

Montana Fish, Wildlife & Parks
Region 2 Wildlife Quarterly
April 2021



Technical Bulletin No. 30

Great Blue Heron at Tower Street Conservation Area in January 2021.

Montana Fish, Wildlife & Parks Region 2 Wildlife Quarterly

April 2021

Region 2, 3201 Spurgin Road, Missoula MT 59804, 406-542-5500

Region 2 Wildlife Staff

Matthew Bertellotti, Wildlife Management Areas Maintenance, 406-542-5500

Liz Bradley, Wildlife Biologist, Missoula-West, lbradley@mt.gov, 406-542-5515

Julie Golla, Wildlife Biologist, Upper Clark Fork, jgolla@mt.gov, 406-563-2531

Scott Eggeman, Wildlife Biologist, Blackfoot, seggeman@mt.gov, 406-542-5542

Eli Hampson, Cougar and Bear Management Specialist, 406-542-5508

James Jonkel, Bear and Cougar Management Specialist, jajonkel@mt.gov, 406-542-5508

Kendra McKlosky, Hunting Access Coordinator, kmcklosky@mt.gov, 406-529-2008

Rebecca Mowry, Wildlife Biologist, Bitterroot, rmowry@mt.gov, 406-363-7141

Dave Nikonow, Cooperative Biologist, National Wild Turkey Federation, dnikonow@nwtf.net

Tyler Parks, Wolf-Carnivore Management Specialist, tylerparks@mt.gov, 406-542-5500

Molly Parks, Wolf-Carnivore Management Technician, 406-542-5500

Tyler Rennfield, Hunting Access Resource Specialist, trennfield@mt.gov, 406-317-3041

Torrey Ritter, Wildlife Biologist, Nongame, torrey.ritter@mt.gov, 406-542-5551

Brady Shortman, Wildlife Management Areas Maintenance Supervisor, bshortman@mt.gov 406-693-9083

Adam Sieges, Wildlife Management Areas Maintenance, 406-693-9083

Shawn Smith, Wildlife Management Areas Maintenance, 406-693-9083

Mike Thompson, Regional Wildlife Manager, mthompson@mt.gov, 406-542-5516

Rory Trimbo, Grizzly Bear Management Technician, Rory.Trimbo@mt.gov, 406-465-9343

Bob White, Wildlife Management Areas Maintenance, 406-542-5500

Statewide Staff Housed at Region 2 Headquarters:

Nick DeCesare, Wildlife Biologist, Moose Research Project, ndecesare@mt.gov, 406-542-5500

Rich Harris, Grizzly Bear Planning Coordinator, Richard.Harris@mt.gov

Ben Jimenez, Research Technician, bjimenez@mt.gov, 406-542-5500

Communication & Education Division:

Vivaca Crowser, Regional Information & Education Manager, vcrowser@mt.gov, 406-542-5518

Photographs are by Mike Thompson and Sharon Rose unless otherwise credited.



The Region 2 Wildlife Quarterly is a product of Montana Fish, Wildlife & Parks; 3201 Spurgin Road; Missoula 59804. Its intent is to provide an outlet for a depth of technical information that normally cannot be accommodated by commercial media, yet we hope to retain a readable product for a wide audience. While we strive for accuracy and integrity, this is not a peer-refereed outlet for original scientific research, and results are preliminary. October 2015 was the inaugural issue.

Nongame Update

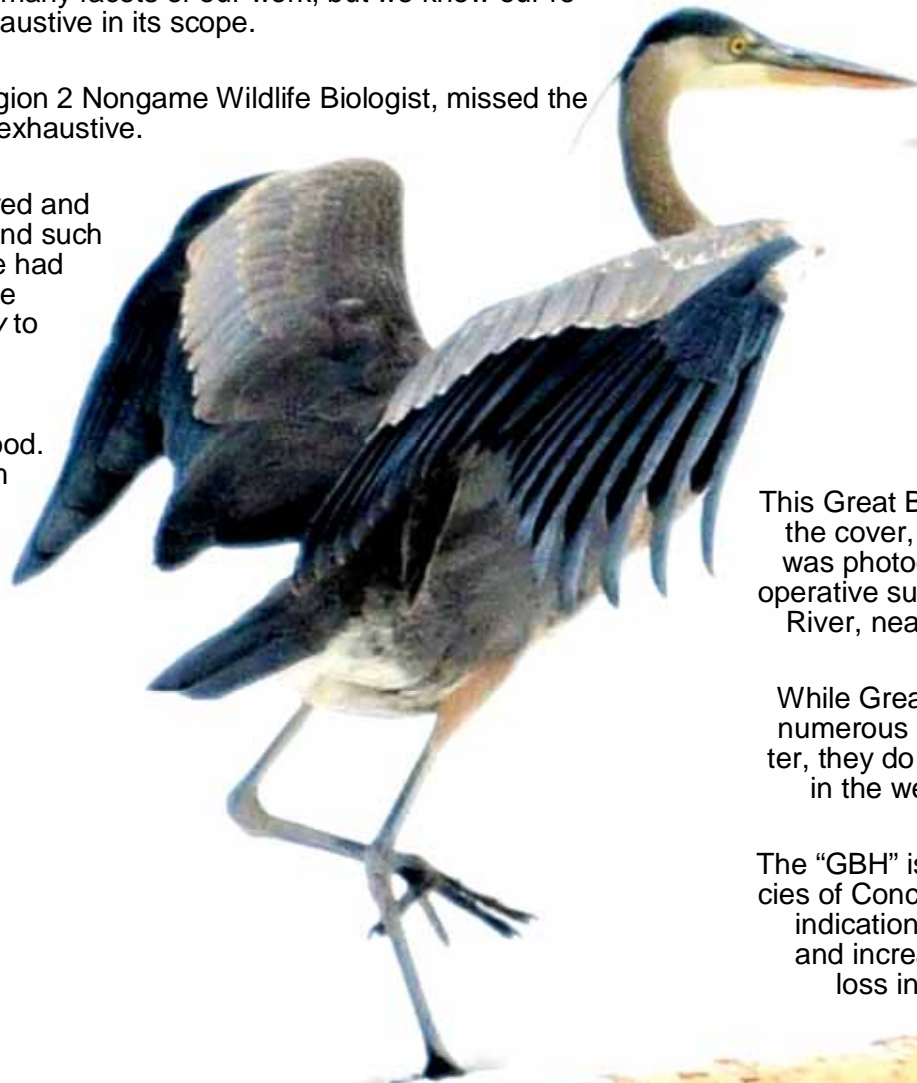
If you haven't seen it, we presented a Region 2 Wildlife Program update in a special online edition of the February 2021 *Wildlife Quarterly*. It was an overview of recent program highlights. We strived to touch on most of the many facets of our work, but we knew our report could not be exhaustive in its scope.

Torrey Ritter, our Region 2 Nongame Wildlife Biologist, missed the part about not being exhaustive.

In fact, Torrey prepared and presented so much and such good material that we had to dedicate a separate issue of the *Quarterly* to nongame work in Region 2.

Too much and too good. What a great problem to have!

Thanks Torrey!



This Great Blue Heron, pictured on the cover, page 2, and this page, was photogenic and quite the cooperative subject on the Clark Fork River, near Missoula, in January.

While Great Blue Herons are less numerous in Montana during winter, they do winter here, especially in the western part of the state.

The "GBH" is designated as a Species of Concern in Montana, due to indications of declining numbers and increasing threats of habitat loss in the riparian areas that GBHs require.



Blackfoot River on May 27, 2018.



Clark Fork River on March 21, 2021.



Rock Creek on May 5, 2019.



Blackfoot River on May 27, 2019.

Ecosystem Engineers



Erskine Fishing Access Site on November 26, 2020.

The beaver is known as an ecosystem engineer and a “keystone species.” A keystone species is an organism that helps hold the ecosystem together. Without their keystone species, ecosystems would look very different. Some ecosystems might not be able to adapt to environmental changes if their keystone species disappeared.

It's hard to think of a better, local example of a keystone species. Beaver dams: 1) protect the stream system from excessive flood damage, 2) capture and store precipitation to augment low flows in the summer and fall, 3) raise the water table and promote the establishment of both woody riparian and aquatic plants, 4) reconnect stream channels to the floodplain, and 5) increase the retention of sediments and organic matter, which can expand the width of the riparian zone.

Because beavers can benefit so many species at once, while also providing water resource resiliency for wildlife and humans, the Region 2 nongame biologist, Torrey Ritter, has a heavy focus on beavers as part of his work.



Bitterroot River on July 20, 2019.

Torrey conducted research on beavers for his masters thesis at Montana State University and brought that expertise with him to Region 2. The citation follows:

Ritter, T. D. 2018. Ecosystem pioneers: beaver dispersal and settlement site selection in the context of habitat restoration. MS thesis, Montana State Univ., Bozeman, 212 pp.



An exciting and recently emerging area of research on beavers is their ability to protect patches of riparian habitat in areas burned by forest fires. Photo courtesy of Clint Sestrich.

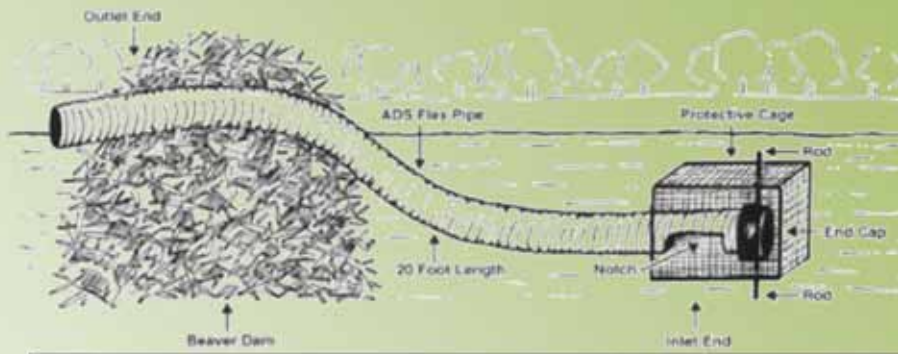


Beaver pond with lodge at Lost Creek State Park. Photo by Torrey Ritter.

One of the most important steps for using beaver to restore habitat is understanding where beavers currently are on the landscape. The nongame biologist and volunteers have surveyed for beavers across many key watersheds in Region 2, including all Wildlife Management Areas (WMAs), all streams that are closed to beaver trapping, key private lands in the upper Clark Fork River watershed, and significant portions of the Lolo Creek drainage (thanks to volunteers and staff with the Clark Fork Coalition and Montana Conservations Corps). Surveys employ office work with aerial imagery (for dam-building beavers) or field surveys, and often the two methods are combined. These surveys will be used to evaluate the status of beaver populations and identify potential areas to encourage colonization by beavers in areas of their historic range.



Beaver lodge serving its overwinter purpose on the Blackfoot-Clearwater WMA.



Below: Staff and volunteers install a flexible pond leveler at a beaver pond in Lost Creek State Park that was frequently flooding a nearby road. The device keeps the pond at a tolerable level for managers while allowing the beavers to stay. (Torrey Ritter photo.)

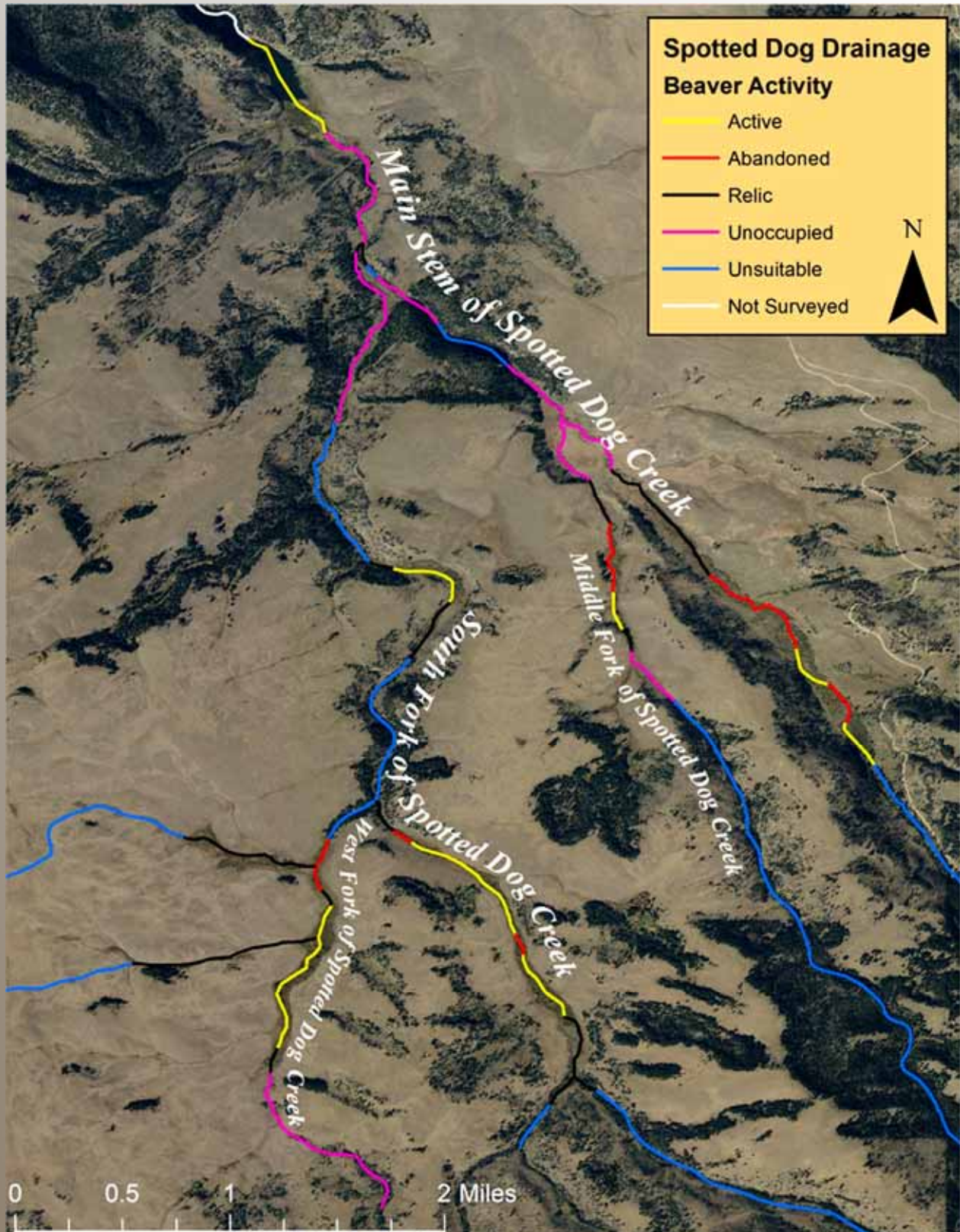


Below: Aerial imagery of a beaver colony. Dams can be surveyed from a computer using aerial imagery, which allows biologists to assess the presence, density, and distribution of beaver colonies on the landscape while also providing important habitat information for informing restoration efforts.



SPOTTED DOG WILDLIFE MANAGEMENT AREA

On the Spotted Dog WMA, the Natural Resource Damage Program, in partnership with FWP, is beginning a multi-phase project to restore riparian conditions, especially those enhanced by beavers, in the Spotted Dog Creek drainage.



The results of beaver activity surveys in the Spotted Dog WMA provide biologists a detailed map of where beavers are currently active and where they are unable to become established due to impaired stream and riparian conditions.

SPOTTED DOG *continued*

In 2020, beaver habitat structures were installed in degraded sections of the main stem of Spotted Dog Creek to begin recovery of the riparian area and provide steppingstones for beavers to become established in subsequent years. Additional restoration work will target the tributaries, using cheap and simple restoration techniques that encourage existing beaver populations to colonize areas they have avoided for decades due to impaired stream conditions.



Torrey Ritter photos.

Above: Staff with the Natural Resource Damage Program and Geum Environmental Consulting check out a recently installed beaver habitat structure on the main stem of Spotted Dog Creek. These structures not only mimic the impacts of natural beaver dams, they also provide a steppingstone for beavers to colonize areas where they have struggled to become established in the past.

Right: A bit of imagination may be required to see the resemblance of the human-constructed structure (above) to this precariously perched, natural beaver dam in a small creek in Region 2.





The same habitat-modifying abilities that make beavers effective and efficient restoration experts also make them a potential nuisance when they dam streams or cut vegetation in an area where they are not desired. In 2019, the Clark Fork Coalition, in partnership with FWP, the National Wildlife Federation, and Defenders of Wildlife hired a Beaver Conflict Resolution Technician (Elissa Chott). Elissa has spent the past two years identifying and implementing non-lethal beaver conflict management solutions on public and private lands throughout Region 2. These techniques not only help people deal with beaver conflicts more effectively, they also work to increase tolerance for beavers on the landscape, hopefully allowing them to occupy areas of their former range without causing a huge headache for private landowners and public land managers.



At the statewide level, the nongame biologist in Region 2 has helped bring about meetings and workshops related to beaver restoration that have brought together diverse individuals, organizations, and agencies around the idea of leveraging the power of beavers to restore our most biologically rich and threatened habitats. These meetings and workshops have spurred great interest in addressing the obstacles and issues surrounding beaver restoration, with the ultimate goal of providing guidance and support for beaver restoration projects in appropriate areas throughout the state. These efforts are on-going.



Top left: Gloating.

Top right: A beaver-felled tree at Erskine Fishing Access Site. Is it a good thing or bad? It's in the eyes of the beholder.

Middle right: Inspecting the scatter of chips at the base of the felled cottonwood.

Bottom right: Little more than an intricate pattern of wild beaver incisions is left behind.

OVERWHICH CREEK TAILED FROG MONITORING



Above: Rocky Mountain tailed frog in Overwhich Creek. Photo by Torrey Ritter. Below: Columbia spotted frog in a Rock Creek backwater. Both species are secure and not in peril across most of their range in Montana.

Over the past 4 years, FWP Region 2 fisheries staff have implemented a rotenone treatment on a remote tributary of the West Fork of the Bitterroot River to remove non-native Yellowstone cutthroat trout and return the stream to a fishless state. The stream is an amphibian production powerhouse, and although the rotenone treatment will likely be highly beneficial to amphibians in the long-term by removing a top predator, it also results in high mortality of amphibians already residing in the stream.

In 2019 and 2020, FWP Region 2 staff and volunteers conducted surveys in the stream for the Rocky Mountain tailed frog. The Rocky Mountain tailed frog is a unique frog species in Montana because it lives in cold, swift mountain streams. During rotenone treatments, biologists noted very high mortality of multiple life stages of these frogs, prompting a need to survey for the species and track its recovery after the rotenone treatment.

In 2019 (the last year of the rotenone treatment) and 2020, biologists found a diversity of life stages of Rocky Mountain tailed frogs throughout the drainage, indicating enough individuals survived the rotenone treatments to repopulate the stream over time. FWP staff will continue these frog surveys every 3-5 years to track the recovery of the frog population, which will help inform future rotenone prescriptions within the range of tailed frogs.



Bottom: A volunteer from the Montana Natural Heritage Program counts Rocky Mountain tailed frogs after a kick-net survey on Overwhich Creek.
Left: The contents of the red bucket are shown in close-up. Multiple life stages of tailed frogs are represented, including 2-4 year-old tadpoles and metamorphs (the stage in-between a tadpole and an adult frog).

Photos by Torrey Ritter



NORTHERN BOG LEMMING



A northern bog lemming visits a scat board under a game camera in a Big Hole Valley fen.



B03 57F13C

08-20-2015 09:40:27

Northern bog lemmings are tiny mammalian residents of unique and rare habitat types known as fens, where groundwater slowly seeps to the surface year-round. In fens, accumulation of plant matter outpaces decay, forming peat. Northern bog lemmings look similar to voles but are much less widespread and more vulnerable to land-use changes and disturbance. The species was petitioned for listing under the Endangered Species Act in 2014 but was precluded from listing due to lack of information on their populations and distribution. It is our hope that we can demonstrate they are well-distributed throughout suitable habitat in their range, and maintain the bog lemming and its unique habitat as part of our tiny-wildlife legacy.

Prior to her retirement from FWP, Region 2 Nongame Wildlife Biologist Kristi DuBois had developed and tested a variety of techniques for detecting northern bog lemmings in fens and wet meadows in Region 2. These techniques included downward-facing game cameras, live traps, snap traps, hair tubes, and scat boards. Of these techniques, it appears DNA analysis through small mammal droppings on scat boards was the most reliable and economical way to survey for this rare and cryptic species.



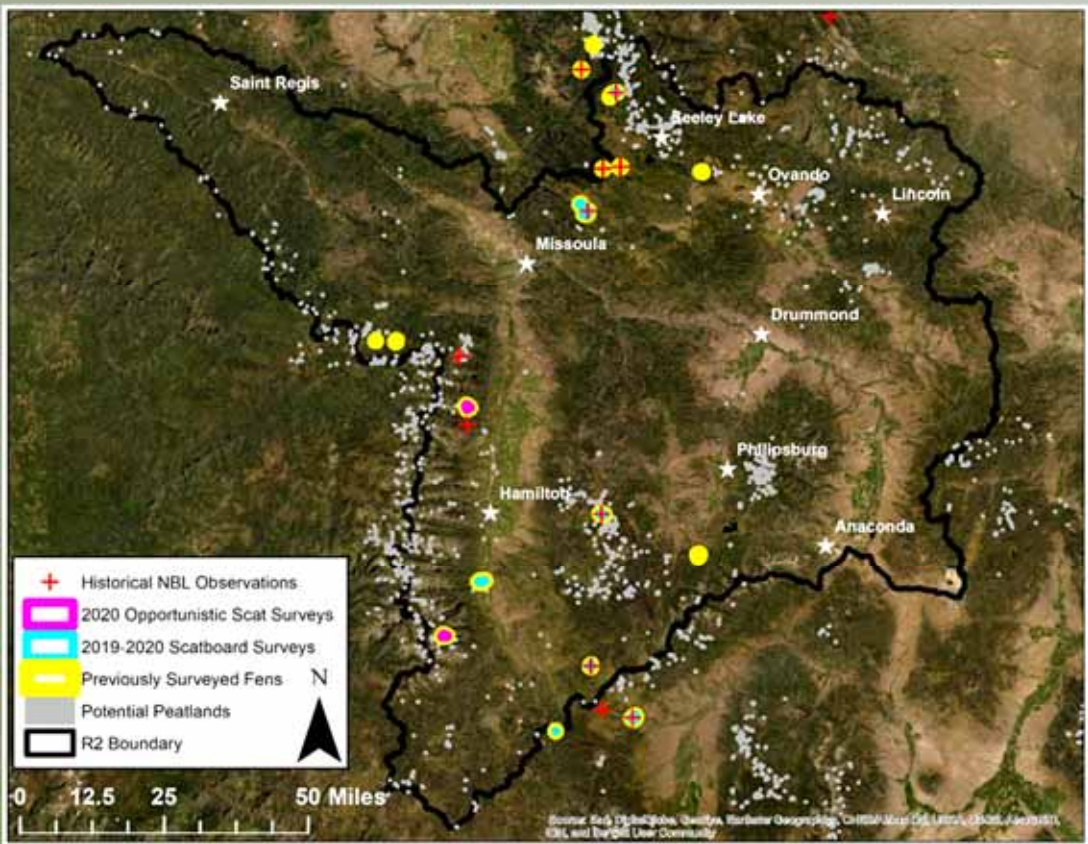
If you place a scat board in a western Montana fen, you're likely to attract small mammal scat. Photo by Torrey Ritter.



A fen in the Bitterroot Mountains near Darby. Photo by Torrey Ritter.

The next step in developing a reliable northern bog lemming sampling protocol is to evaluate the expected minimum number of scat samples that need to be collected from a given fen to be confident a northern bog lemming would be detected if it is in the wetland. We collect basic habitat information as well as characteristics of the poo itself to try and refine the types of micro-habitats northern bog lemmings are detected in as well as if northern bog lemming poos can possibly be distinguished based on color and/or size.

In 2019 and 2020, Region 2 staff deployed arrays of scat boards at 8 different fen systems throughout Region 2. Results of DNA analysis of the scats collected from these wetlands has only been completed for 3 fens in the Bitterroot Mountains. The rest of the scat samples will be analyzed in 2021. Of the 3 sites in the Bitterroots, only 1 was confirmed to have NBL present. Of the other 2 fens, 1 had an NBL detection in 1992 and has not had one since, and 1 has never had an NBL detection but had also never been surveyed before 2019.



Bottom right: Biologist dog Pika takes a break from searching for bog lemming scat. Photo by Torrey Ritter.



Northern bog lemmings were detected for the first time at this fen in 2019. Photo by Torrey Ritter.



Montana Fish, Wildlife & Parks ✓

December 8, 2020 · 🌐

A fen is a very special hole in the forest where groundwater seeps to the surface and creates a beautiful oasis. Fens are often confused with bogs, the only difference being that fens are primarily fed by groundwater and bogs by precipitation. Both bogs and fens are peatlands. Peat is what forms when the build up of dead plant parts outpaces the rate of microbes breaking down those plant parts. Peat is like regular old soil, but it's almost always soaking wet and generally smells worse. The combination of peat and biochemistry stuff I don't fully understand turns fens into biological treasure chests chock full of biological gems!

In Montana, we only have fens. Because the environmental conditions in fens are so unique, many of Montana's rarest plant species are found in fens. Additionally, critters like the elusive (but legendary) northern bog lemming are found primarily near these types of habitats.

Unfortunately, fens are also rather fragile ecosystems. Even a seemingly small change in the biochemistry of the water feeding a fen can give an advantage to plants that outcompete the fen's rare and sensitive species. As a result, we end up recommending generous buffers for timber management and road construction around and upslope of these wetlands to protect them. If you plan on visiting a fen, please tread lightly and check your boots, socks, and clothes for the seeds of potential invasive species before entering.

#TuesdayswithTorrey
#fensareourfriends



Related Pages



Montana State Parks
Government Organization



Visit Montana ✓
Travel Company



Glacier National Park ✓
National Park



Montana Under the Big Sky Series
Tourist Information Center



Montana Fish, Wildlife & Parks - ...
Government Organization



NBC Montana ✓
Broadcasting & Media Production ...



Central Montana
Travel Company



Montana Wild - FWP
Local Business



Parkland Montana

See more of Montana Fish, Wildlife & Parks on Facebook

GREAT GRAY OWL



Great gray owl and nestlings on a broken-top snag in the Blackfoot-Clearwater Wildlife Management Area.

FWP has conducted statewide owl surveys within the last 10 years to develop baseline information on owl presence and distribution for most of the owl species in the state. Those previous surveys may have missed two owl species that occupy different habitats and have different behaviors than most other owls: the boreal owl and the great gray owl. Survey efforts in the past 2 years have focused on the great gray owl.

In fall 2018, FWP staff and a post-doctoral researcher hired by FWP through the University of Montana developed a Habitat Suitability Model and survey protocols for great gray owls. Over the next two years, biologists and volunteers throughout western Montana conducted two types of surveys for great gray owls:



TYPE 1: CALL-BACK SURVEY FOR GREAT GRAY OWLS



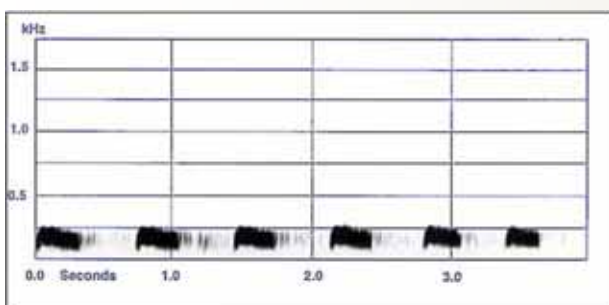
A volunteer travels across a frozen floodplain in the Big Hole Valley on the way back from conducting a callback survey. Photo by Torrey Ritter.

Disadvantage of the call-back survey: The biologist has to be out all night, calling and listening for great gray owls.

Advantage of the call-back survey: The biologist has to be out all night, calling and listening for great gray owls.

TYPE 2: AUTONOMOUS RECORDING UNITS

Autonomous Recording Units (ARUs): Survey participants attach ARUs to a tree in a potential great gray owl territory that records nonstop for 4-7 days before it is retrieved and the data are downloaded. The sounds files are then processed through sophisticated acoustic detection software that can parse out the distinctively low-frequency hoots of the great gray owl.



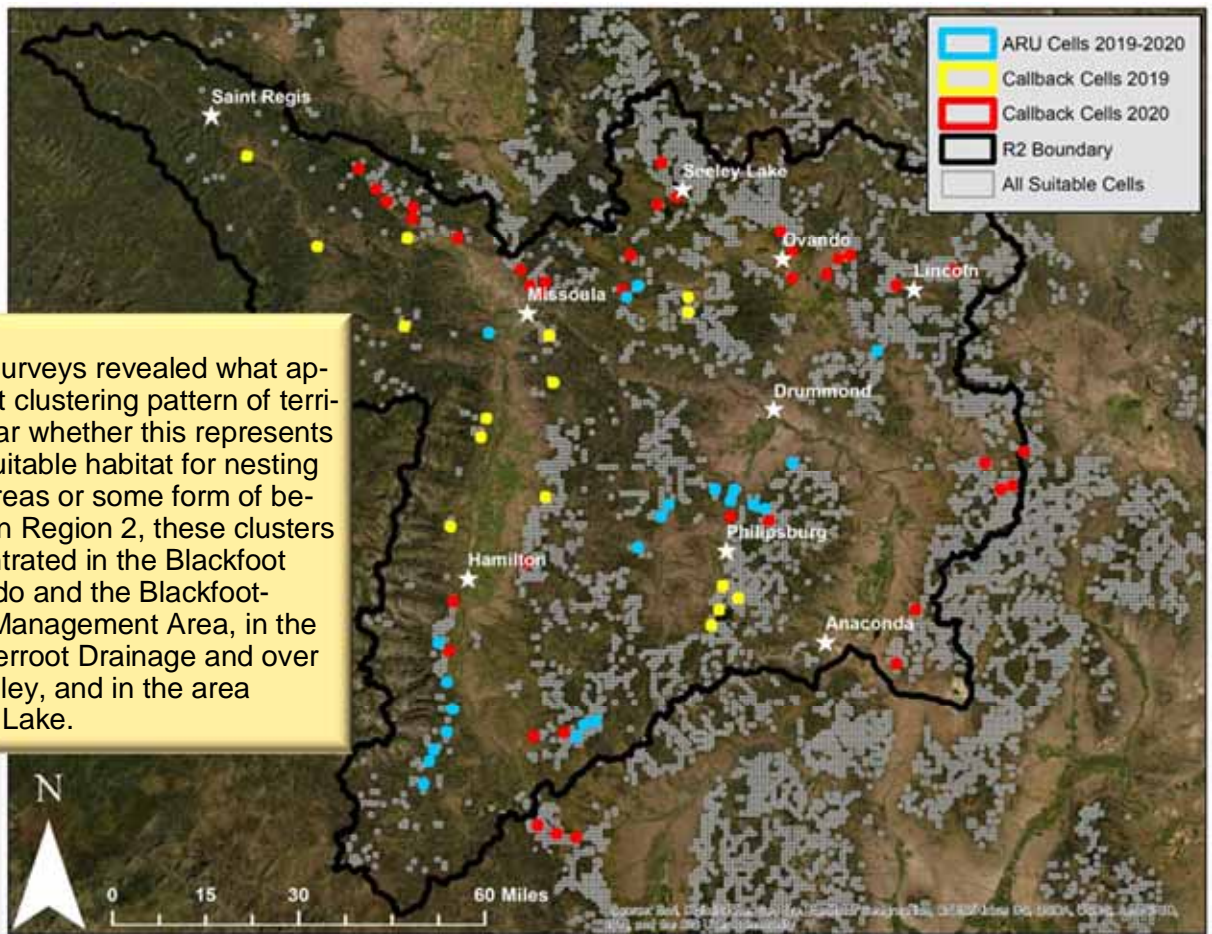
Left: Example spectrogram of a great gray owl hoot provided by the Cornell Lab of Ornithology. The low frequency of great gray owl hoots allows for semi-automated detection of their calls from hours of recordings captured by ARUs.



Nongame wildlife biologist, Torrey Ritter, records the GPS location of an ARU deployment. Kimberly Szcodronski photo.



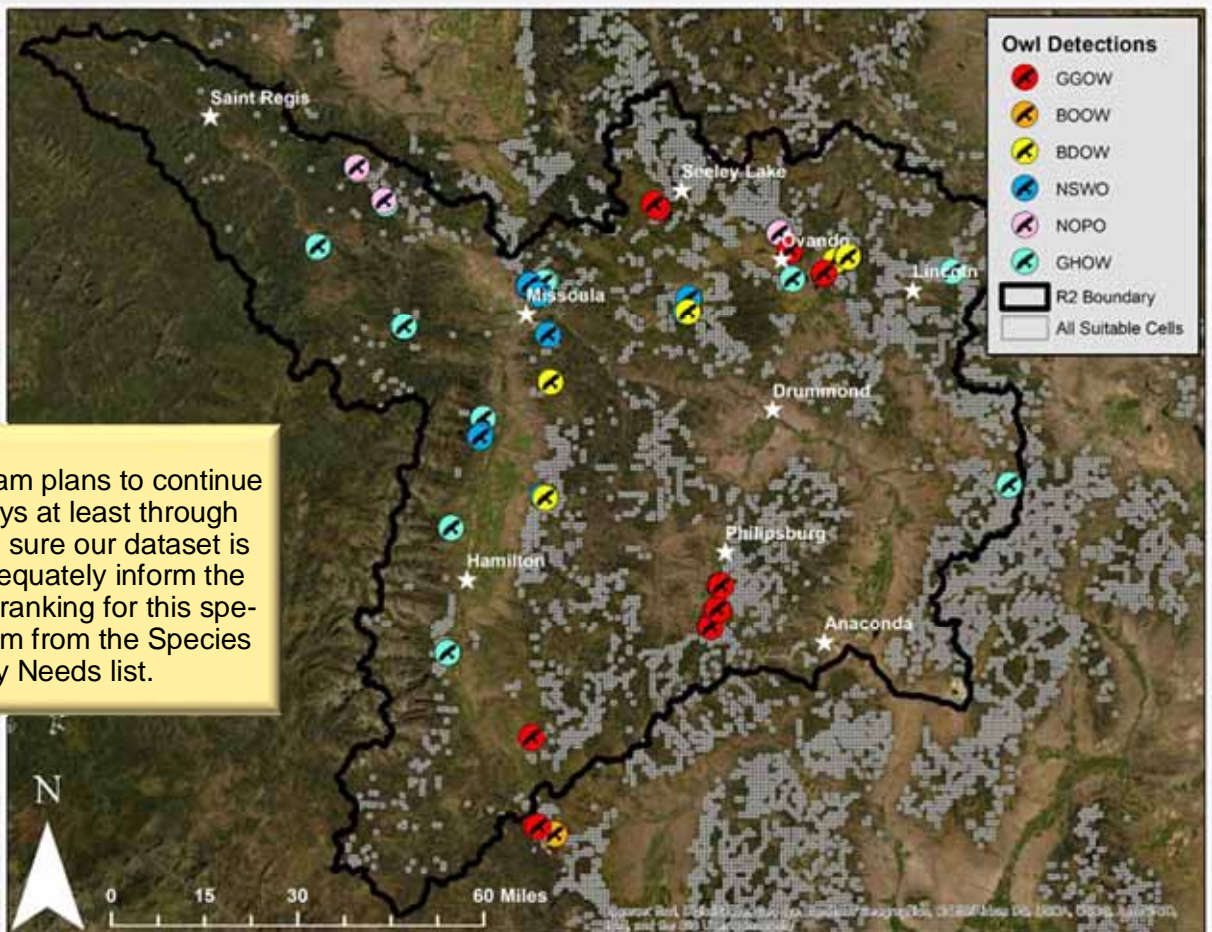
An ARU deployed in a Douglas fir stand in the Flint Creek Valley. Photo by Torrey Ritter.



The great gray owl surveys revealed what appears to be a distinct clustering pattern of territories, but it is unclear whether this represents a concentration of suitable habitat for nesting territories in some areas or some form of behavioral clustering. In Region 2, these clusters appear to be concentrated in the Blackfoot Valley around Ovando and the Blackfoot-Clearwater Wildlife Management Area, in the East Fork of the Bitterroot Drainage and over into the Big Hole Valley, and in the area around Georgetown Lake.

Above: Grid cells in FWP Region 2 surveyed for great gray owls and boreal owls in 2019 and 2020.

Below: Owl detections from call-back and ARU surveys in FWP Region 2 in 2019 and 2020 (GGOW - Great Gray Owl, BOOW - Boreal Owl, BDOW - Barred Owl, NSWOW - Northern Saw-whet Owl, NOPO - Northern Pygmy Owl, GHOW - Great Horned Owl).



The nongame program plans to continue great gray owl surveys at least through spring 2021 to make sure our dataset is robust enough to adequately inform the Species of Concern ranking for this species and remove them from the Species of Greatest Inventory Needs list.

RESOURCE PARTITIONING

Photos by Buffalo Trail Ranch

“Game” and “Nongame” wildlife are distinctions made by humans alone. Interactions are quite natural between wildlife species that fit differing legal categories designed by humans. In the wild, individuals are somewhat dependent upon another species for food, especially in times of weather stress.

Let’s give ourselves credit. In this case, people played a pivotal role in the food chain, too.



Mountain lion at cached elk carcass on January 25, 2021.



Elk carcass recached on January 25, 2021.



Twenty-one Black-Billed Magpies on an elk carcass on January 26, 2021.

RESOURCE PARTITIONING *continued*

Photos by Buffalo Trail Ranch

On January 23rd, I visited the Buffalo Trail Ranch and met with John and Amy. They had discovered a dead cow elk on their property and they were concerned about the cause of death and what to do with the carcass.

I determined, based on a few tell-tale signs (road rash, broken shoulder), that the cow elk had likely been hit on Highway 200 and limped onto the ranch, where it had expired soon after. I identified evidence that the carcass had been visited by carrion birds and likely a mountain lion, so I discussed some options to keep the residents and their pets safe from conflict with predators. In the end, we determined that the carcass be left to decompose naturally, and John decided to put a trail camera near the carcass to identify the creatures feasting on the cow elk.



Mountain lion feeding on elk carcass on January 25, 2021.

What resulted was quite amazing—the trail camera captured a mountain lion visiting the site and caching (the process of burying prey) the elk carcass.

The lion visited several more times and once it had its fill, other scavengers swooped in—literally. Bald and Golden Eagles battled over the prize, while magpies and crows picked up scraps where they could.

All in all this was an awesome example of several species utilizing a cow elk carcass for food during the tough winter months! I look forward to further opportunities to help local landowners prevent and manage conflict with predators and ungulates.

*-Sydney Young, Game Warden
Seeley Lake*



Golden Eagles on an elk carcass on January 26, 2021.



Bald Eagle and Golden Eagle on an elk carcass on January 26, 2021.



RESOURCE PARTITIONING *continued*

Individual crows, magpies, bald eagles, golden eagles and mountain lions—not to mention ravens, wolves, coyotes, bobcats and wolverines—might like to exclude other individuals from a carcass. However, destructive table manners might backfire for the glutton by elevating the energetic cost of eating beyond the benefit gained by even the largest consumers. Everyone loses.

So, like any large family, rules of conduct have evolved to allow multiple species and individuals to get what they need from a food source. One method is termed “resource partitioning,” which means “taking turns.”

Environmental stress ratchets up markedly sometimes, like when the Clark Fork River froze-over in mid-February. In the space of a day or two, eagles making their living on the river lost access to food living on, under and along the water surface. Which enhanced our awareness of wide, wild swings in the importance of carrion from one day to the next.

In times of environmental stress, the courtesies of resource partitioning are frayed and strained. Sometimes this results in more conflict among scavengers on a carcass, but sometimes you see an almost unbelievable amount of tolerance to crowding, born of necessity in harsh environmental circumstances.

Eagles are more likely to get in the way of other eagles than compete directly with other species because eagles share the same feeding times and strategies. Conversely, the mountain lion is most active at night, when birds are on their roosts, though we’ve certainly seen instances where lions slept on or beside a kill in a remote location during the day, dissuading all comers, day and night.

Competitors for scavenged meat have been shown to help each other. Birds and coyotes may respond to visible gatherings of other birds on a carcass to locate carrion. In some cases, it has appeared to researchers that birds follow the predator rather than the prey because there is a greater chance of a predator making a kill than of any given prey animal or group being



Bald Eagles overlooking the Clark Fork River on February 14, 2021. Photo by Mike Thompson and Sharon Rose.

killed. In fact, carcasses of deer or elk that die from causes other than predation may not be discovered by scavengers because they were following the predators instead of the prey.

In other situations, roadkill is a more important food source and more reliable than predation, and scavengers adapt accordingly. As Game Warden Sydney Young advised, removing the roadkill from the roadside makes it more available for scavengers to visit and reduces the odds of being struck during the meal.



Coyote in Snow at Potomac, February 15