

Where are the Wolverines?

In an unprecedented multistate survey, biologists found the forest carnivore everywhere they thought they should be - along with a few surprises.



PHOTO BY: shuttertock.com/karel bartik

by Tom Kuglin*, Natural Resources Reporter for the Independent Record in Helena
This article originally appeared in November-December issue of Montana Outdoors, the magazine of Montana Fish, Wildlife & Parks. Used with permission.

To most people, it's a wonder that biologists found *any* wolverines.

Only the size of a border collie, the elusive carnivores have home ranges of up to 500 square miles and live in the most remote reaches of North America. Few people, even backcountry outfitters, have ever seen one in the wild. So when scientists set out two years ago to find where wolverines occur in Montana, Idaho, Wyoming, and Washington, the task was daunting.

To do it, they used old-school wildlife monitoring gear, like scent lures and snowshoes, as well as snowmobiles and the latest computer-aided scientific analysis.

The four states, along with federal, tribal, and university partners, recently finished their first report on what's called the Western States Wolverine Conservation Project. The document details the unprecedented multistate survey of this largest land-dwelling member of the weasel family. "This whole effort started with putting people who know wolverines in a room and asking the question, 'What can we do to make sure this species is here decades from now?'" says Bob Inman, Montana Fish, Wildlife & Parks (FWP) Carnivore-Furbearer Program coordinator.

Researchers traditionally study wolverines anecdotally or with small-scale projects in known hotbeds in a few mountain ranges and national parks. The new survey looked for the mountain carnivores in an area of nearly 55,000 square miles. Researchers and wildlife managers now have baseline information to determine whether distribution of this iconic high-country species grows or shrinks in the future. The new data will also help them identify and conserve core breeding populations and decide where to protect connections between critical habitats.

LIVING ON THE EDGE

For thousands of years, wolverines have lived at naturally low densities in some of the most inaccessible terrain in the Northern Rockies and Cascades, Canada, and Alaska. Biologists estimate that, historically, several hundred lived in today's lower 48 states. By 1900, poisoning by federal agencies and unregulated commercial trapping eliminated the species south of the Canadian border. Then, in the 1930s, wolverines started to recolonize their former territory.

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Wolverines have a well-deserved reputation for ferocity and tenacity. Though weighing less than 40 pounds, *Gulo gulo* (from the Latin word for “glutton,” referring to their seemingly insatiable appetites) have been known to chase a grizzly bear off a kill and, in deep snow, use their snowshoe-like paws and crushing jaws to take down elk. “They’re always living on the edge—that’s the constant for them,” says Diane Evans Mack, a biologist with Idaho Fish and Game and a member of the wolverine conservation team. “They have huge territories, and they’re still active in the winter when a lot of prey is either hibernating or gone.”

Inman recalls the day when he realized just how strong and smart wolverines can be. He and colleagues were tracking a radio-collared female in the Spanish Peaks southwest of Bozeman to see if she had produced a litter. As they hiked across snowpack on a 9,000-foot mountain, the biologists came across an elk calf the wolverine had killed and left. While they examined the carcass, the radio receiver began beeping louder and louder. The wolverine was returning.

Inman and the others hid, then watched the 20-pound female try to drag the 30-pound carcass uphill. Every time she stopped to rest, the calf slid back down the hill. After repeated attempts, the wolverine decided instead to drag the elk down and across a boulder field and tuck it deep into a hole under a rock, before going on her way. “It all clicked for me about how this animal makes a living,” Inman says. “Here we are in mid-June, and she basically took that carcass and stuck it in a ‘refrigerator’ that nothing bigger than a wolverine could get to later when there’s not a lot of food around.”

WOLVERINES ARE WHERE?

Scientists have long known that wolverines are one of North America’s hardiest creatures. But they didn’t know exactly where the animals lived, or how habitat fragmentation and declining snowpack from climate change affect the species. Unlike elk and other game species that generate hunting license dollars used for monitoring and management, wolverines create no income for research. The resulting lack of information, especially regarding the possible effects of reduced snowpack, led the U.S. Fish & Wildlife Service in 2013 to consider listing wolverines under the Endangered Species Act.

“

Whether they’re listed as threatened or not, we needed more information to make good management decisions.

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Though the agency eventually concluded that listing was “not warranted,” the four states decided to marshal forces and come up with a collective strategy to conserve wolverine populations in much the same way as if the species had been federally protected. “The states have wanted to do more for wolverines for years,” says Inman, who previously directed wolverine conservation for the Wildlife Conservation Society. “Whether they’re listed as federally threatened or not, we needed more information to make good management decisions. That was the impetus for taking on a really difficult project like this one.”

In 2015, wolverine experts met to figure out what the state, tribal, and university partners could accomplish by working together. “Every state has its own interest in management and recovery, and those don’t always align,” says Robert Long, conservation scientist with Woodland Park Zoo in Seattle. Long, part of the zoo’s research team, works with the U.S. Forest Service to monitor wolverines in the northern Cascades and partnered with the Washington Department of Fish & Wildlife on the multistate survey. “But this is a rare, recovering species that’s impossible to study in isolation,” he says. “No one group or isolated mountain range study can give us a picture of what’s going on. This was an opportunity to study a species over the extent of its range with scientific rigor that wouldn’t have been possible if we hadn’t collaborated.”

The first step was to conduct a baseline survey against which future monitoring could be compared. The aim wasn’t to determine an exact population number—that would be astronomically expensive over such a vast landscape—but rather to measure whether wolverine distribution is shrinking, expanding, or holding steady. “First we map where wolverines occur, then we monitor those sites over time to see if the range is changing, and then we figure out why those changes are occurring,” Inman says.

The survey would encompass thousands of square miles of rugged and remote habitat that wolverines historically occupied. “The word that comes to mind is ‘ambitious,’” says Bob Lanka, a recently retired senior wildlife official with the

Wyoming Game and Fish Department who was instrumental in starting the project. “There’s definitely a reason it was never tried before.”

SNOWSHOES AND STATISTICS

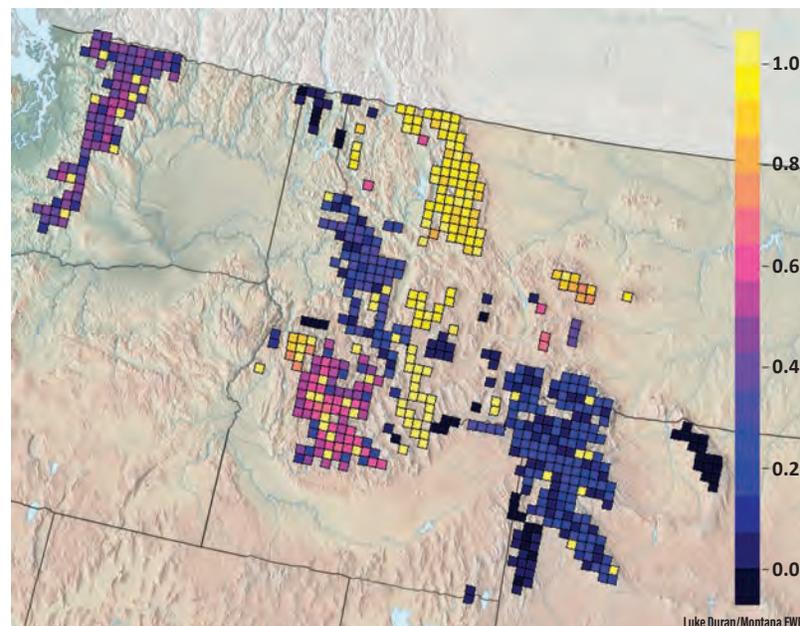
Researchers started by identifying the best wolverine habitat in the four states that either held or could hold wolverines. (In recent years, wolverines have also shown up in California and Colorado, but those states don’t have breeding populations and weren’t included in the survey.) Then biologists divided that vast mountainous landscape into 633 cells, each measuring 87 square miles. Using traditional bait stations aimed at capturing wolverine hair, scientists randomly sampled 183 of the cells to see which ones held wolverines.

The states partnered with the U.S. Forest Service; U.S. Fish & Wildlife Service; National Park Service; the Northern Arapaho, Eastern Shoshone, and Confederated Salish and Kootenai Tribes; University of Montana; and Montana State University. The partners raised nearly \$1 million for the labor-intensive work.

Survey crews hiked, skied, snowshoed, and snowmobiled deep into mountain ranges in the 183 grid cells and placed bait or scent stations with cameras along with genetics-gathering hair traps. They hung deer, beaver, or other meat on trees into which wire brushes were inserted to catch the hair of wolverines climbing to the bait. Trail cams installed nearby captured images of animals that investigated the sites. The cameras and brushes were checked once a month over four months at stations that could be accessed; stations in extremely remote sites were not visited until the following spring. Snagged hairs were sent to the U.S. Forest Service’s National Genomics Center for Wildlife and Fish Conservation in Missoula for analysis to determine if they came from a wolverine or another carnivore such as a marten or fisher.

Setting up the stations was difficult enough in the backcountry. Even harder was returning in midwinter to check brushes and cameras, which often required traveling through deep snow in below-zero temperatures. To ensure scientific accuracy of the findings, scientists established strict field protocols, including everything from the placement of cameras within each cell to the size of the brushes used to snag wolverine hair. “The point was to make sure the data from each cell was collected in the exact same way, so that analysis of all the information was as accurate and repeatable as possible,” says Evans Mack, the Idaho biologist.

The survey detected wolverines in 59 of the 183 cells that were sampled. But just because a camera or brush didn’t detect a wolverine didn’t mean the animals weren’t living in that cell. To account for what’s known as “imperfect



Where the wolverines (most likely) are

Researchers didn’t look for wolverines in all of the 633 cells they identified as possible habitat. That would have been astronomically expensive in these remote mountains. But they sampled 183 cells and found wolverines in 59. After analyzing the findings, and accounting for “imperfect detectability,” scientists concluded that wolverines were likely present in roughly half of the 633 cells. The colors on this map represent the probability that wolverines live in an individual cell, ranging from yellow for high probability (1.0) to dark purple and black for low probability (0.0)

detectability,” the study hired Paul Lukacs of the Quantitative Wildlife Ecology Lab at the University of Montana. Lukacs analyzed forest cover and other characteristics of cells with high and low levels of detection (ranging from one detection per month over four months to only one detection over four months). That allowed him to estimate the probability that cells where wolverines weren’t identified did contain the animals. He estimated that if a wolverine lived in a sampled cell, there was a 92 percent chance of detecting it there at least once over the entire four-month survey. “That’s a really high detection probability for a rare animal,” Lukacs says. “It shows that the biologists knew how to attract wolverines to the bait stations.” After accounting for imperfect detectability, the team adjusted the estimate of occupancy at cells where wolverines were not detected and concluded that wolverines were likely present in roughly half the 633 cells.

EXCITING DISCOVERIES

Though occupancy varied across the study area, with lower rates at the southern periphery, wolverines were found across much of their historic range. “This confirms the broad distribution of wolverines across the region, and that recolonization has progressed substantially since historical lows,” Lanka says. Unsurprisingly, known wolverine hotbeds such as the Bob Marshall Wilderness and central Idaho’s Sawtooth Mountains produced plenty of detections. But so did many other areas previously considered unoccupied, such as the first detection in years in central Montana’s Little Belt Mountains between Helena and Lewistown.

One of the most exciting discoveries was in Wyoming, the southern reach of known wolverine populations in the Northern Rockies. The mountains surrounding Yellowstone National Park have long been known as core habitat. But the survey detected wolverines for the first time in the Gros Ventre Mountains and the southern reaches of the Wind River Range, up to 100 miles south of the park. In the southern Wind River Range, they also identified a male and a female at the same camera station, suggesting that wolverines could be breeding in the area. “It was pretty exciting to find them that far south,” says Zack Walker, Nongame Wildlife Program supervisor for the Wyoming Game and Fish Department.

In Washington, the survey verified two wolverines south of I-90, a region where recolonizing wolverines have only recently been documented. “We’ve got a good amount of public land, and wolverines are starting to show up in places where they haven’t been, and that’s all positive,” Long says. “Knowing that the species is here and recovering gives us additional incentive to learn more about what factors affect where wolverines can and can’t occur.”

Key to the massive survey effort has been nearly unprecedented cooperation and collaboration among the four states, says Lanka, the retired Wyoming wildlife official. “We tend to work within our own state boundaries, but in this case we had experts from across the region come together and create a remarkably effective team



PHOTO BY: Tony Bynum/Montana Outdoors

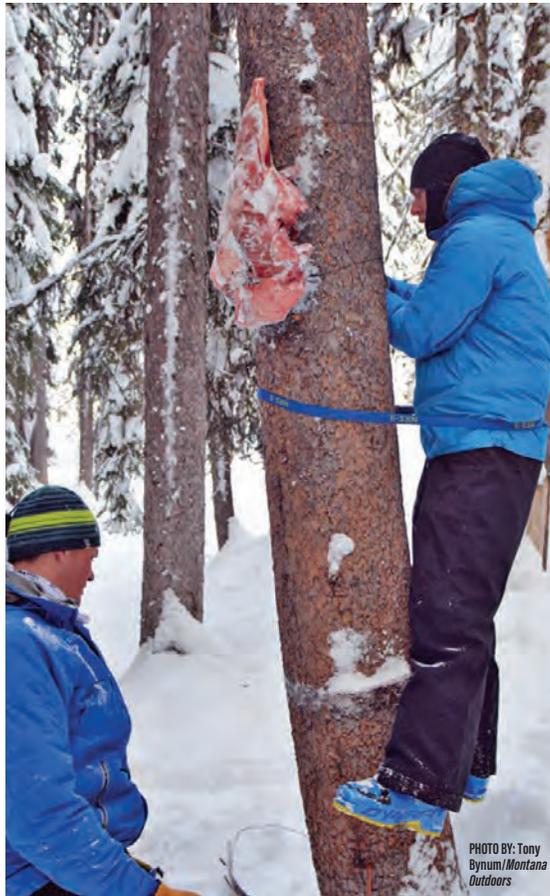


PHOTO BY: Tony Bynum/Montana Outdoors

Clockwise from left: Idaho crew members Peter Ott and Luke Ferguson hang a deer haunch at a remote bait station; In Montana, wildlife technician Wendy Cole checks a trail camera in midwinter; three of the 22,641 wolverine images captured by cameras at 183 stations in four states.



PHOTO BY: Western States Wolverine Conservation Project



PHOTO BY: Western States Wolverine Conservation Project



PHOTO BY: Western States Wolverine Conservation Project

that was able to pull off a nearly impossible task," he says. "I've never seen such extensive collaboration among agencies and NGOs [nongovernmental organizations] in my entire career."

Justin Gude, head of wildlife research for FWP, says that collaboration and commitment has led the four states to agree to repeat the survey every five years to see if wolverine distribution grows or shrinks. "That will help us see the effects on distribution from things like climate change, human development, and translocations," he says.

In the meantime, biologists want to identify key connectivity corridors between core habitats and figure out how to protect them. They hope to combine information from a Montana State University study on wolverine habitat use in the Greater Yellowstone Ecosystem with research from Glacier National Park, central Idaho, and the northern Cascades. "That would give us comprehensive data on which to model connectivity among the core alpine habitat patches that wolverines use," says Gude.

Wolverine habitat in designated wilderness areas is protected from roads and oil, gas, and other development that could hamper the animals' movement. Key habitat on private land is another matter. The project's partners want to safeguard corridors so the animals can move through private property, using conservation easements with landowner partners. Connectivity is essential to link populations and allow wolverines to move the vast distances necessary for finding mates, essential for the species' long-term survival.

Team members have also begun talking to wolverine experts in other Western states about translocating wolverines to new areas of suitable habitat. "From the very beginning of this project, our mantra has been 'connect, restore, and monitor,'" says Inman. "We've made a great start on monitoring, and now we're moving into the connection and restoration work." 

Few and Far Between

Forest carnivores with home ranges of up to 500 square miles, wolverines have always lived in low densities. Biologists estimate that, historically, only several hundred occupied today's lower 48 states, mostly in the high-mountain habitats where scientists found them in a recent survey.

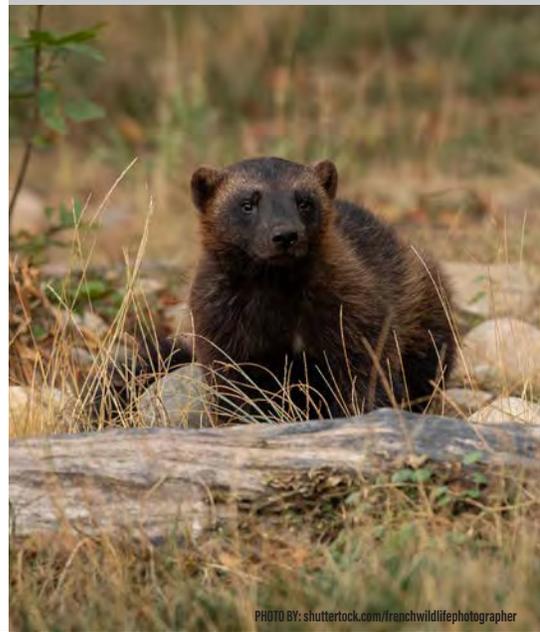


PHOTO BY: shutterstock.com/frenchwildlifephotographer

Scent dispensers save time and money

Designed by wildlife biologists and Microsoft engineers, the battery-powered dispensers are housed in metal casings. Each day throughout the winter, the devices dispensed a few drops of wolverine lure onto a cow femur.

A cow femur, attached to the tree, held the scent dripped from above.

Four brass gun-cleaning brushes attached to the tree snared the hair of any wolverine that climbed to investigate the scent. The hair was sent to a lab for DNA analysis.

Most of the 183 lure stations in the study used meat and a sponge soaked in scent lure to attract wolverines. The stations needed to be checked and restocked with new meat and lure once per month throughout the winter.

But some stations were so remote they couldn't be regularly resupplied. The solution? Automatic scent dispensers.

Robert Long of Woodland Park Zoo in Seattle and Joel Sauder of the Idaho Department of Fish and Game had previously worked with engineers at Microsoft to create an ultra-low power processor that controlled a pump and a scent reservoir that would regularly release small amounts of wolverine lure in the dead of winter. The dispensers, installed at 30 remote lure stations, ran on lithium batteries and were designed to operate in temperatures down to -40 degrees F.

After being set up in October, each device dispensed a few drops of wolverine lure daily onto a cow femur attached below. The bone held the scent and gave the wolverine something to chew on. Crews returned to the sites in late winter or early spring, as soon as snow conditions allowed, to retrieve hair samples and trail camera files.

The scent-dispenser stations attracted wolverine just as effectively as did the labor-intensive meat-and-sponge stations. That means "agencies could cut future survey costs substantially if we use the

dispenser at all the sites," says Just Gude, head of wildlife research for Montana FWP. Woodland Park Zoo is currently developing an updated dispenser and intends to produce devices for researchers, says Long.

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Wildlife Viewing

Winter Birding in Southeast Idaho

by Hilary Turner*, Wildlife Technician,
Idaho Department of Fish and Game

Winter in southeast Idaho brings snow, wind, and cold, causing many humans to retreat to the warmth of their homes. Some wild animals also retreat – bears hibernate in their dens, birds migrate south, and deer and elk leave high elevation summering grounds for valleys. But resident wild animals remain on their home ranges year-round, dealing with the harsh reality of winter in SE Idaho. And for some animals, southeast Idaho is the southern extent of their seasonal movements. For the humans that enjoy the outdoors during winter, the birds are some of the most noticeable wildlife.

The northeast corner of southeast Idaho is an extremely diverse area for birding, even in the winter. According to data from eBird.org, 269 species have been seen in Idaho during winter months (Dec-Feb) in all years. 159 of these species (more than half) have been seen in Bingham, Bonneville, Clark, Fremont, Jefferson, and Madison counties together, during the same time period. The riparian corridors of the Snake River, including the Henrys Fork and its associated sloughs which don't freeze in the winter, provide habitat for wintering songbirds, water birds, and raptors. The sagebrush steppe and agricultural lands that surround Idaho Falls and Rexburg, may seem barren in the winter. However, a variety of life persists in these open landscapes. The juniper foothills of SE Idaho provide habitat for a number of wintering bird species, such as raptors, songbirds, and owls.

HENRYS FORK OF THE SNAKE RIVER

The Henrys Fork of the Snake River originates in Island Park, fed by multiple warm water springs. In the summer months, the area is a popular fly-fishing destination and its many accessible stretches are covered in fly fishermen and other recreationalists. During the first part of November, trumpeter swans begin to arrive and soon they blanket the river. Occasionally a lost tundra swan joins them. A small proportion of the wintering swans represent resident individuals from the surrounding [Greater Yellowstone Ecosystem](#), but a migratory Canadian population of trumpeters causes the local population on the Henrys and South forks of the Snake to exceed 3000 in the winter. Cross country skiing is a popular activity at Harriman State Park, where the swans are also visible on the Henrys Fork. Citizens can help state and federal agencies track trumpeter swan movements by keeping an eye out for collared birds and reporting collar numbers to: www.reportband.gov

Other waterfowl species such as common and hooded mergansers, common and Barrow's goldeneyes and mallards can be found along the Henrys Fork during the winter. Bald eagles fish, hunt waterfowl, and scavenge carcasses along the Henrys Fork in the winter. Great blue herons and belted kingfishers also take advantage of the open water. The Henrys Fork cascades over the rim of the caldera at Mesa Falls and joins the Snake River about ten miles southwest of Rexburg.

Near Rexburg, the Henrys Fork breaks into multiple channels and sloughs. Idaho Department of Fish and Game (IDFG) owns a property in the area known as [Cartier Slough Wildlife Management Area \(WMA\)](#), which is also designated as an [Important Bird Area \(IBA\)](#) by the National Audubon Society. IDFG's property ensures public access opportunities for hunting and wildlife watching, as most of the land around the Henrys Fork is private in that area. Most of the water is open year-round and provides critical wintering habitat for large numbers of waterfowl, as well as moose and white-tailed deer. Wilson's snipe and killdeer can be found in these warm water sloughs during winter months and the cottonwood willow river bottoms of the Henrys Fork provide wintering habitat for American tree sparrows, great horned owls, and downy woodpeckers. The occasional goshawk or great gray owl may treat a persistent observer in the area.

SAGEBRUSH STEPPE AND AGRICULTURAL LANDS

The agricultural lands and sagebrush steppe outside of Idaho Falls and Rexburg may seem bleak in the winter, especially when snow covered. However, these areas are actually full of rodents, some of which are active



PHOTO: American kestrel by Patty Pickett

all winter, resulting in food for one of the more iconic groups of birds – the raptors. Fences and utility poles provide ample perches for hunting birds of prey. Southeast Idaho has large numbers of wintering raptors, including lots of rough-legged hawks, which breed in the Arctic and winter in southern Canada and the northern US. **Mud Lake WMA**, another IDFG property, is great for viewing raptors in the winter. The WMA and its surrounding agricultural lands attract many northern harriers, rough-legged and red-tailed hawks, and barn and great horned owls, as well as the occasional northern goshawk. Quite near, at **Camas National Wildlife Refuge**, bald eagles of all ages can be seen in large groups during winter months, especially at night when they head into the cottonwoods to roost. The twin Menan Buttes rise out of the sage in Madison County and host a resident pair of golden eagles which can sometimes be spotted performing their impressive undulating territorial display. Prairie falcons are seen in that area as well. Occasionally, gyrfalcons wander into southeast Idaho, providing excitement for birders near and far!

Spent grain, residual seedheads, and even sagebrush itself provide nutrition for songbirds, waterfowl, and gamebirds during the winter. Sharp-tailed grouse and gray partridge are often flushed out of fields or borrow pits and greater sage-grouse rely on sagebrush that is accessible all winter. Fluctuations in snow patterns over the years cause differences in their seasonal movements. Horned larks form large flocks in the winter and prefer areas with bare ground. Any horned lark flock in southeast Idaho should be scanned carefully for snow buntings and Lapland longspurs that sometimes mix in with the larks. Observers should note that the snow bunting has a broad white stripe in its wing that both larks and longspurs lack. Longspurs can be separated from buntings and larks by their dark breast band, patterned face, and rufous wings. According to Darren Clark, a local photographer and birder, the agricultural fields near Walker are excellent for the winter specialty passerines - snow buntings, Lapland longspurs, and gray-crowned rosy-finches.

JUNIPER AT CRESS CREEK

The juniper bench near Ririe is one of my favorite places to hike and bird in the winter. The juniper harbors many wintering passerines, including black-capped chickadees. Most Idahoans have probably seen or heard the tiny, charismatic black-capped chickadee, a denizen of Idaho's cities, riparian areas, and forests and a frequent user of bird feeders. The chickadee's name is a mnemonic device for its alarm call – chick – a – dee – dee – dee. With its unique markings and vocalizations, the chickadee is easily recognized. Chickadees are known to group up with other species in the winter in what are called mixed-species flocks. There is safety in numbers, plus the ability to share knowledge about food and predators. Chickadees are very vocal, especially if there is a predator present in the area. When you are out birding in SE Idaho, listen and watch for chickadees moving through the vegetation - these common songbirds may be your clue to the presence of a small owl nearby or a golden-crowned kinglet in the mixed flock.

At Cress Creek, I always look for the chickadees because their presence is the best clue to the whereabouts of the elusive juniper titmouse. Here in southeast Idaho, we are at the extreme northern extent of the range for juniper titmouse. The titmice are very plain - drab gray with a peaked crest. Both ruby- and golden-crowned kinglets are often found in mixed-species flocks with chickadees at Cress Creek. American robins and Townsend's solitaires are common in the juniper during the winter, as well as cedar and Bohemian waxwings, which are more sporadic depending on the

year. Cress Creek also has prime habitat for raptors. With cliffs overlooking the scenic South Fork of the Snake, Cress Creek Nature Trail is a reliable location for bald and golden eagles, which can usually be seen using the updrafts from the cliffs above the nature trail to gain altitude for hunting. Short-eared owls are occasionally seen in the area.

IDAHO FALLS TOWN BIRDING

If you want to experience the joy of Idaho's wintering birds, but you don't want to leave town, there are plenty of options for you! In Idaho Falls, local birder Steve Butterworth recommends Russ Freeman Memorial Park along the Snake River for great songbird diversity and waterfowl, when the water is open. Bald eagle, brown creeper, northern shrike, downy woodpecker, and hooded merganser have all been documented at Russ Freeman in the winter. Rose Hill Cemetery is known statewide as a birding hotspot location due to the "old growth" nature of the conifers in the large cemetery. Red crossbills are fairly reliable, especially in winter, and their more uncommon



PHOTO: Bald eagles by Hilary Turner/IDFG

Winter is Not the Off-Season

Bald eagles, bohemian waxwings, and horned larks are a few of the great wintering birds to be on the lookout for. Plus, many birds can be easily spotted in leafless trees!



PHOTO: Bohemian waxwings by Patty Pickett



PHOTO: Tundra swans at Camas NWR by Patty Pickett



PHOTO: Rough-legged hawk by Patty Pickett



PHOTO: Dark-eyed junco by Patty Pickett

cousin, the white-winged crossbill, has also been documented in the cemetery. Mountain chickadees, with their raspy version of the chick-a-dee-dee-dee call, are frequently seen in the cemetery, as well as brown creepers and red-breasted nuthatches. Merlins, sharp-shinned hawks, red-tailed hawks, and great horned owls, also make use of the cemetery.

Even just birding in your backyard can be very pleasant during the winter, when birds can use the extra resources that bird feeders and water features provide. House finches and house sparrows frequently visit backyard feeders, as well as chickadees, dark-eyed juncos, red-breasted nuthatches, and American goldfinches. Lesser goldfinches, experiencing recent range expansion, used to be considered rare but are now reliably found at Idaho Falls bird feeders each winter. Nyger thistle is a bird seed that can be used to attract small finches, like the goldfinches. Lesser goldfinch males are bright yellow in the winter with olive backs and dark caps and gray bills. Females are more similar to winter plumage American goldfinches but the gray bill and a white square at the base of the primaries on the lesser goldfinch helps to differentiate them. Black-billed magpies eat peanuts and suet, providing entertainment as they stash food and recall its location later!

WINTER BIRD CONSERVATION

Remember, winter is a very stressful time for wild animals. It is often difficult to secure enough food and water and short days and inclement weather hamper foraging opportunities. When observing birds and other wild animals in the winter, use extreme caution to avoid stressing the animal or causing it to exhaust its energy reserves by running or flying away from you. If you cannot photograph the animal without making it move, please consider the animal and its wellbeing before moving closer. Often if you remain still and quiet, animals will eventually move toward you, allowing better photo opportunities. To read more on ethical wildlife and bird viewing visit listing.aba.org/ethics

INTERESTED IN BEING INVOLVED?

In southeast Idaho, there are a variety of organizations you can become involved with if you are interested in promoting bird conservation and volunteering. The Idaho Master Naturalist program has a chapter in Idaho Falls called Upper Snake Chapter, and they are very active with IDFG. There is a volunteer project for any interest with that group. There is also a chapter in Island Park, known as the Henry's Fork chapter. They are also very active in a variety of conservation projects. Snake River Audubon Society holds annual Christmas Bird Counts in Idaho Falls and Rexburg, as well as having monthly meetings accompanied by a presentation at the Idaho Falls Public Library. If you are interested in contributing data to a giant citizen science database, use eBird.org to report bird sightings. Visit help.ebird.org

Watching in Your Own Backyard
Backyard feeder favorites like goldfinches, juncos, and chickadees can make bird watching from the warmth of your house pleasant when temperatures are frigid out.



PHOTO: Black-capped chickadee by Patty Pickett

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Burrowing owl © Mike Morrison

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Spotlight Species of Greatest Conservation Need

Pygmy Rabbit

Reprinted from the *Idaho State Wildlife Action Plan*

The Pygmy Rabbit is the smallest of North American rabbits and hares and a specialist of sagebrush deserts in portions of eight western states including Idaho. Pygmy Rabbits are patchily distributed in areas with dense, mature sagebrush and deep, loamy soils suitable for digging residential burrows. Suitable habitats are found in intermontane valleys, alluvial fans, drainage bottoms, plateaus, and rolling sagebrush plains of Idaho at elevations ranging from 2,800 to 7,800 feet. Burrow systems are often associated with areas of distinctive mounded microtopography supporting taller sagebrush and deeper soils called "mima-mounds." Pygmy Rabbit is considered a sagebrush-obligate species because it's highly dependent on sagebrush for food and shelter throughout its life cycle. Sagebrush provides essential nutrition comprising 30 to 50% of the diet of Pygmy Rabbits during summer and over 90% during winter. Sagebrush also provides cover from predators and thermal extremes in the sage-steppe environment, and offers structural support to facilitate subnivean (under the snow) burrowing under deep snow conditions.

Pygmy Rabbit populations in the Beaverhead Mountains (forms the Idaho/Montana border and the Continental Divide) area are some of the most robust in the state given the large, continuous extent of suitable sagebrush-steppe habitat in public ownership. The upper Lemhi Valley has been a key site for cutting-edge research on Pygmy rabbits lead by Dr. Janet Rachlow at the University of Idaho and many student and faculty collaborators. Their work, supported by state and federal agencies, has significantly advanced the understanding of Pygmy Rabbit ecology and factors critical to conserving the species in Idaho and the Intermountain West.



PHOTO BY: H. Ulmschneider (BLM) and R. Dixon (IDFG)



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House Finch. Photo: Deborah Bifulco/Great Backyard Bird Count



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January 19- SnowSchool Family Day

The Boise WaterShed is excited to offer families the chance to explore how humans and organisms interact with winter. From 10:00 am-12:00 pm at the Boise WaterShed participants will learn about the intricacies of the winter environment and how it affects them. At noon, pre-registered participants will drive to Bogus Basin and embark on snowshoe tours of the area. Tour groups will be led by trained Bogus Basin SnowSchool instructors. Snow shoes are included. Pre-registration and a \$5 per person donation is required by January 15 to reserve your place in the program. No groups please. Call 608-7300 or email BW@cityofboise.org. No water renewal tour today.

February 16- The Science of Snow Sports

10am -1pm; Have you ever wondered how snow sport athletes glide, slide, and move with such grace? Did you ever consider how a curling stone moves across the ice? Come find out at our Science of Snow Sports day! Participate in fun, active events, observe the science behind sliding on snow or ice and enjoy learning about winter recreation opportunities in Boise. There will be activities and winter crafts for all ages. A water renewal facility tour will be held at 11:30 a.m. weather permitting, closed-toed shoes required, no strollers please.

March 16- World Water Day Celebration

Water unites us around the globe and in our community. Celebrate the United Nations' World Water Day with the theme of Leaving No One Behind (Human Rights and Refugees). Free food and music will entertain you as you explore City of Boise booths, a Pop-Up Library and participate in a community art project to create a water poetry mural. At 10:30, hear stories about our connection to water from around the world. At 11:00 and 12:00 take a tour of the water renewal facility to see how your city cleans used water. First 100 people will receive a copy of the children's book "Spring Waters, Gathering Places" by Bryan Knaff and Sandra Chisholm DeYonge.

Coeur d'Alene Eagle Watch

Each winter from November through January a migrating population of bald eagles visits the Lake Coeur d'Alene area to feed on spawning kokanee salmon. The BLM began counting bald eagles around Wolf Lodge Bay in 1974. The number of eagles returning to this area varies from year to year.

From Coeur d'Alene, travel southeast on I-90 for 7 miles. Turn onto ID 97 south. Suggested viewing spots are Higgins Point, Mineral Ridge Boat Ramp, and Mineral Ridge Trail head.

Learn more and follow the action of the weekly counts: <https://www.blm.gov/programs/fish-and-wildlife/wildlife/about/idaho/lake-coeurdalene-eagle-watch>

Craters of the Moon National Monument and Preserve

18 miles West of Arco on Hwy 20/26/93; (208) 527-1335

nps.gov/crmo/index.htm

Loop Road is Closed but We're Open for Winter!

Winter has arrived at Craters of the Moon and the dark lava rock now wears a mantle of white. The loop drive is closed to automobile travel but is groomed for skiing and snowshoeing. Make plans to visit as there are still many excellent opportunities to explore the park.

January 12, 19, 26 and February 2, 9, 16, 23 and March 2- Snowshoe Walk

1pm - 4pm; Explore a cooler side of Craters of the Moon on a Ranger-guided snowshoe walk. The day begins with a short introduction to the winter environment followed by a fun loop through the park on snowshoes. Look for tracks and climb a volcano on this 2 mile trek. Snowshoes are available for complementary use (donations accepted). Reservations are required and participants need to be at least 10 years of age for this moderately strenuous walk. Group size is limited to 30. Call 208-527-1335 or email (crmo_information@nps.gov) early to sign up for these popular excursions.

January 12, 19, 26 and February 2, 9, 16, 23- Group Snowshoe Walk (BY RESERVATION)

9am - 12pm; Are you looking for a special adventure for your group or club? The day begins with a short introduction to the winter environment followed by a fun loop through the park on snowshoes. Look for tracks and climb a volcano on this 2 mile trek. Snowshoes are available for use and there is no charge for these events (donations accepted). Reservations are required and participants need to be at least 10 years of age for this moderately strenuous walk. Group size is limited to 25. Call 208-527-1335 or email (crmo_information@nps.gov) early to sign up for these popular excursions.

Cross-country Skiing/Snowshoeing- thru February (depending on snow conditions)

The 7 mile loop road is now groomed for skiing and there are no entry or user fees. Most of the Winter Trail follows relatively level terrain and can be completed in 2-4 hours. There are also excellent opportunities for snowshoeing throughout the park including our 1.5 mile snowshoe loop. Please note that pets and bicycles are not permitted on any of our winter trails.

Jim Hall Foothills Learning Center

3188 Sunset Peak Rd., Boise; (208) 493-2530

bee.cityofboise.org/foothills/events/calendar-of-events

BOISE BIRDING SERIES: 1st Wednesdays, 10AM to 12PM

Our free birding program is great for experienced and novice birders alike. Terry Rich, our local ornithologist, provides information and tips on birds in the Boise area and beyond! Come to one or all sessions! Bird books and binoculars are available to borrow. No registration necessary.

February 6- What is the Overall State of Birds Across North America?

The size of the population of a species is one of the factors used to evaluate the species' vulnerability. Small populations are more vulnerable. Terry will talk about how bird populations are estimated, and will look at the population sizes of a number of species, both common and rare.

March 6- Spring Migration

Birds are beginning to move back to Boise after their winter holiday in the south, but each species is on its own schedule. We will be discussing different migratory patterns and how climate change is, and may, play a role.

FOOTHILLS FAMILY DAYS: 2nd Saturdays, 10AM to 1PM

Each month we open our doors for this free, family friendly program with activities, crafts, and interpretive stations. Come and go as you please. You are even welcome to bring a picnic and enjoy our backyard when the weather is nice! No registration required.

January 12- Over and Under the Snow

Learn about animals that survive Idaho's winters both above and below the snow. Explore our "bear den", crawl through "subnivean" tunnel as the mice do, and understand how snow can actually keep animals warm! We'll have warm drinks, Snow experts, and snowflake making.

February 9- Idaho Explorer Day

Develop your explorer skills by starting a naturalist journal, learning to identify plants, and completing our orienteering scavenger hunt. Learn about Idaho's explorer history and check out some tools used when the pioneers began moving west.

March 9- Birds of Prey Day

Falcons, hawks, owls, and eagles! Come get a close up view of a bird of prey, discover your wingspan equivalent, and dress up like an owl. Guided birding hikes will start every hour with local experts and Idaho Bird Observatory's, Heidi Ware, will be on hand to talk about bird banding! There will also be crafts and owl pellet dissection!

Kootenai National Wildlife Refuge

287 West Side Rd., Bonners Ferry; (208) 267-3888

www.fws.gov/refuge/kootenai

January 20, February 17 and March 16 - Bird Walk on the Refuge

Get ready for "BIRD WALK" season! Meet by the Refuge office at 9:00 a.m. rain or shine and dress for the weather. Bring binoculars or scope, field guide if you have one, snacks and good hiking shoes. Public restrooms & water on site. Bird walks last 1-2 hours. Come on out and see some of the unique birds that frequent the refuge. See updates on the Friends of KNWR Facebook page.

MK Nature Center

600 S Walnut St., Boise; (208) 334-2225

idfg.idaho.gov/site/mk-nature-center

January 13 - Bears of Idaho

1pm - 3pm; Free (donations encouraged); Come learn about black and grizzly bears in Idaho. How are they alike and how are they different? Find out how they live, what they eat, and how to be safe when in bear country.

February 3 - Do you LOVE Wildlife?

1pm - 4pm; \$5 for a set of 30 valentines; Make wildlife Valentines for your whole class! You make the wildlife-themed cards....we provide all the materials, workspace, patterns, examples and snacks. Limit 50 kids. Register at sara.focht@idfg.idaho.gov.

March 10 - Beaver Chew

1pm - 3pm; Free (donations encouraged); Beavers are our largest rodent. They have some neat features that help them survive. Come learn about beavers and build a beaver dam of your own!

Thank You for Your Support!

Secrets in the Snow

Detecting tracks and droppings in fresh snow is one of the best ways to know that a pygmy rabbit may be close by. They spend much of the day in burrows they have dug or hiding under branches of sagebrush and other shrubs.

PHOTO: Pygmy rabbit tracks by Tom Koerner/USFWS

Thank you to those who made direct donations, purchased or renewed a wildlife license plate, or let us know of a tax check-off donation between October 1- December 30, 2018.

Your contribution provides important funding for wildlife and habitat conservation in Idaho.

Windows to Wildlife

Wildlife Diversity Program
PO Box 25
Boise, ID 83707-0025

Forwarding Service Requested

Windows to Wildlife is a quarterly publication of the Idaho Watchable Wildlife Committee and IDFG Wildlife Diversity Program.

Deniz Aygen — Editor

deniz.aygen@idfg.idaho.gov
208•287•2750

To submit an article, obtain a subscription, or notify us of address change, contact the Editor at the above address.

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