owl Research

Updates from the Arctic

Photos | Max Lowe

by Denver Holt

I COMPLETED MY 30TH SEASON studying Snowy Owls and lemmings at Utqiagvik (formerly Barrow, Alaska) in 2021. Although I only found four nests, and only one nest was successful, I was encouraged that Snowy Owls and lemmings had made a small comeback from last year.

In fact, there were many owls on the tundra this season. Several pairs established territories and hung out for a while but did not nest. There were also many single adult males on territory throughout the study area.

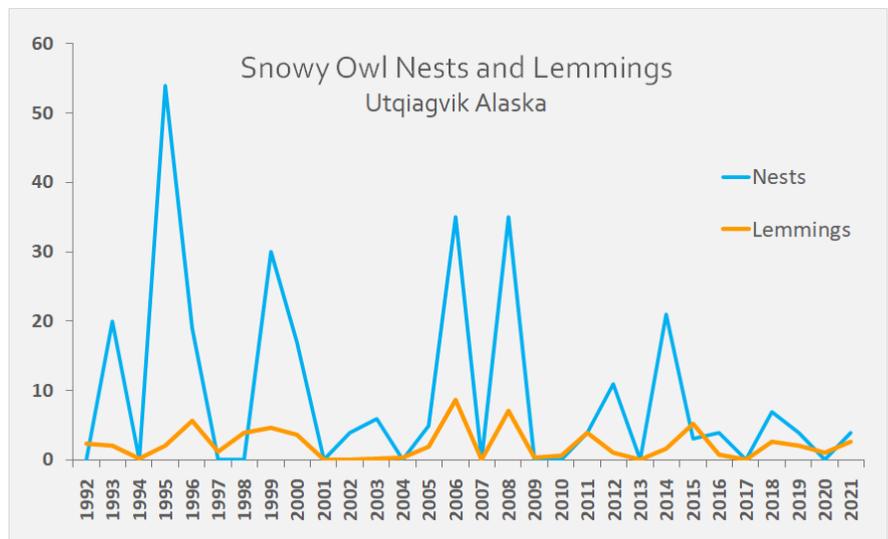
Our lemming sampling also indicated an increase in brown and collared lemmings numbers at several locations, but unfortunately not at high enough densities for widespread Snowy Owl nesting attempts.

At the one successful nest, 8 eggs were laid, 7 hatched, and 5 fledged. These are very good numbers per nest, and are reminiscent of numbers we used to have in big breeding years.

While it was an exciting year in terms of some nesting and lots of owls in the area, when we look at this year compared to the previous 29, the overall trend line downward remains.

Snowy Owl Nests and Lemmings Trapped per Day (1992 - 2021).

The numbers of snowy owl nests and lemmings are clearly correlated, and both fluctuate dramatically from year to year. This indicates that Snowy Owls rely on lemmings for nesting. While nest numbers are starting to decline, lemming numbers are not dropping as steeply. This suggests that other factors, such as climate change, likely contribute to the decline.



How Close Do Snowy Owls Nest To Each Other?

To begin to answer this question, we brought in Henry Mros: statistician, computer modeler, game theory guru, and creative graphic artist. Henry and Denver analyzed nearest neighbor distances between nesting Snowy Owls.

Many aspects of the results are interesting. For example, if one analyzes nests each year independently, they appear randomly distributed. However, when analyzed collectively over 30 years, a significant clustering pattern emerges. This suggests that Snowy Owls are selecting certain geographic characteristics or 'hot spots'. These tend to be higher drier sites, such as ridges. This leads to more questions: Are Snowy Owls selecting these nesting areas based on geographic characteristics? Or, are the owls nesting in areas with more lemmings, and it's the lemmings that prefer these higher and drier sites? Is it a combination

of these, and maybe other, factors? We are currently exploring these alternate questions.

Some Initial Highlights

- Across all years of the study, the average distance between nests (called nearest neighbors) was 1,162 meters, or a bit over 1 kilometer.
- The nearest pair of nests within a single breeding season were 143m apart.
- The farthest distance between a nest and its nearest neighbor in a season were 3,568m apart.
- The nearest pair of nests across seasons were 1,162m apart on average.



Max Lowe (left) and Sam Lowe-Anker (right) joined Denver in Alaska for a few weeks this summer for the Snowy Owl field season. Max is a director, photographer, and documentary filmmaker. He received a grant from The Explorers Club Discovery Grants Program to work with Denver on a film project about Snowy Owls.



Above: Close up of a Snowy Owl chick in the nest. Left: A male Snowy Owl returns to his waiting mate and their chicks with a lemming.

Photos | Max Lowe





Two snow owl chicks, only a few days old, huddle together for warmth and open their beaks for food during a nest check. The female owl will return to the nest within a few minutes of researchers leaving it. Researchers take care to work quickly and protect the chicks from the elements.

Kylie Mohr – environmental writer, hiker, back packer, skier – joined us for about 2 weeks of hard-core field research.

Although the weather at Utqiagvik is generally lousy, and the tundra difficult to travel as there are no hiking trails, Kylie greeted each day with enthusiasm and a smile.

We look forward to reading her article about her experiences and our Snowy Owl research in Hakai Magazine sometime in late 2021 or early 2022.

All photos this page | Kyle Mohr



Denver glasses the tundra in an attempt to find Snowy Owls and their nests. “Look for the white. It’s either a plastic bag, piece of styrofoam, or a Snowy Owl.”

A male Snowy Owl diving at researchers during a nest check. Snowy Owl parents are excellent protectors of their chicks and nests.



explore Live Cams

ORI partners with Explore.org to share the lives of raptors in Montana with viewers around the globe. Visit www.owlresearchinstitute.org/owl-live-cams to learn more. Each year, we aim to put cams on 5 different raptor nests: Snowy Owls, Great Horned Owls, Long-eared Owls, Great Gray Owls, and Osprey. Due to natural fluctuations in breeding and accessibility limitations of camera equipment there were no nests on the Snowy Owl, Long-eared Owl, or Great Gray Owl live cams this year, but we’ll try again next breeding season!

Thank you to all of our cam viewers for your interest and support!

Danger in the nest: Osprey and Baling twine

LIVE CAMS GIVE US an up-close and personal look at what happens in a bird's nest. Unfortunately, sometimes what we see is hard to witness.

Each year an Osprey pair named Charlotte and Charlie build a nest and attempt to raise a family near the ORI field station. This year, right around the time when their two eggs hatched, Charlie brought baling twine into the nest.

WHAT IS BALING TWINE? HOW DO OSPREY GET IT?

Baling twine is a strong, thin rope that is used to hold together bales of hay. It is commonly made of strands of polypropylene, a plastic polymer. When left in a field or pasture, Osprey will pick it up to use as soft nest lining material.

WHY IS BALING TWINE DANGEROUS FOR OSPREY?

Adults and chicks can become tangled in baling twine and trapped on their nest. Once tangled, they can lose extremities due to cut-off circulation. In extreme cases, they may become trapped dangling from the nest. It's estimated that up to 10% of osprey chicks in the West will die from baling twine in the nest.

With the help of the Explore.org Osprey Live Cam watchers, we were closely watching the nest. Once we learned the twine was there, we quickly sought assistance from local raptor experts Rob Domenech, the executive director of Raptor View Research Institute, and Brooke Tanner of Wild Skies Raptor Center (a rehabilitation facility).

We ended up visiting the nest twice to remove baling twine from around one of the chicks, which had caused injuries. On our second visit, we made the decision to take the chick to a rehabilitation facility, where it was fed and examined. Unfortunately, the injuries were too severe, and the chick was humanely euthanized. This was a stressful and ultimately tragic outcome but provided a critical opportunity to publicize the dangers of baling twine.



Above: A picture of the two osprey chicks in the nest, before the twine was removed the first time. The older, larger chick is in the center of the image entangled in orange baling twine. They are less than two weeks old and still completely reliant on their parents for survival.



Right: Beth stands in a raised bucket truck at the osprey platform. She is reaching into the nest to cut baling twine from around the tangled osprey chick. An adult osprey is overhead.

Local news coverage led to increased interest by local groups who are now working to create baling twine pick-up events and recycling programs. We are hopeful these initiatives will take off.

It is important to remember that we share our homes and favorite outdoor places with other living creatures. Our small actions can have devastating repercussions we may not realize. Please spread the word about the dangers of baling twine left behind!

For more information, visit [Montana Osprey Cams](#) and [Raptor View Research Institute](#) on Facebook, and see our [blog post](#) with links to baling twine recycling programs in the West:



Winter Raptor Survey Update



All photos by Alex Kearney

Juvenile Red-tailed Hawk

THE MISSION VALLEY of western Montana is a mecca for raptors in the winter. Rough-legged Hawks, Red-tailed Hawks, Bald Eagles, Northern Harriers, and Falcons all flock to the area for the abundant food. Denver has been observing this phenomenon for years and wondering how many Raptors there really are. So, in 2020, we started a pilot season of Mission Valley Wintering Raptor surveys to quantify this observation.

Last winter was the first full winter season during which we combined one of our favorite winter hobbies (observing raptors) with a new scientific study. We began running monthly surveys (from November through March) using transects to cover 155 miles in one day, stopping every mile to observe raptors. This effort required 20 volunteers and over 130 hours to complete.

Our goals are to assess the density of raptors, species composition, population density, and age and sex classes over the long-term. By recording habitats, perch types, and activities we will get a better idea of how raptors are utilizing the landscape.

From the first season, we can already see that agricultural land is by far the most common habitat for wintering raptors in the Mission Valley. The most common perch type utilized by hunting and perching raptors are trees, closely followed by utility poles, fence posts, and irrigation equipment. The landscape has been highly modified by humans, and we can really begin to see how

Most common wintering raptors in the Mission Valley

Species — Number Seen

Red-tailed Hawk	— 1,186
Rough-legged Hawk	— 664
Bald Eagle	— 286
Northern Harrier	— 121
American Kestrel	— 49
Great Horned Owl	— 26
Prairie Falcon	— 20



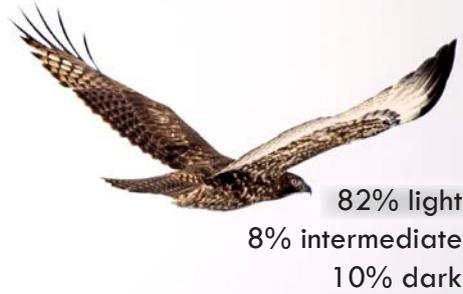
raptors have come to rely on altered landscapes and artificial structures for their survival.



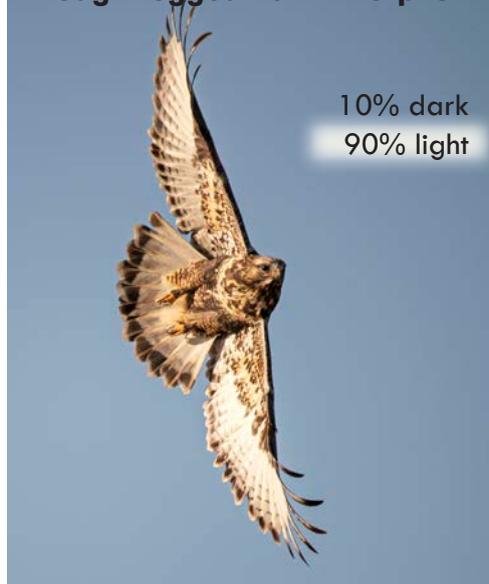
This past winter we saw different age classes depending on species. The majority of Red-tailed Hawks seen were adults, whereas juvenile Rough-legged Hawks outnumbered adults. We know that some of the breeding pairs of Red-tails stay on their territories throughout the year, and more migrate in from colder climates, while Rough-legged Hawks do not nest in Montana (they only breed in the Arctic), and migrate south for the winter. Over time we will monitor factors like this and look for any variation or patterns.

We also keep track of subspecies and plumage morphs for Red-tailed Hawks. There is a lot of variation that is fun to study, observe and photograph. Nearly 15% of the Red-tailed Hawks were of the Harlan's race. Most others were the Western subspecies.

Western Red-tailed Hawk morphs



Rough-legged Hawk morphs



Harlan's Red-tailed Hawk morphs



Thank you to our talented team of volunteers:

Payton Adams
Lisa Bate
Kellen Beck
Brenna Cassidy
Karen Chickering
Shea Coons
Kari Eneas
Zoey Greenberg
Madison Henrie
Tanner Humphries
Alex Kearney
Kaitlyn Okrusch
Emily Rohrlace
Lesley Rolls
Kathy Ross
Barbara Summer
Cathy Tilly
Fred Tilly



These surveys would not be possible without your help!

If you are interested in learning more about raptor ID or are an expert at ID looking to volunteer, please email Beth Mendelsohn at:



beth@owlresearchinstitute.org

Great Gray Owl Project — Pilot Season Updates

Photo | Kurt Lindsay

CLOSE YOUR EYES and imagine yourself standing ankle deep in snow, in the dark, cold, silent forest.

You're standing as still as a statue, trying to ignore that sudden itch on your nose, wondering if your partner standing 20 feet away can hear your breathing too, when a loud, sudden wheezy snort sound from the brush causes you to jump.

Okay, not an owl, not Bigfoot, just a deer, all is well. You prick up your ears, hearing the sounds of silence, and every rustling leaf or falling pine cone brings your ears back into the zone of reality.

Then it happens:

Hoo ... Hoo ... Hoo ... Hoo... Hoo... Hoo... Hoo... Hoo.

You almost feel the deep reverberations in your chest rather than hearing them in your ears.

Then it comes again:

Hoo ... Hoo ... Hoo ... Hoo

The moment you've been waiting for! After countless, freezing surveys and dwindling hope —

A Great Gray Owl!



Top: Denver and Beth bundled up on a wintry Great Gray Owl survey. Below: Chloe on an ATV, heading out for a night of surveys. Next page: A Great Gray Owl chick (top). Two Great Gray Owl chicks in a snag nest (bottom).

We spent many late nights on ATVs and foot surveying the country on the western side of the Mission Mountains and around Missoula for Great Gray Owls. We surveyed 163 points, and detected 2 new Great Gray Owl pairs, leading to the discovery of one new nest. Over the years, ORI has honed a technique that we find to be quite successful for surveying for breeding owls.

The moment you've been waiting for! After countless freezing surveys and dwindling hope — a Great Gray Owl!



Photo | Alex Jehle

Surveys are followed by nest searching - hours of slogging through bogs, thick brush, and bear scat, diligently scanning every tree for signs of nesting.

When we found it, the nest was iconic, a broken top cottonwood snag, hidden in a forest within a bog. The pair successfully fledged 3 young chicks. The other territory detection, despite a massive search effort, did not turn up any nests. We did find a suspicious looking snag with a feather on it, leading us to wonder if an early nesting effort failed. A third new territory was shared with us by our friend and neighbor Amy Miller, who has knowledge of Great Grays and heard fledglings begging while on an evening horseback ride.

Through extensive effort and

communication with locals in the valley, we are slowly starting to build up the Great Gray Owl project. It can take years to discover the extent of nesting Great Grays in a region, due to their elusive behavior, camouflaged nests, and yearly fluctuations including years when they may not nest at all.

As we gather more and more data on Great Gray Owl nests in Montana, we will be able to analyze the nesting site characteristics and better be able to conserve the species. We have also been collaborating with Montana Fish Wildlife & Parks biologists to share data about nesting locations as they make a habitat model to predict Great Gray Owl breeding territories throughout Montana.

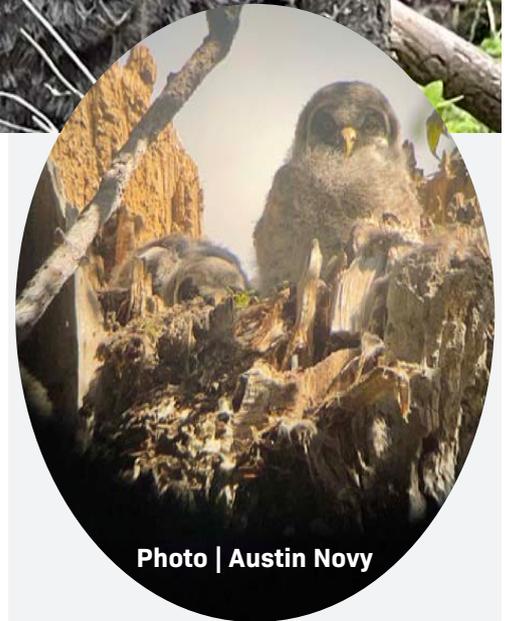


Photo | Austin Novy

Thank you to our brave volunteers:

Jon Barlow, Tanner Humphries, Alex Jehle, Elsa Jehle, Judith Mendelsohn, and Lindsay Petrillo.

Short-eared Owl Project

Updates and Future Plans



THIS WINTER the Mission Valley witnessed groups of Short-eared Owls in numbers never before seen. In late winter, the grasslands were full of roosting parliaments of owls, numbering from 8 to 50 birds. Some evenings, as the owls came out to hunt, an observer could see 100 owls at a time, all catching and eating voles. Most of these owls seemed to move out of the valley for breeding, but a few stayed and attempted to nest as vole populations plummeted.

We started the Short-eared Owl breeding season in spring with high hopes for finding nests and collecting DNA samples. Our plan was to start a major project analyzing population differentiation of

the species throughout its range. But ideas for field work do not always go as planned.

After many hot days of nest searching we managed to find 9 nests. Unfortunately, all of the nests except one failed before the eggs hatched. One nest hatched chicks but they were eaten by a predator. We all know that part of studying wildlife is understanding the natural losses, which can be so disappointing, but this somehow seems like more, and needs to be investigated.

Moving forward, we are modifying our course and working on a camera monitoring system that will help us learn more about the fate of these ground nests. Over the years, it does seem that more nests are unsuccessful, and fewer fledglings are seen, suggesting that predation pressure or nest abandonment may be increasing or changing.

As highly camouflaged ground nesters, it is impossible to monitor Short-eared Owls from a

It is crucial to figure out what is causing nest failure, so that we can take steps to protect the species.



Beth (left) points out a Mallard nest to Wildlife and Fisheries students (center) from Salish Kootenai College while Chloe (right) looks on.

distance, and a high-tech camera system may be the only way to get the answers we need to protect this species. Camera equipment is expensive and we need your support!

This year, the nesting habitat in some of the key high-density nesting areas was affected by land use and management techniques. Spring burning of grasslands, during the time the owls are courting and beginning to nest, likely disrupted early nests. Cattle grazing also played a large role in destroying grassland habitat and caused some nests to fail this year. Intact grassland habitat is crucial to successful short-eared owl nesting, which is why we do habitat measurements at every nest.

It is crucial to figure out what is causing nest failure, so that we can take steps to protect the species. We also need more funding to expand the short-eared owl study to encompass more seasons. We will do winter surveys to assess occupation of the same nesting areas during the winter. We will also continue collecting DNA samples, which will be important to determine the population structure if we can secure funding for the analysis.



These eggs were most likely destroyed by a mammalian predator, like a skunk or fox. Ravens will also prey upon Short-eared Owl eggs, but they usually take the egg away from the nest.



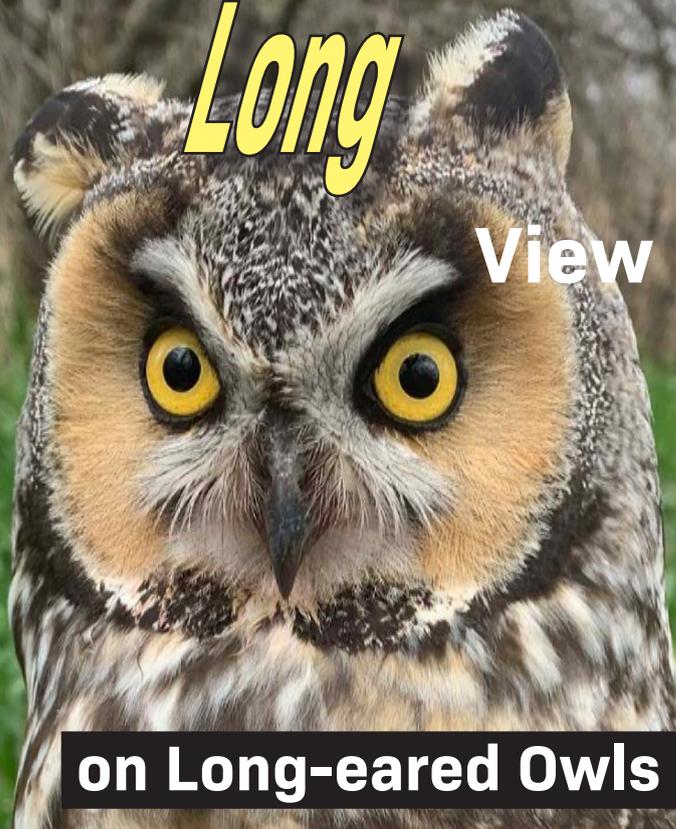
We haven't had the resources to do the Short-eared Owl nesting study every year, but here's some data to give you an idea of the number of nests we've found that were successful vs. the number of nests that have failed (no chicks hatched or fledged). Across these six years of data: Total success = 46 | Total failure = 26 | Total nests: 72



Thank you to our volunteers
Brenna Cassidy and Lindsay Petrillo!

Previous page: SKC students dragging for Short-eared Owl nests in open grasslands in the Mission Valley. This survey method involves walking transects across an open area with a rope strung between two (or more) people, dragging it across the top of the grass. Short-eared Owls (and other ground-nesting birds) will flush when the rope gets near, and the researchers will note where the bird flushed from and then carefully search the area to find the nest.

The Long View



on Long-eared Owls

BEHAVIORS WE'VE DOCUMENTED:

Natal Philopatry

When an owl nests in the same place where it hatched

Breeding Site Fidelity

When an owl nests in the same place for more than one year



Polygyny

When a male owl breeds with two different females in the same year

Thank you to this year's volunteer "brush-beaters": Hannah Beyl, Zoey Greenberg, Alex Jehle, Elsa Jehle, Lesley Rolls, and Chris Taft

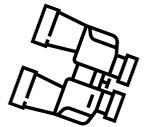


IN CONTRAST to last year's "boom" nesting year for Long-eared Owls in our study area, this year was a "crash". We found and monitored only 2 nests this year, both of which fledged 4 young each. Despite this, the trendlines for nest numbers held mostly steady - hinting at a decline, but not decreasing drastically.

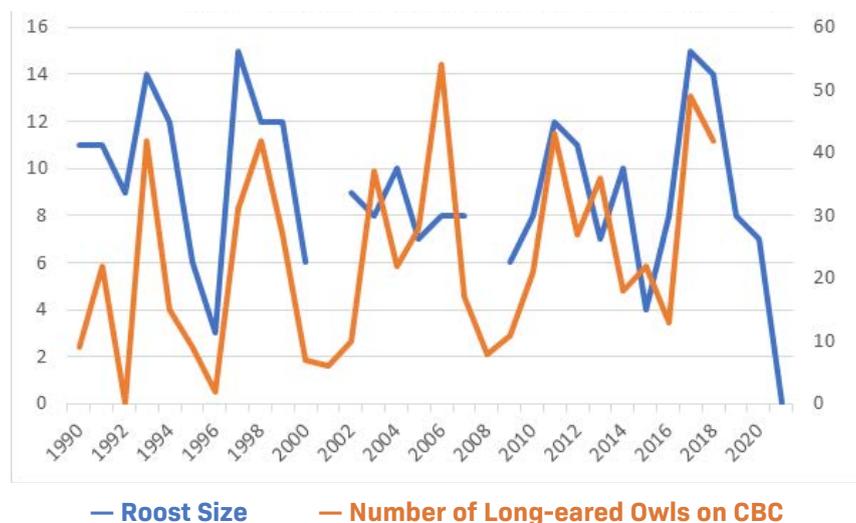
Given land ownership changes and shifting much of our work to the Mission Valley, we have decided that the time is right to wrap up the Long-eared Owl project in the Missoula Valley.

We will likely continue our work there to a minimal degree in a few limited areas and concentrate our efforts on Long-eared Owls and long-term research in the Mission Valley. It will definitely be hard to let go, but after over 35 years, beginning in January of 1987, we have a lot of great data on the species in the Missoula Valley. We are eternally grateful for all of the people this project was able to reach and the valuable learning opportunities it provided. Sadly, development and increased land usage continue to encroach on the Long-eared Owl's habitat and key nesting and wintering areas around Missoula, and we fear that the Long-eared Owl population will no longer be viable.

For many years, we have participated in the Christmas Bird Count (CBC) through the National Audubon Society, counting all avian species, including Long-eared Owls, on one day each year.



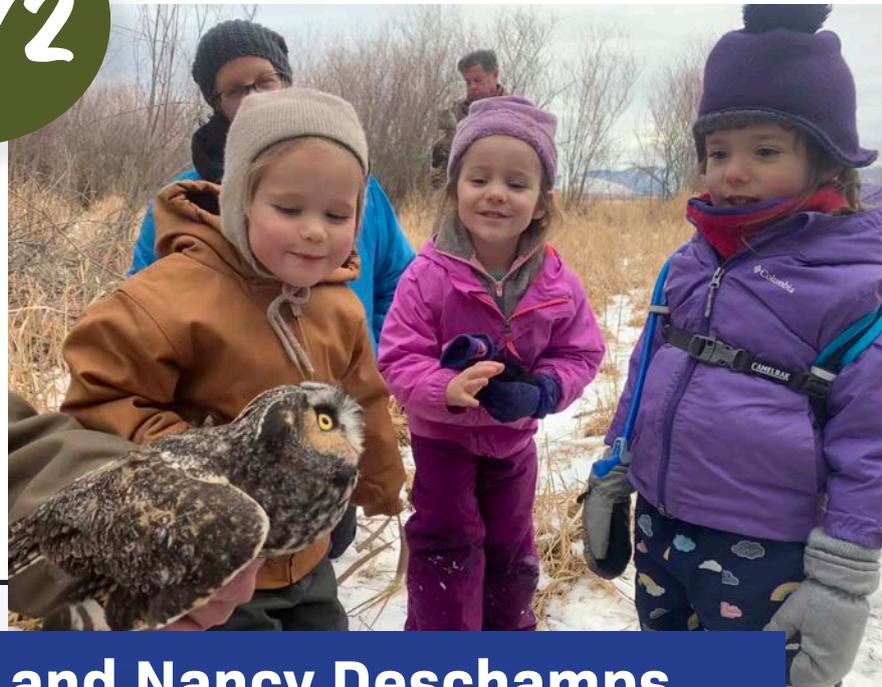
We find that the number of Long-eared Owls counted in the CBC is correlated with the actual number of roosting individuals in the area (see graph below), and so we may be able to use this as a way to continue to monitor the long-term population fluctuations of the Missoula Valley Long-eared Owls.





Most of our recaptures have been owls banded within our study area or in Montana. However, we have also had owls we banded in Missoula found in Idaho, Nevada, Utah, and even Mexico.

Above: Long-eared Owl chicks. Right: You can never start too young: an excited group of preschoolers spent a day in the field with ORI for some winter Long-eared Owl banding.



THANK YOU to Charlie and Nancy Deschamps

I would personally like to thank Charlie and Nancy for allowing me and the ORI the opportunity to conduct research on their ranch in the Missoula Valley.

Thirty-five years ago I drove down the long dirt road and was greeted by two barking and ankle-nipping dogs. Charlie came out and asked what I wanted. He was polite but firm. I asked about permission to conduct an Audubon Christmas Bird Count (CBC). After making it explicitly clear that I was not there to hunt, I explained what I was doing. He agreed to let me onto his property to look for birds.

We recorded 20 Long-eared Owls for the CBC that year—the highest number of Long-eared Owls ever recorded in the Missoula Valley at that time. And so began the longest year-round study of Long-eared Owls in North America.

Time has passed and Charlie and Nancy are slowly retiring. They have sold most of the ranch, and have decided to limit access on the remaining land.

As one of the largest land owners west of Missoula, many people wanted access to their land. We wanted access for wildlife research, others for bird watching, nature hikes, and hunting. Some people trespassed, and others illegally poached game. I can see how they want a little peace. The new land owner also does not want people roaming the ranch. I understand all of their views.

So, after 35 years, our research on the Deschamp Ranch is wrapping up. Yet over these 35 years we became friends. We went to basketball games, had dinner at the farm house, I helped brand calves a few times, and even helped Charlie pull (deliver) a calf. We also had many conversations leaning over the bed of Charlie's pick-up truck. I cannot thank Charlie and Nancy enough. Private land is vitally important for wildlife, and to have access to private land is an honor.

Denver Holt

What's UP with Northern Pygmy Owls?



Left: Steve with a “peeper” camera, or a small camera on a telescoping pole, used to look into otherwise inaccessible cavities. Sometimes we find owls, but occasionally we find other inhabitants, like this squirrel (below).



a bountiful year. Unfortunately the trend did not continue. Gradually, over the ensuing weeks, the couples failed to last, or were lost to us, and the season became more frustrating.

Ironically, after the early promise of a big year, the only pair that we were able to follow to nesting was the pair that we heard that first morning in February. The nest was “late” by about two weeks, and only produced three chicks, whereas five to seven has been our usual the last decade.

Several themes of this season carried over from the last few years. We observed multiple examples of nest defense by both the male and female adults against various threats, including: red squirrels, Hairy Woodpeckers, Williamson’s Sapsuckers, and our “peeper” camera.

Updates from Steve Hiro

THE 2021 NORTHERN PYGMY OWL breeding season got off to a promising start in mid-February. We have been heading out a little earlier each year, as we discover that the pair bonding between these owls is more extended than initially thought. The first morning of surveys for the season, as soon as we got out of the car we hear an owl hooting, quickly joined in a duet with another bird. What a beginning!

Within the first two weeks, with daily surveillance at our usual sites, we were able to identify six or seven duetting pairs, and felt we were in for



The cavity these Northern Pygmy Owl chicks were raised in was about 50 ft (15.24 m) above the ground, too high for our “peeper” camera (see previous page). By spending many hours observing the cavity and taking pictures through the spotting scope, Chloe and Steve were able to identify the three individual chicks based on the unique white spots on each chick’s face.

Another observation this season reconfirms what we have been witnessing over the past three years, with multiple examples. A pair will seemingly choose a nesting cavity, and interact around it for two to three days, including copulation and both birds entering the cavity for extended periods of time. They then move on, sometimes to a cavity we locate (what happened this year), or to some other location we fail to find. This is especially frustrating! This phenomenon has happened at least six times in the last three years.

All in all, every Northern Pygmy Owl season is challenging, rewarding, frustrating, and fun. Let there be many more!



From left to right: Steve, Chloe, volunteer Elsa Jehle, and Elsa’s grandfather Tim McGuire observing the Northern Pygmy Owl cavity.

Volunteer Profile:

Elsa and Alex Jehle



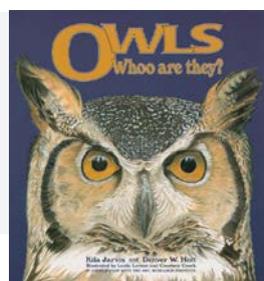
by Janet Rose

IT'S EASY to have a passion for owls and most of us have our favorites — Snowies, Saw-whets, Great Grays, each species with its own set of unique characteristics. Owls, we can agree, are among the most iconic and most recognizable of birds, and among the best indicators of an environment's health. We know why we love owls, but the nagging question we often ask in conservation and research — how do we inspire future generations to become involved in studying them, to know the species and understand their importance in the natural world.

Enter teachers and parents, among the most influential mentors for youth. And indeed, it was a special teacher and a dedicated father, who first inspired Elsa Jehle, a then second-grader, to become a budding owl field biologist. Elsa is 13 now and her passion for owls hasn't waned; in fact, it's as strong as ever. Elsa's teacher, Kila Jarvis, herself an owl expert, first introduced Elsa to owls in her classroom through a special project but it was Elsa's father, Alex Jehle who enabled Elsa to pursue her interest, joining her on her field efforts and facilitating Elsa's growing interest.

Above: Elsa releases a Short-eared Owl. Facing page: bottom left- Alex and Elsa Jehle. Top right- Elsa holds a Long-eared Owl. Photos courtesy of Alex Jehle.

Fun note: Kila Jarvis (Elsa's teacher) and Denver Holt coauthored the children's book "Owls: Who are They?" (Mountain Press, 1996) which you can purchase on the ORI website or at your favorite local bookstore.



Dr. Alex Jehle is a cardiologist in Missoula, Montana and, driven by his own wildlife and scientific research interests, readily supported his daughter's passion.

Dr. Jehle is also a new board member of the Owl Research Institute, selected for this role because of his own passionate interest in owls and commitment to advancing our understanding of owls through ongoing research. While his daughter Elsa was the catalyst, it didn't take any convincing for him to share Elsa's interest. Because Elsa is young and unable to drive, it's dad who shuttles Elsa into the field, whether it's banding Saw-whets or looking for Great Gray nests. Since most of the field work is done in the evenings, when owls are most active, father and daughter usually grab dinner together and then head into the field.

Elsa and Alex know how lucky they are to be in Montana, a state with as many as 15 different species of owls, making research easier, more extensive and always fascinating. Add the fact that the Owl Research Institute is physically here



in Montana (Charlo, Montana). As one of the most renowned research centers in the world, conducting some of the world's longest research studies, it means that Alex and Elsa can interact with the team close to home as much and as often as needed.

Elsa admits she was the one who started the owl passion but led her dad into it 100%. Alex adds that he developed a love for owls himself and even had aspirations of teaching biology about owls so this whole experience was a natural fit for him. "There's nothing," he says, "that can compare with this experience," adding "both of us always look forward to the Saw-whet season, when we participate in volunteer banding, monitoring and documentation of findings."

Although their love of owls is a family affair, Dr. Jehle says even his patients are now becoming part of his passion. As Director of the international Heart Institute, Dr. Jehle admits he always talks to his patients about owls, and



he's always recruiting for ranch and home locations where they might find new nesting sites and places to conduct field research. He says his patients appreciate the information, and really enjoy learning about his daughter's passion for owls.

ORI is very grateful for the generosity and support of individuals like Dr. Jehle and his daughter Elsa. Their passionate commitment to owl research, conservation and education makes all the difference.

Thank you!

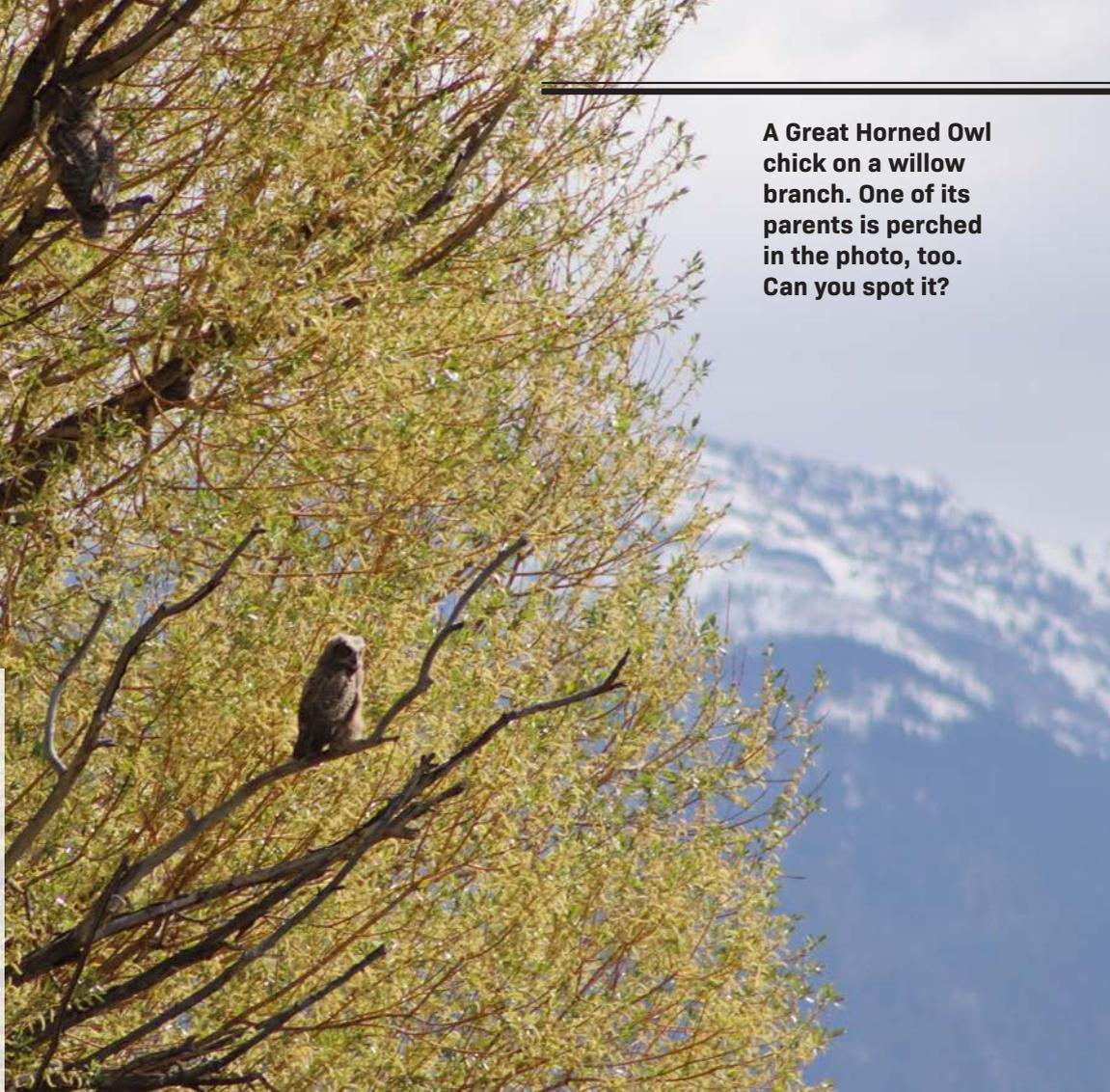
Not the Quietest Neighbors...

BY CHLOE HERNANDEZ

LIVING AT THE FIELD STATION, surrounded by conservation land, you'd think you would feel completely alone. Not the least bit when there is a Great Horned Owl family living there too!

When I came to the Owl Research Institute in March, I didn't anticipate also living alongside owls in the backyard. Each evening the Great Horned Owl parents would vocalize to one another, while their three chicks remained snug on the nest.

In late April, the chicks began to branch, and you could easily spot each one as they gave away their positions with their harsh, shrieking begging calls. Soon after, they began to take short flights. As beginning fliers, I would witness the chicks crashing into branches or into the ground. They would execute labored flights around the field station, begging their parents for food relentlessly.



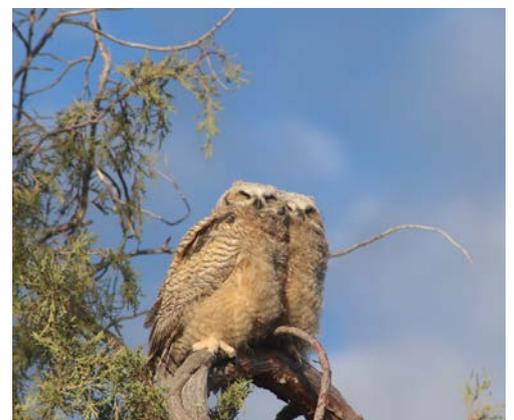
A Great Horned Owl chick on a willow branch. One of its parents is perched in the photo, too. Can you spot it?

I would catch sight of the parents bringing in all kinds of prey, including American Coot, Ring-necked Pheasant, and Mallard. Like clockwork, from dusk until dawn, the chicks would come out of their day roosts in the willows to beg their parents for food.

When they weren't begging, I would observe them talon locking underneath the pear tree, climbing and sliding down the metal roof of the house, or roosting together on a dead tree after a meal.

Observing these owls everyday was such a delight, but I would

recommend earplugs if you have a Great Horned Owl family in your backyard!



Two Great Horned Owl chicks perch together outside the farm house.

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www.OwlResearchInstitute.org 

There, you can:

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- Check out our online store
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Tune into our live cams



Watch the magic of wild owls in real time as they roost, nest, and raise a family! Cams are seasonal, and are brought to you by our friends at [Explore.org](https://www.explore.org) - the world's leading philanthropic live nature cam network and documentary film channel.

Follow us on social media



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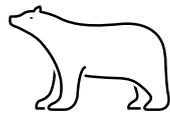
Upcoming Publications

We have enormous amounts of data for each of our projects. In fact, we have some of the most comprehensive studies of several species of owls in all of North America. We are now trying to get more writing done and have made some strides.

Manuscripts submitted recently include:

- *On Being a Wildlife Researcher: The 10-Year Rule*
- *Is This Philopatry or Dispersal in Female Boreal Owls?*
- *Why Have Snowy Owls Evolved Sexual Color Dimorphism?*
- *Feeding Ecology of Snowy Owls from Utqiagvik, Alaska*

Frozen Planet II



ORI provided field expertise and information on Snowy Owl breeding ecology for the BBC documentary series Frozen Planet II. Narrated by David Attenborough, it should premiere in early 2022. ORI also advised on the first Frozen Planet series.

ORI Wish List

In each newsletter, we provide a list of items that will help us with our research projects and facility maintenance.

- Binoculars and scopes - for interns and volunteers
- Dissecting microscope - lab work
- Mist nets - for capturing owls
- Scales - for weighing owls and small mammals
- Natural history books - for references
- Natural history art - sprucing up field station
- Shop tools - for endless maintenance
- Suburban or pick-up truck - for crews and gear
- Small Tractor - for field station maintenance
- Trail Cameras - for monitoring owl nests
- ATVs - field work
- Snowmobiles - field work

Denver in Alaska.



Photo | Max Lowe

Many Extra Thanks:

To volunteer Jon Barlow for all his help with maintenance around the farm!



To all of the photographers who provided photos for this issue:

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Kurt Lindsay
Max Lowe
Kylie Mohr
Austin Novy





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Project WAFLS Working Group

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Wells Lamot Work Gloves

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Northern Saw-whet Owl. Photo | ORI