Montana Fish, Wildlife & Parks

Region 2 Wildlife Quarterly

February 2021

White-tailed deer, south of Ovando, on Thanksgiving Day, 2020

Technical Bulletin No. 29

Montana Fish, Wildlife & Parks
Region 2 Wildlife Quarterly

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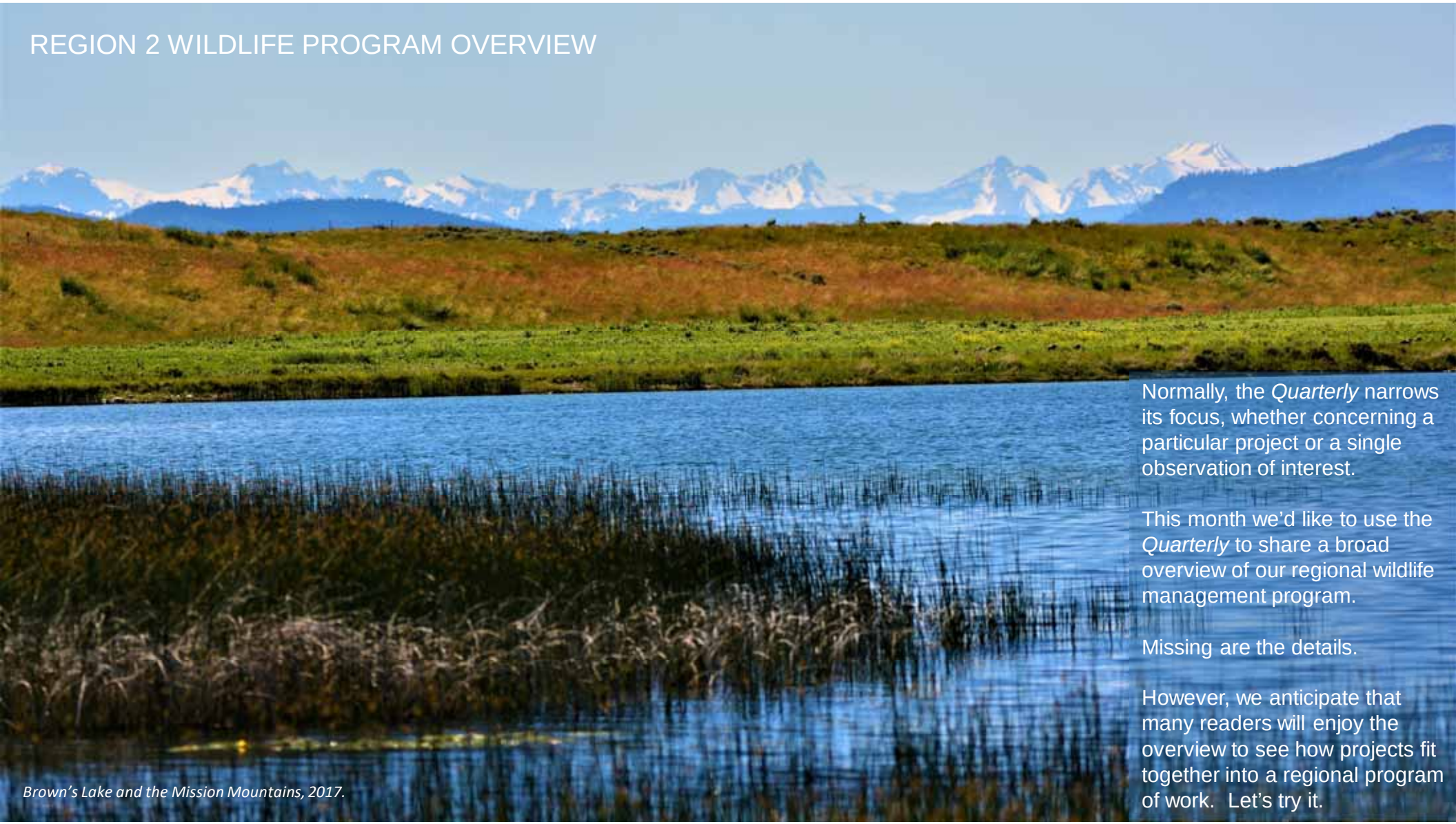
Photographs are by Mike Thompson and Sharon Rose unless otherwise credited.

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.

White-tailed deer south of Ovando, November 26, 2020

REGION 2 WILDLIFE PROGRAM OVERVIEW



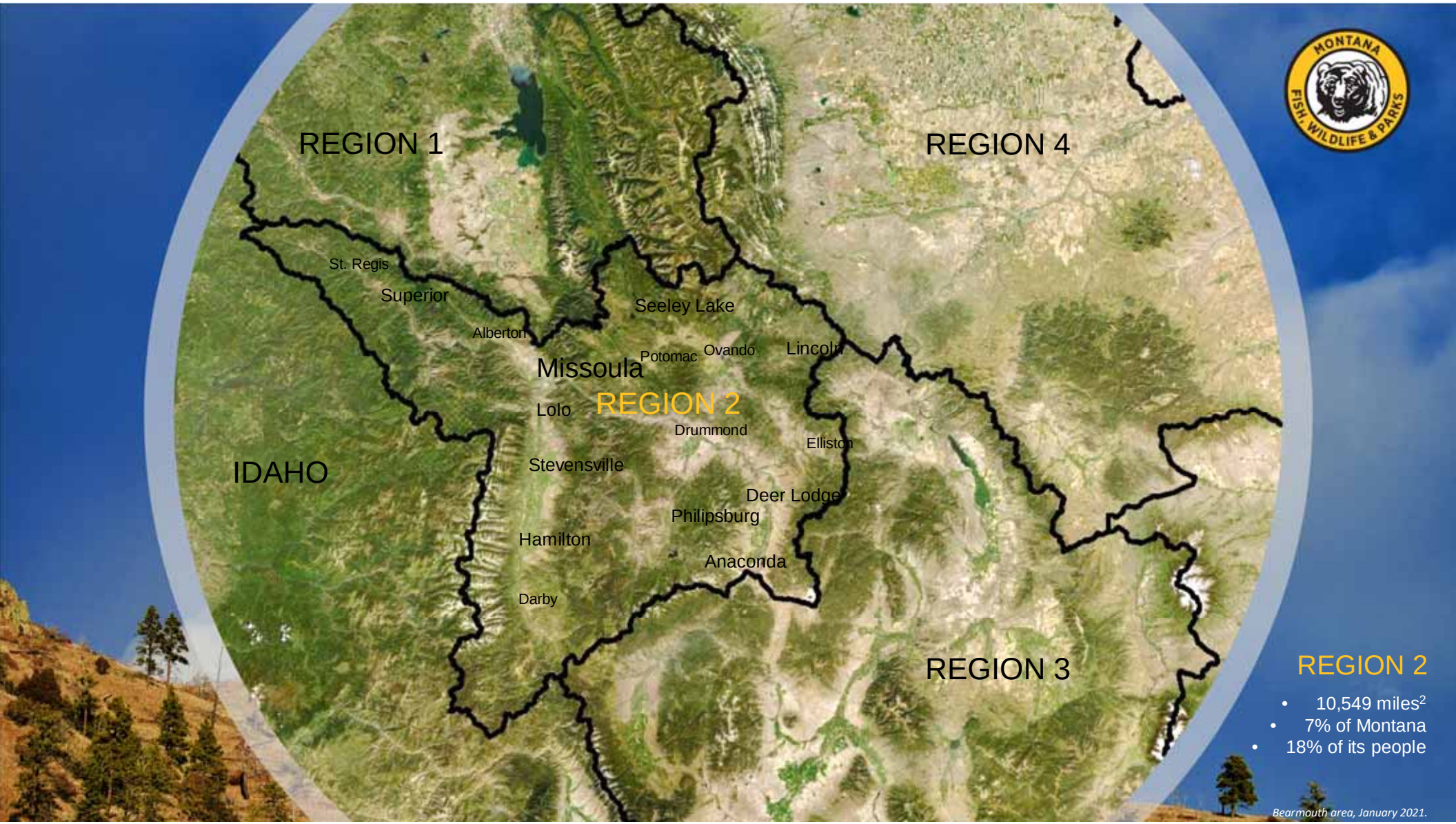
Brown's Lake and the Mission Mountains, 2017.

Normally, the *Quarterly* narrows its focus, whether concerning a particular project or a single observation of interest.

This month we'd like to use the *Quarterly* to share a broad overview of our regional wildlife management program.

Missing are the details.

However, we anticipate that many readers will enjoy the overview to see how projects fit together into a regional program of work. Let's try it.


REGION 1
REGION 4
REGION 2
REGION 3
IDAHO
St. Regis
Superior
Alberton
Seeley Lake
Missoula
Potomac
Ovando
Lincoln
Lolo
Drummond
Elliston
Stevensville
Deer Lodge
Philipsburg
Hamilton
Anaconda
Darby
REGION 2
• 10,549 miles²
• 7% of Montana
• 18% of its people
Bearmouth area, January 2021.

REGION 2 WILDLIFE STAFF

Allow us to put faces to the names of staff residing and working in Region 2, whether supervised from this regional office or from the Helena headquarters.

Downy Woodpecker on Blue Mountain near Missoula, November, 2020.

STATEWIDE WILDLIFE RESEARCH PROGRAM

Nick leads statewide moose research with intensive study areas located in the Cabinet-Salish Mountains, Big Hole Valley and Rocky Mountain Front.

Nick DeCesare, PhD
Research Wildlife Biologist
Region 2 Headquarters, Missoula

STATEWIDE WILDLIFE RESEARCH PROGRAM

Ben works for Dr. Kelly Proffitt on elk projects located in the North Sapphire Mountains and the Blackfoot-Clearwater area.

Ben Jimenez
Research Wildlife Technician
Region 2 Headquarters, Missoula

Rich is responsible for writing FWP's statewide grizzly bear management plan.

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

Rich Harris, PhD
Grizzly Bear Planning Coordinator
Region 2 Headquarters, Missoula

STATEWIDE AIRCRAFT UNIT

Trever is an extraordinarily experienced and capable mountain pilot who does wildlife surveys where needed across much of Montana, including Region 2.

Trever Throop, Aircraft Pilot, Stevensville

Molly coordinates field efforts to estimate mountain lion populations across Montana.

Molly Parks

Mountain Lion Monitoring Technician

Region 2 Headquarters, Missoula

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

Kendra builds relationships with the landowners and hunters of Western Montana to open hunting access.

Kendra McKlosky
Regions 1 & 2 Hunting Access Coordinator
Region 2 Headquarters, Missoula

REGION 2 HUNTING ACCESS PROGRAM

REGION 2 HUNTING ACCESS PROGRAM

Tyler works for Kendra, is expert with GIS, mapping, and reporting for the Access Program, and answers thousands of calls from hunters each year, among other tasks.

Tyler Rennfield
Region 2 Hunting Access Resource Specialist
Region 2 Headquarters, Missoula

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Brady is responsible for the maintenance of FWP Wildlife Management Areas (WMAs) in Region 2 and part of Region 3.

Brady Shortman

Region 2 WMAs Maintenance Supervisor

Warm Springs WMA Headquarters

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Bob works for Brady and is the maintenance foreman on the Wildlife Management Areas in the western part of Region 2.

Bob White

Region 2 Wildlife Management Areas Maintenance Foreman

Region 2 Headquarters, Missoula

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Adam works for Brady and is the maintenance foreman on the Wildlife Management Areas in the eastern part of Region 2, while also coordinating and reporting on weed management practices on FWP lands across Montana.

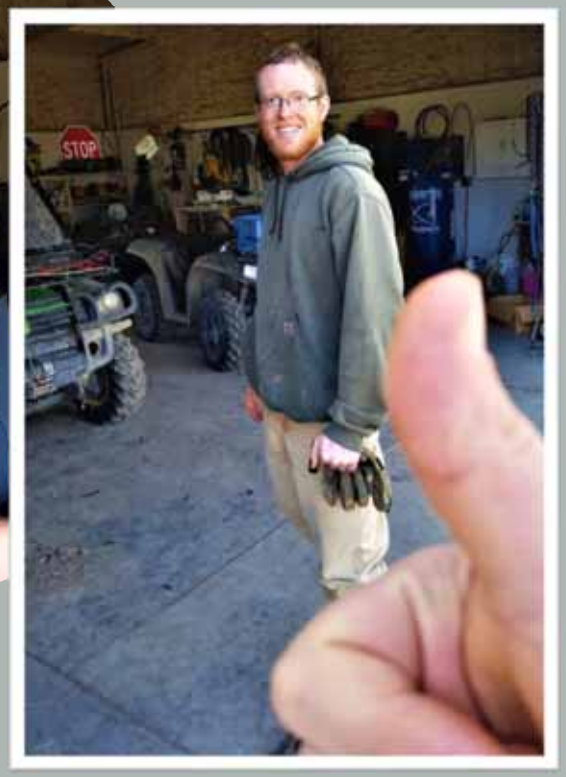
Adam Sieges

Wildlife Management Areas Maintenance Foreman &
Statewide Weed Management Coordinator

Warm Springs WMA Headquarters

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Shawn works for Adam on the Wildlife Management Areas in the eastern part of Region 2 and part of Region 3.



Shawn Smith
Region 2 Wildlife Management Areas Maintenance
Warm Springs WMA Headquarters

WILDLIFE MANAGEMENT AREAS MAINTENANCE

REGION 2 HUNTING ACCESS PROGRAM

In the summer, Matt works for Bob on the Wildlife Management Areas in the western part of Region 2, and in the fall, Matt works for Kendra patrolling Block Management Areas.

Matt Bertellotti
Wildlife Management Areas Maintenance
Region 2 Hunting Access Technician
Region 2 Headquarters, Missoula

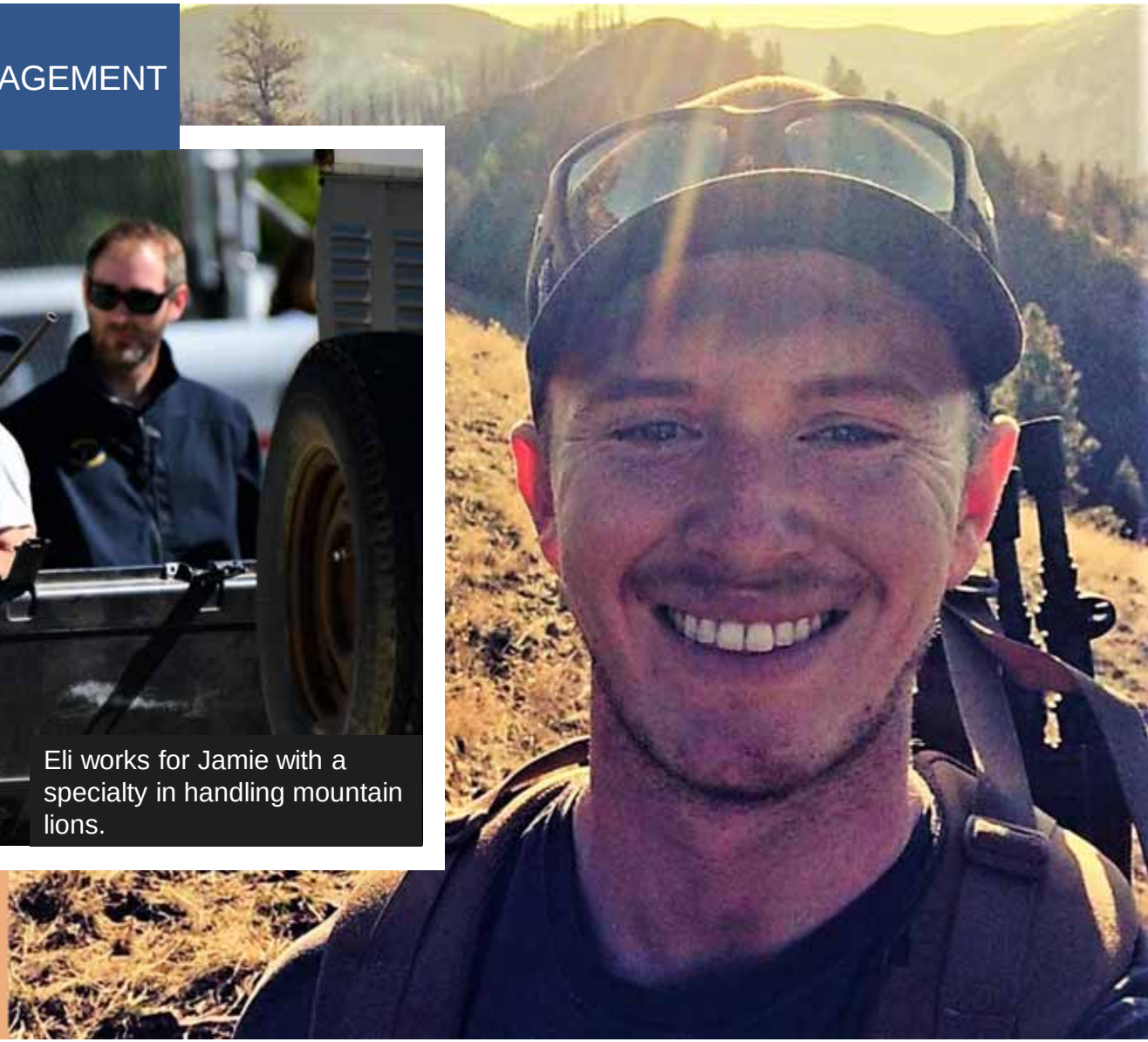
REGION 2 BEAR AND LION MANAGEMENT

Jamie makes room for grizzly bears, black bears and mountain lions in Region 2 by preventing and responding to wildlife conflicts with people, and by earning tolerance for bears by landowners and the public.

James “Jamie” Jonkel
Region 2 Bear Manager
Region 2 Headquarters, Missoula

REGION 2 BEAR AND LION MANAGEMENT

Eli works for Jamie with a specialty in handling mountain lions.



Eli Hampson
Region 2 Bear & Lion Technician
Region 2 Headquarters, Missoula

REGION 2 BEAR AND LION MANAGEMENT

Rory's position was recently created to help Jamie Jonkel in eastern Region 2 and Kevin Frey in western Region 3 by expanding public outreach about grizzly bears and FWP's response to bear issues in underserved areas.

Photo by Meagan Thompson for the *Montana Standard*.

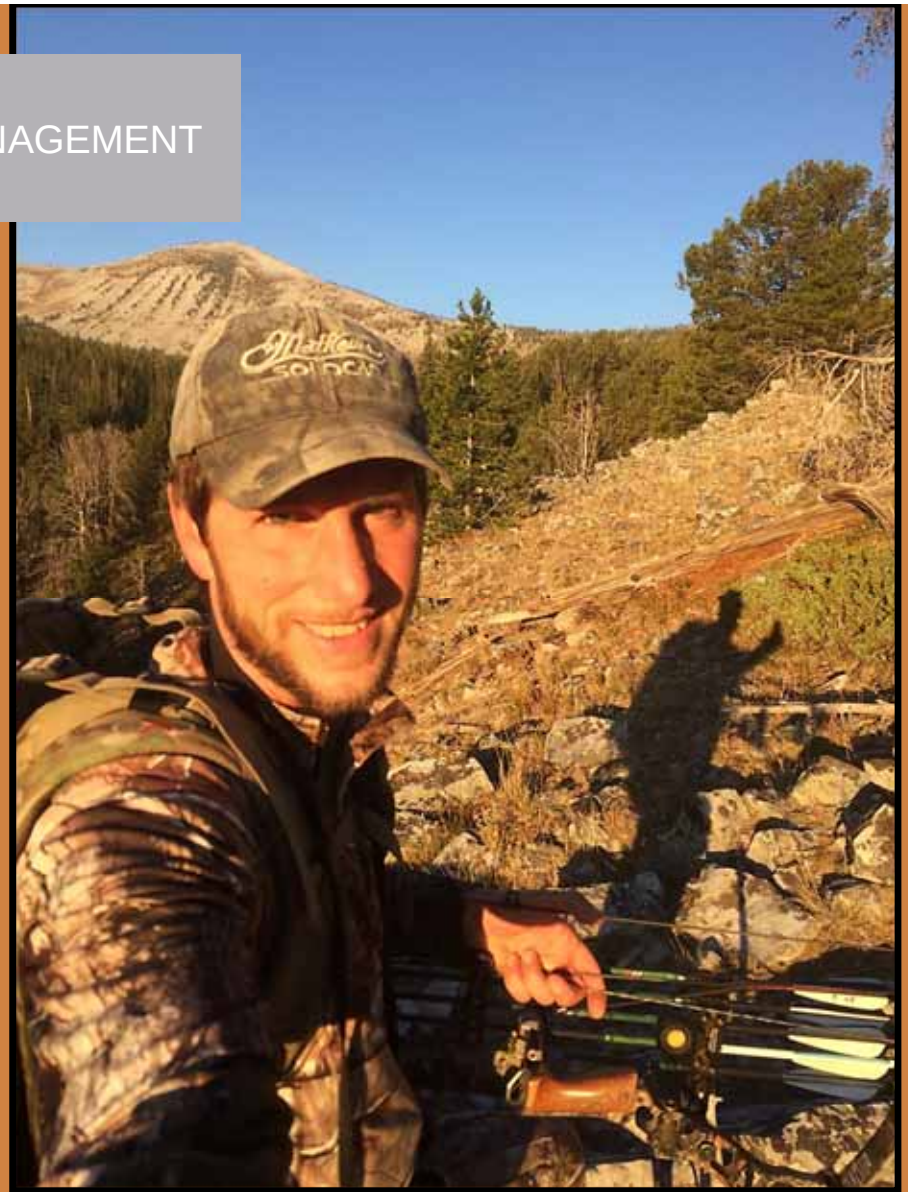
Rory Trimbo

Grizzly Bear Technician

Regions 2 & 3, Anaconda

REGION 2 WOLF MANAGEMENT

Tyler captures and collars wolves in Region 2 as part of a program to improve wolf population monitoring and prevention of wolf/livestock conflicts, while assisting wolf removals by the federal Wildlife Services when wolves kill livestock.



Tyler Parks
Region 2 Wolf Specialist
Region 2 Headquarters, Missoula

REGION 2 WOLF MANAGEMENT

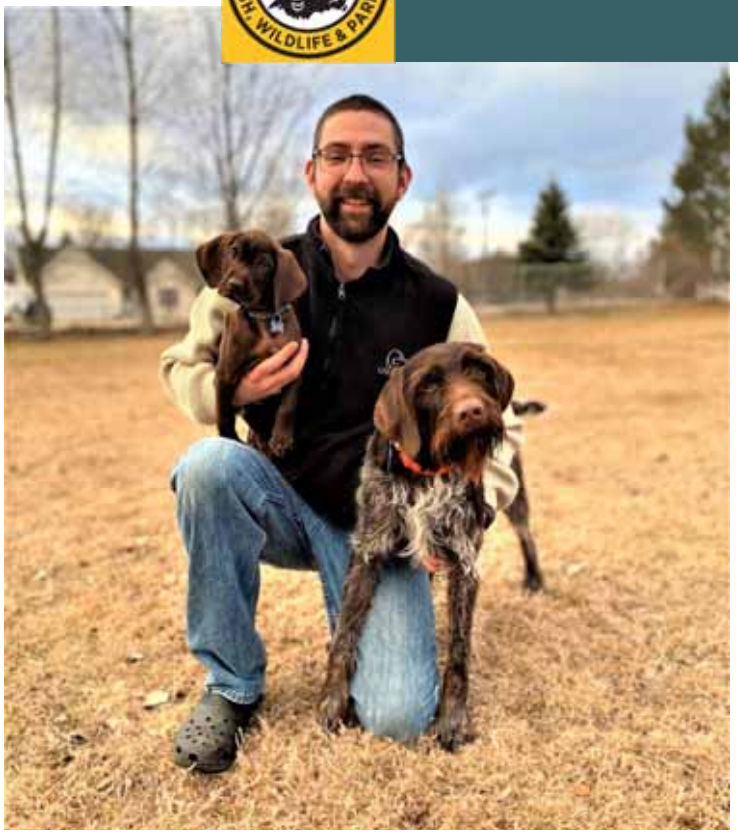
Brandon works for Tyler and helps capture and collar wolves in Region 2.

Brandon Davis

Region 2 Wolf Technician

Region 2 Headquarters, Missoula

REGION 2 UPLAND GAME BIRD HABITAT ENHANCEMENT



Dave Nikonow

Wildlife Biologist, National Wild Turkey Federation/FWP

U. S. Forest Service, Fort Missoula

Dave works with Region 1 of the U.S. Forest Service on public lands in FWP Region 2, advising on enhancing upland bird habitat. He is employed by the National Wild Turkey Federation and is funded by FWP's Upland Game Bird Habitat Enhancement Program

REGION 2 WILDLIFE MANAGEMENT

Julie is responsible for delivering FWP's diverse wildlife program to the landscapes and people of the Upper Clark Fork watershed, and for obtaining feedback and addressing issues arising in her area.

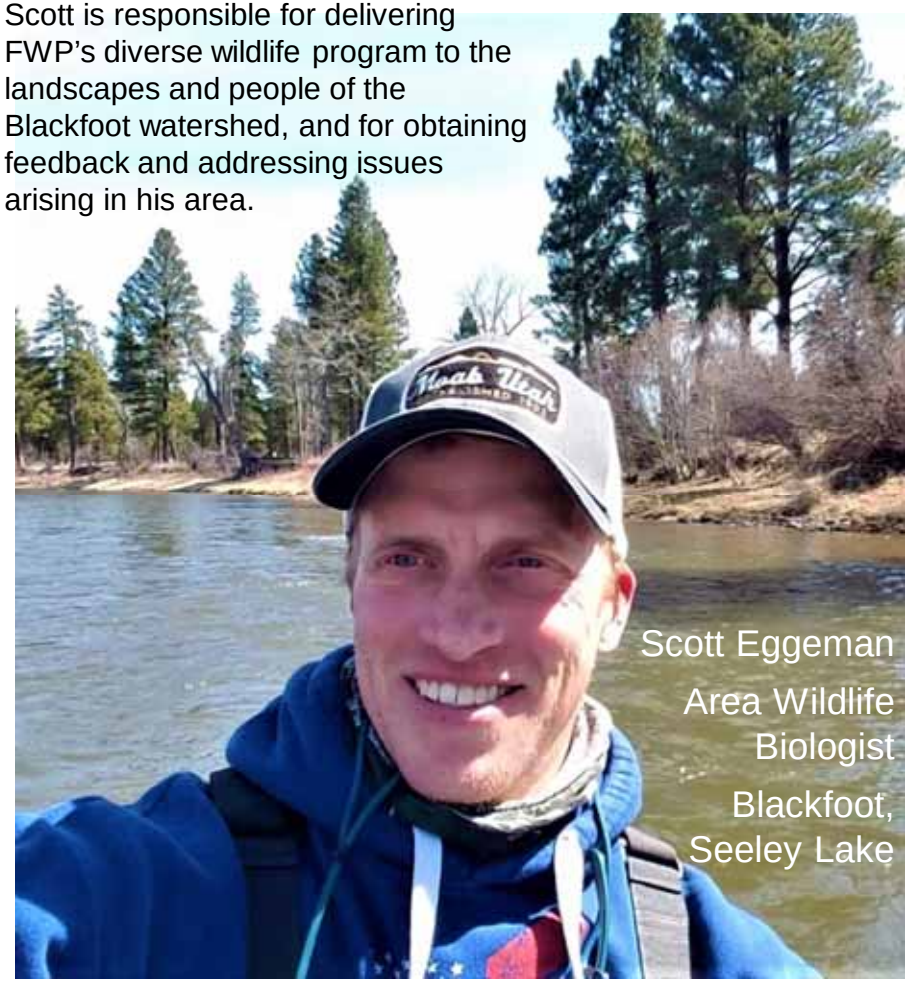
Julie Golla

Area Wildlife Biologist

Upper Clark Fork, Anaconda

REGION 2 WILDLIFE MANAGEMENT

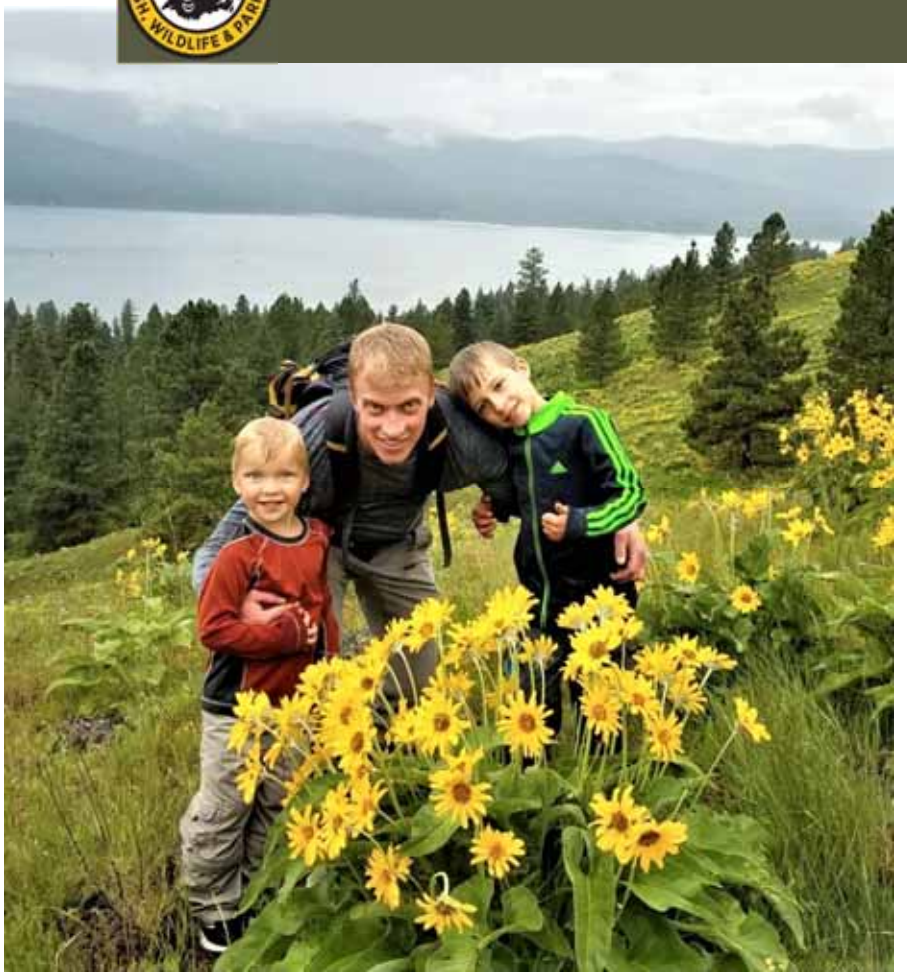
Scott is responsible for delivering FWP's diverse wildlife program to the landscapes and people of the Blackfoot watershed, and for obtaining feedback and addressing issues arising in his area.



Scott Eggeman

Area Wildlife Biologist

Blackfoot, Seeley Lake



REGION 2 WILDLIFE MANAGEMENT

Rebecca is responsible for delivering FWP's diverse wildlife program to the landscapes and people of the Bitterroot watershed, and for obtaining feedback and addressing issues arising in her area.

Aerial elk survey by Rebecca Mowry, 2016.

Rebecca Mowry
Area Wildlife Biologist
Bitterroot, Hamilton

REGION 2 WILDLIFE MANAGEMENT

Liz is responsible for delivering FWP's diverse wildlife program to the landscapes and people of the Middle Clark Fork watershed and Missoula Valley, and for obtaining feedback and addressing issues arising in her area.

Liz Bradley

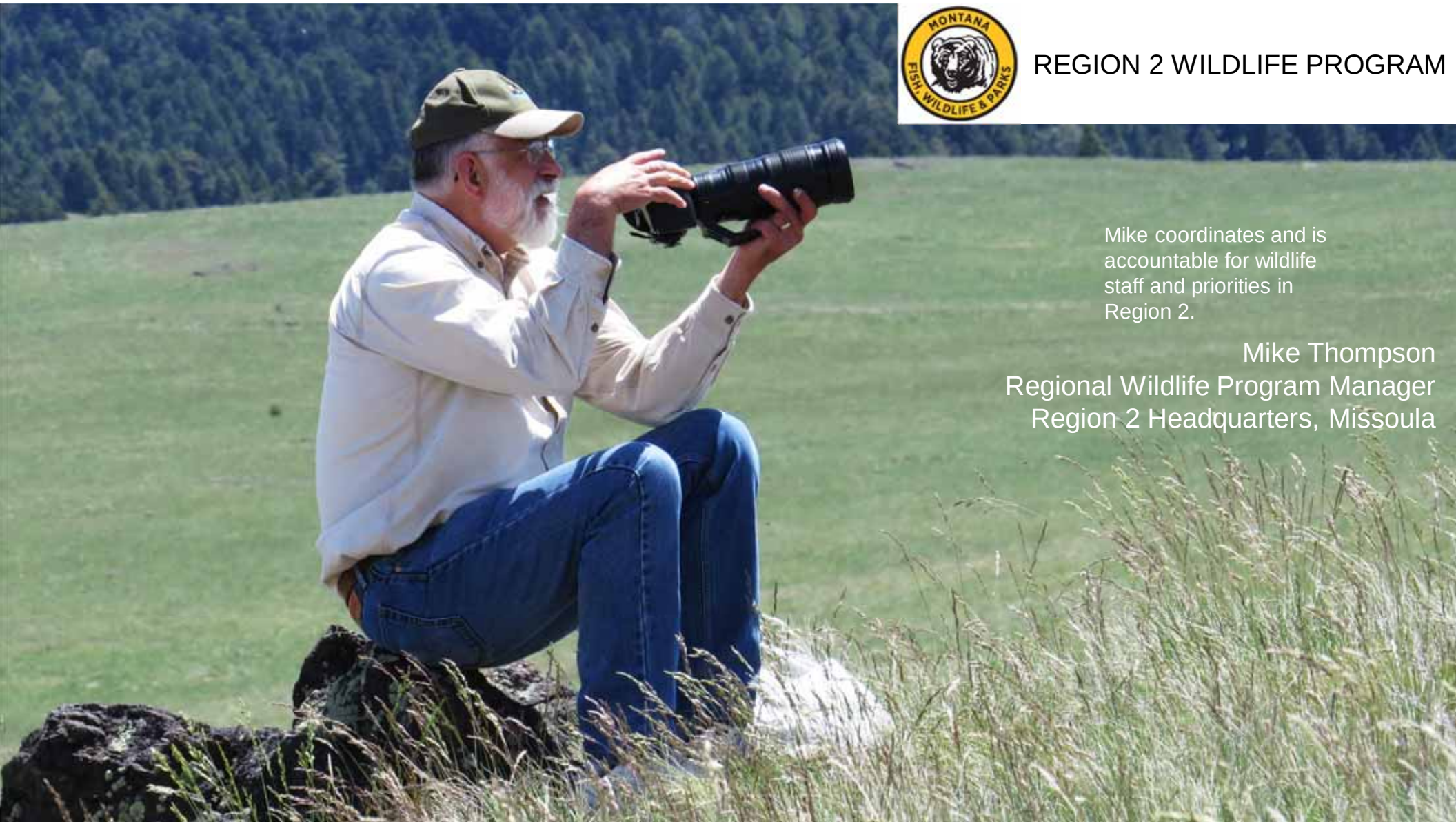
Area Wildlife Biologist

Lower Clark Fork, Missoula

REGION 2 WILDLIFE MANAGEMENT

Torrey is responsible for supporting FWP's wildlife habitat program and delivering the nongame program in Region 2.

Torrey Ritter, Nongame & Habitat Wildlife Biologist, Region 2, Missoula



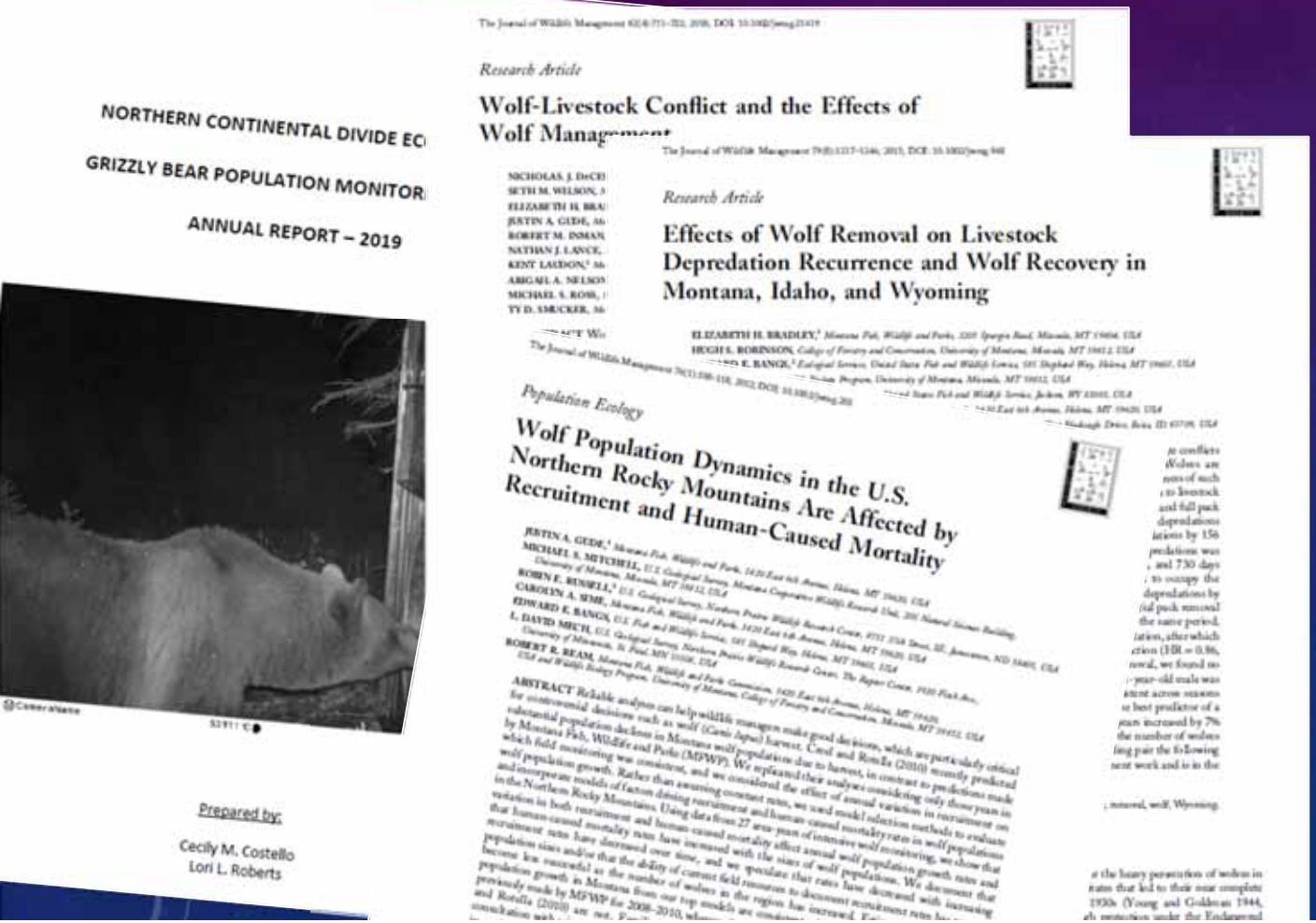
REGION 2 WILDLIFE PROGRAM

Mike coordinates and is accountable for wildlife staff and priorities in Region 2.

Mike Thompson
Regional Wildlife Program Manager
Region 2 Headquarters, Missoula

STATEWIDE WILDLIFE RESEARCH PROGRAM

Wildlife management in Region 2 benefits when statewide research projects are conducted here. Research beyond the level of routine surveys gives us lasting insights that we wouldn't have without the added effort and resources that statewide research makes available. And the public appreciates the chance to interact with experts and share in the learning of new things about local and familiar wildlife populations.



STATEWIDE RESEARCH OVERVIEW

- 4 research biologists and 5 full-time technicians working statewide.
- As of 2019, the research bureau administers >70 ongoing projects that involve FWP funding, data, or staff.
- Many other FWP staff are involved in these projects as well as university collaborators.
- In fiscal year 2019, research staff authored or co-authored 20 manuscripts submitted to peer-reviewed journals.
- In fiscal year 2019, research staff submitted about 15 annual or final reports on research projects, which are vital for maintaining grant funding.

STATEWIDE WILDLIFE RESEARCH PROGRAM
RECENT RESEARCH PRODUCTS IN REGION 2

Bitterroot Mule Deer: HDs 204, 270

Figure 3. Fecal sample collection locations from captured mule deer and pellet sites from December 2015 – September 2016.

FWP Region 2 biologist, Rebecca Mowry, helps process a captured mule deer.

A radioed ewe in Petty Creek, wearing two collars. The GPS collars were programmed to fall off the animals to enable the retrieval of movement data "stored on board," while the VHF collars remain on the animals to allow an inspection of future mortality sites.

Bighorn Sheep: HDs 203, 213
Petty Creek and Anaconda

Petty Creek (MT-203) and Anaconda (MT-213) sheep each carry a unique combination of respiratory pathogen communities (below). Anaconda sheep declined as part of the widespread die-off across Region 2 in 2009-2010, while Petty Creek sheep have not been subject to a die-off event.

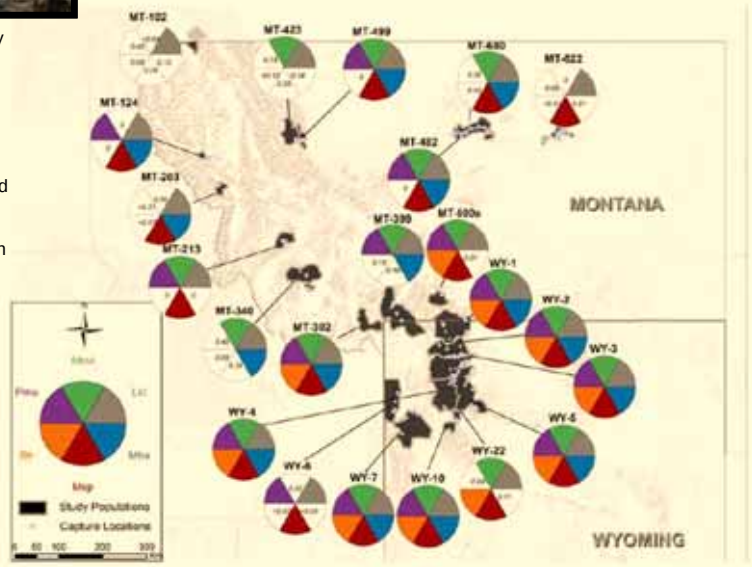


Figure 6. *Map of 22 bighorn sheep study populations and detected respiratory pathogen communities.*

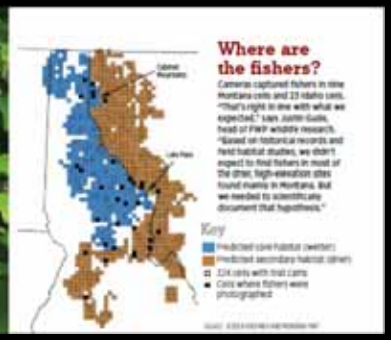
Bitterroot Elk

HDs 204, 250, 270

Bitterroot Elk & Lions

HDs 250, 270

STATEWIDE WILDLIFE RESEARCH PROGRAM



Alex Mattson, Game Warden

In the winter of 2018-19, UM graduate student Jessica Krohner assembled FWP staff and volunteers to test a methodology for detecting fishers in western Montana.

Alex Mattson, Liz Bradley, Tyler Parks testing the camera at Plot 325.

Jessica Krohner, Rebecca Mowry, Trever Throop

Rebecca Mowry coordinated the effort in Region 2.

They deployed 170 bait and camera sets in Montana to collect hair (DNA) and photos of animals visiting.

Chris Hamilton, Game Warden

Derek Schott, Game Warden

Jessica (Krohner 2020) reported an estimated 6.1% fisher occupancy of sampling cells in Montana.

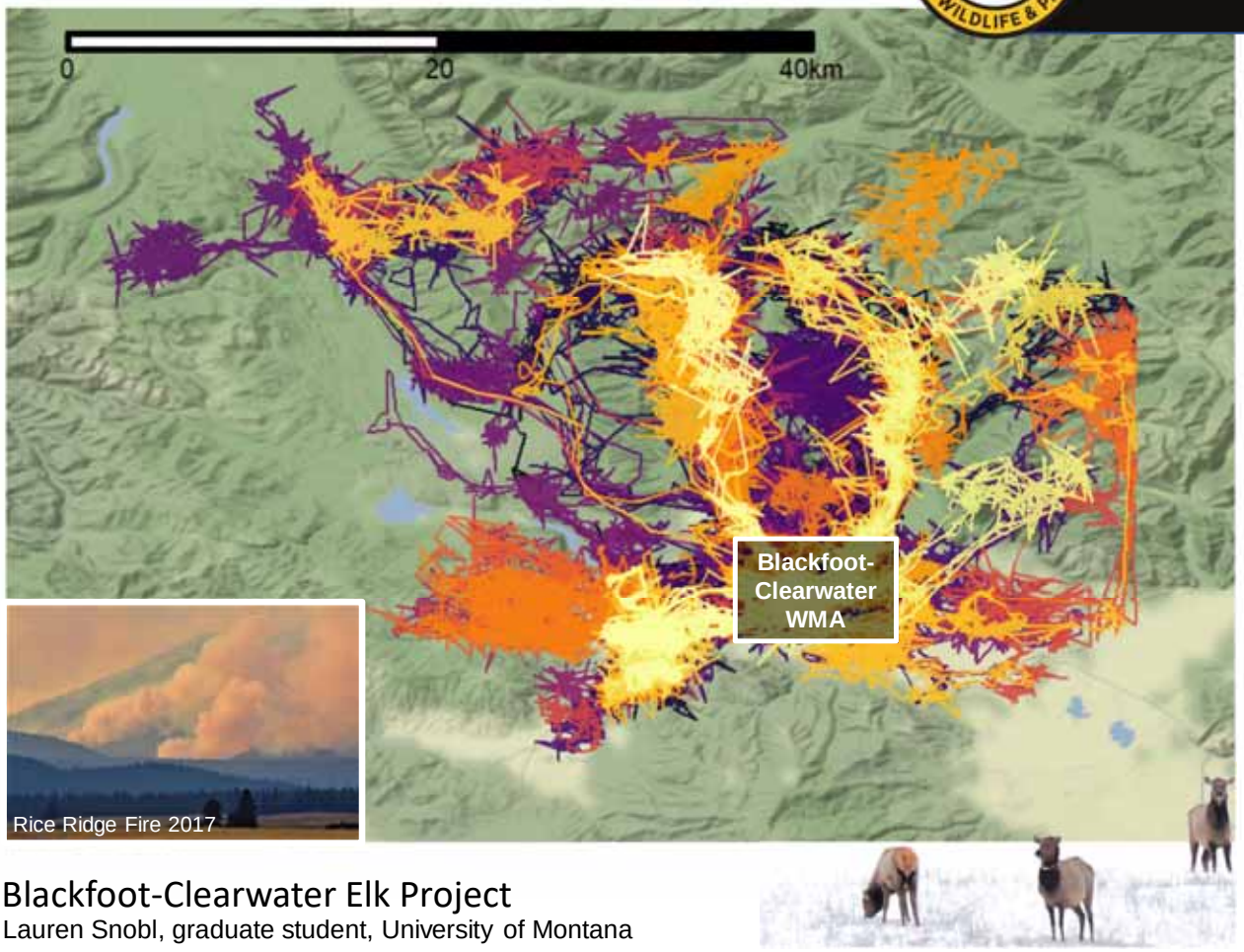
FWP plans to replicate the fisher survey periodically, on a 3 or 4-year rotation.

Krohner, Jessica M., "FINDING FISHERS: DETERMINING THE DISTRIBUTION OF A RARE FOREST MESOCARNIVORE IN THE NORTHERN ROCKY MOUNTAINS" (2020). Graduate Student Theses, Dissertations, & Professional Papers. 11589. https://scholarworks.umt.edu/etd/11589

RECENT RESEARCH PRODUCTS IN REGION 2

STATEWIDE WILDLIFE RESEARCH PROGRAM

ONGOING STATEWIDE WILDLIFE RESEARCH IN REGION 2



Rice Ridge Fire 2017

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In the winters of 2018-19 and 2019-20, on the Blackfoot-Clearwater Wildlife Management Area (WMA), FWP captured 59 adult female elk and fitted them with GPS collars to learn how elk are using the 160,000-acre Rice Ridge burn. The map shows movements of radioed elk, with each color representing an individual animal.

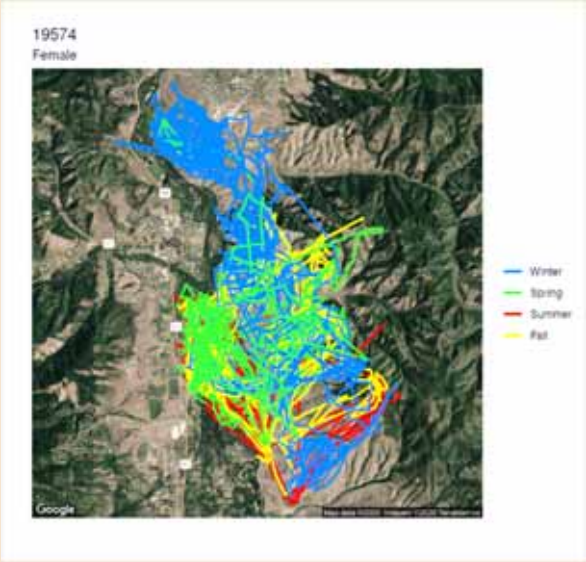
Blackfoot-Clearwater Elk Project

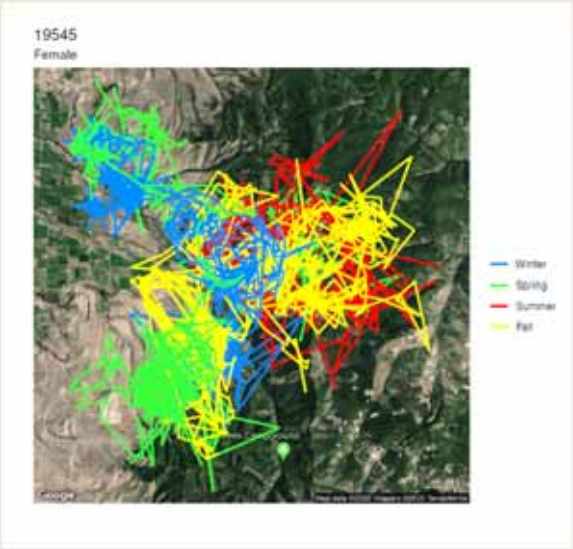
Lauren Snobl, graduate student, University of Montana

STATEWIDE WILDLIFE RESEARCH PROGRAM

ONGOING STATEWIDE WILDLIFE RESEARCH IN REGION 2

A graduate student, Peter Mumford, will lead data analysis, writing, and completion of the final report while developing a research project evaluating the effects of changes in travel management and hunter access on elk distribution in the Sapphire Mountains.





Effects of Changes in Travel Management and Hunter Access on Elk Distributions in the Northern Sapphire Mountains

STATEWIDE WILDLIFE RESEARCH PROGRAM

ONGOING STATEWIDE WILDLIFE RESEARCH IN REGION 2

In April-May 2020, we reached our goal of completing at least 60 Dusky (i.e., Blue) Grouse surveys, with 284 point-count locations in Region 2. This is a joint research project with FWP and Montana State University. There are 3 main goals of the project: 1) to figure out an effective way to survey for Dusky Grouse, 2) to develop a predictive model (map) of dusky grouse habitat, and 3) to look at grouse and their habitat in relation to management practices.

Dusky Grouse Population Survey, Spring 2020

REGION 2 WILDLIFE MANAGEMENT

UPCOMING MANAGEMENT IN REGION 2

Sharp-tailed Grouse Reintroduction, Tentatively Spring 2022

This is a cooperative project involving private landowners in key habitats, and requiring more and continuing conversations with neighbors in the watersheds.

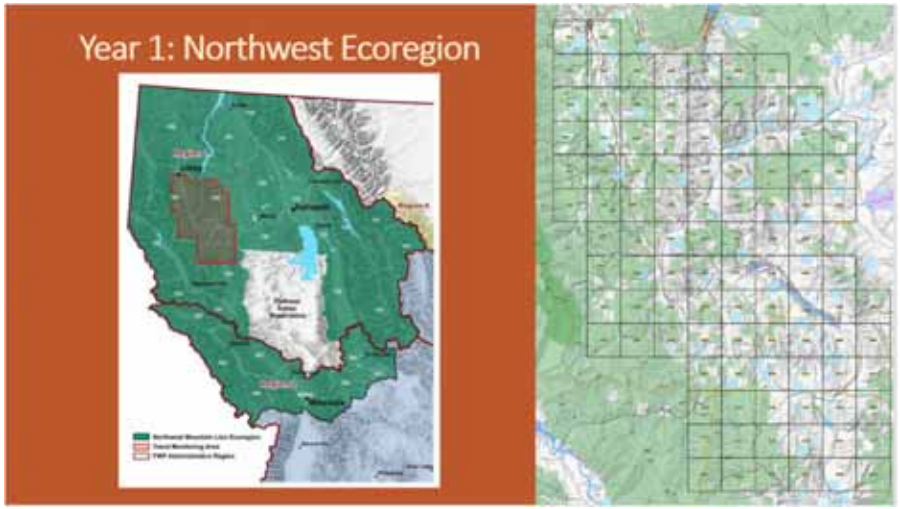
Modeled/Predicted Habitat for Sharp-tailed Grouse in Region 2.

In April 2019, FWP Regions 1 & 2 approached the public, under MEPA, and the Fish and Wildlife Commission subsequently approved a proposal to reintroduce Sharp-tailed Grouse to portions of the Bitterroot, Blackfoot and Drummond areas where native populations were lost over time.

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION
LION POPULATION ESTIMATION

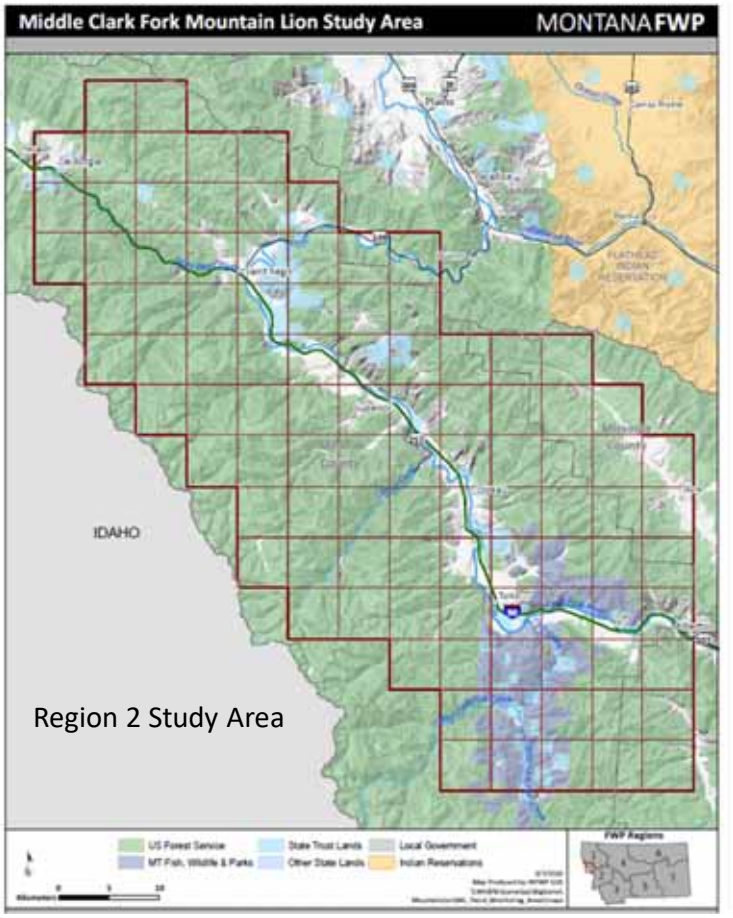
MONTANA MOUNTAIN LION MONITORING AND MANAGEMENT STRATEGY
FEBRUARY 2019

- Field work began in Region 1, Winter 2019-20
- Field work moving to Region 2, primarily in Mineral County, Winter 2020-21



Region 1 Study Area

REGION 2 WILDLIFE MANAGEMENT



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DNA is taken from treed mountain lions in the study areas by firing and recovering a biopsy dart, which collects a small muscle sample without drugging or handling the animal. The DNA identifies the individual and contributes toward estimates of lion densities in the study areas. Molly Parks leads the effort this year in Region 2, employing contracted houndsmen and women.

Photos by Molly Parks

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

LION POPULATION ESTIMATION

REGION 2 WILDLIFE MANAGEMENT

REGION 2 HUNTING ACCESS PROGRAM

2019 REGION 1 & 2 HUNTING ACCESS PROGRAM STATISTICS

OVER 4,200 HUNTER CONTACTS (CALLS & FIELD CONTACTS)

OVER 400 LANDOWNER CONTACTS

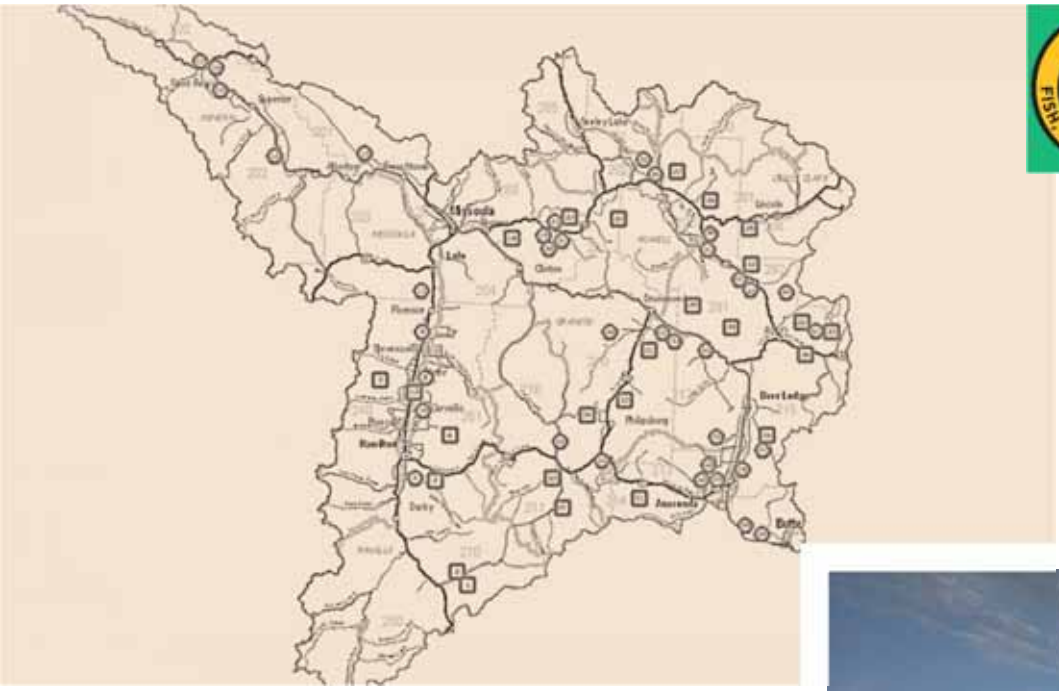
176 HUNTING ACCESS AGREEMENTS IMPLEMENTED (REGION 1 & REGION 2)

OVER 1.2 MILLION ACRES OF WESTERN MONTANA HUNTING ACCESS OPPORTUNITY OPEN (REGION 1 & REGION 2)

OVER 45,00 HUNTER USE DAYS (REGION 1 & REGION 2)

Photos by Kendra McKlosky

REGION 2 HUNTING ACCESS PROGRAM



- 528,488 acres enrolled in Region 2 Access agreements in 2019
- 73 Block Management Areas (BMAs) in 2020
- 7 additional “Limited Access Areas” in 2020
- Includes SPP Montana
- Includes The Nature Conservancy (TNC)

- Formal complaints in 2019: none
- Landowner complaints in 2019: none
- Number of hunter response cards: 6,423
- % hunters who observed game: 40%
- % hunters who harvested game: 7%
- % hunters rated experience satisfactory: 91%

Kendra McKlosky photo

HUNTING ACCESS IN PERPETUITY[1]

REGION 2 HUNTING ACCESS PROGRAM

Photos by Kendra McKlosky

CLARK FORK RIVER RANCH PUBLIC ACCESS MOU

DRY COTTONWOOD CREEK RANCH CONSERVATION EASEMENT/ACCESS

Public hunting and river recreation access on 2,650 acres is provided by the Natural Resource Damage Program (NRDP) on the Clark Fork River Ranch through a memorandum of understanding (MOU) established in 2019 in partnership with FWP.

Hunting access on 3,414 acres is provided by the Clark Fork Coalition on the Dry Cottonwood Creek Ranch through a conservation easement established in 2019 in partnership with NRDP, Montana Land Reliance and FWP as part of a larger project also involving the Clark Fork River Ranch.

GRAVELEY RANCH BROCK CREEK & WARM SPRINGS CREEK CONSERVATION EASEMENTS/ACCESS

Shane Graveley and Sandy Graveley

Hunting access on 8,200 acres is provided by the Graveley Ranch through two conservation easements established in 2019 in partnership with Five Valleys Land Trust, Natural Resource Damage Program, The Conservation Fund, and FWP as part of a larger conservation project.

BUXBAUM RANCH BOULDER CREEK CONSERVATION EASEMENT/ACCESS

Hunting access on 1,100 acres is provided by the Buxbaum Ranch through the Buxbaum – Boulder Creek Conservation Easement established in 2019 in partnership with Five Valleys Land Trust, Natural Resource Damage Program, and FWP.

[1]The Block Management Program offers annual hunting access agreements between FWP and participating private landowners. Landowners commonly make adjustments to these agreements is to reflect the sale of part of their property, resulting in a loss of acres available for public access. The projects described herein are examples where public hunting access is now guaranteed on these properties in perpetuity, regardless of who owns the property in the future. We can't thank these landowners enough for their gifts to future generations of hunters.

REGION 2 HUNTING ACCESS PROGRAM

The Bearmouth Block Management Area (BMA) is an example of a new BMA in Region 2 in 2020. Located east of Missoula off Exit 130, it involves 3,450 acres recently acquired by the Rocky Mountain Elk Foundation in Hunting District 292. Elk, mule deer and white-tailed deer are potentially available on this BMA during any day in the hunting season.

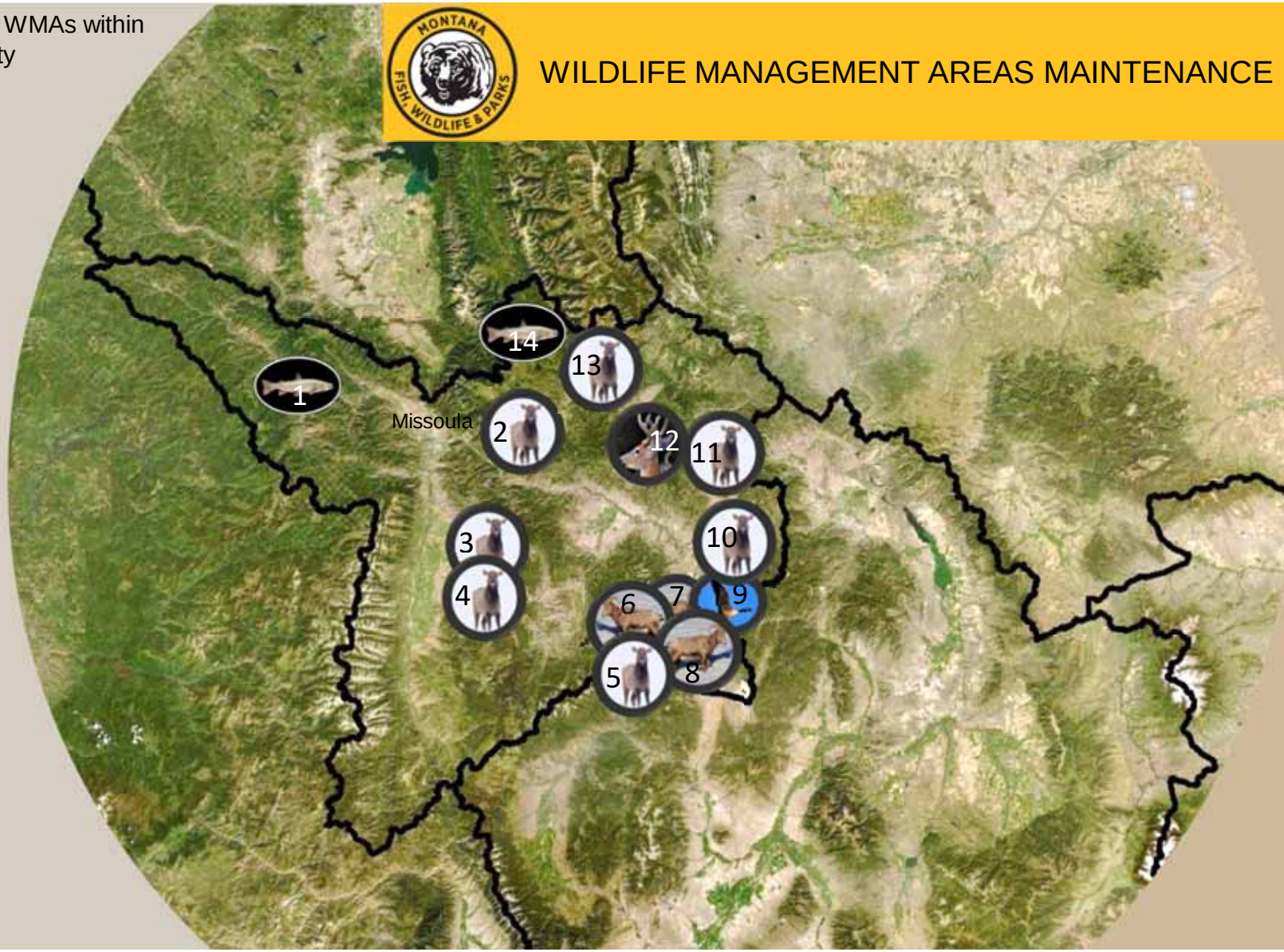
BEARMOUTH
BMA #70

Kendra McKlosky photo

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Region 2 (1-14) & Region 3 (15-18) WMAs within Region 2 Maintenance Responsibility

	WMA Name	Acres
1	Fish Creek	35,317
2	Mt. Jumbo	120
3	Threemile	6,384
4	Calf Creek	2,403
5	Garrity	10,507
6	Blue-eyed Nellie	194
7	Stucky Ridge	296
8	Lost Creek	1,403
9	Warm Springs	1,563
10	Spotted Dog	37,877
11	Nevada Lake	1,500
12	Aunt Molly	1,184
13	Blackfoot-Clearwater	28,202
14	Marshall Creek	24,811
Region 2 WMAs		**151,761**
15	Mount Haggin	58,828
16	Fleecer Mountain	7,385
17	Lake Helena	157
18	Canyon Creek	3,322
R2 + R3 Maintenance		**221,453**



WILDLIFE MANAGEMENT AREAS MAINTENANCE

Banded female Mountain Bluebird on gate at Blackfoot-Clearwater WMA.

Threemile WMA entrance sign.

TARGETS OF WMA MAINTENANCE

- Interpretive signs
- Boundary signs
- Portal signs
- Travel management signs
- Road closure gates and locks
- Road closure barriers
- Parking areas

Blackfoot-Clearwater WMA new portal sign at West Gate..

- Road surfaces and drainage
- Culverts and bridges
- Roads designated for abandonment and storage
- Damage by vehicles driven off roads
- Livestock trespass
- Noxious weed populations
- Biological weed-control insect populations
- Maps and records of weeds and treatments

OVERVIEW

- Water levels in developed wetlands
- Dikes and water control structures
- Nesting islands and nesting structures
- Structural elements of buildings
- Water, septic, utilities, etc.
- Vehicles and equipment
- Personal protective equipment

Blackfoot-Clearwater WMA internal parking area.

- Boundary fences
- Pasture gates
- Exclosures for monitoring grazing by cattle and wildlife
- Oversight of private contractors
- Working relationships with neighbors
- Working relationships with the public
- Coordination with FWP biologists and wardens
- Vandalism

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Canada lynx, Marshall Creek WMA

ENFORCEMENT

FWP Game Wardens set remote cameras to identify people driving off open roads on Region 2 Wildlife Management Areas in 2020 and issued tickets.

A partial wildlife inventory was an incidental benefit.

Flying squirrel, Spotted Dog WMA

Black bear, Marshall Creek WMA

Gray wolf, Marshall Creek WMA

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Roads, Culverts, Cattle Guards

Long-tailed weasel on a maintained road on the Blackfoot-Clearwater WMA, 2020.

Road reroute and improvement as part of forest habitat management on Threemile WMA in 2017.

Access right-of-way across private land to the entrance of Threemile WMA.

WILDLIFE MANAGEMENT AREAS MAINTENANCE
Boundary Fences


Blackfoot-Clearwater


Blackfoot-Clearwater


Spotted Dog


Aunt Molly


Calf Creek

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Livestock Control

Alicia Stickney photo

Above, cows accessed Spotted Dog WMA in 2020 while the construction of new boundary fence was delayed, awaiting the closing of a land exchange with a neighbor. The land exchange is expected to close soon and the fence will be constructed on the new property boundary in 2021.

Controlling livestock is part of being neighbors and WMAs staff expend substantial effort moving cows from where they don't belong.

It seems that on a broad scale and over time, their efforts at preventing cattle trespass are working on Spotted Dog WMA.

The photo at top right shows historic grazing impacts on Trout Creek at the time of WMA purchase (ca 2010). Below, the same reach of the stream in 2019 shows willows recovering from livestock control.

2013

Trout Creek, Spotted Dog WMA

Kelvin Johnson photos

2019

Trout Creek, Spotted Dog WMA

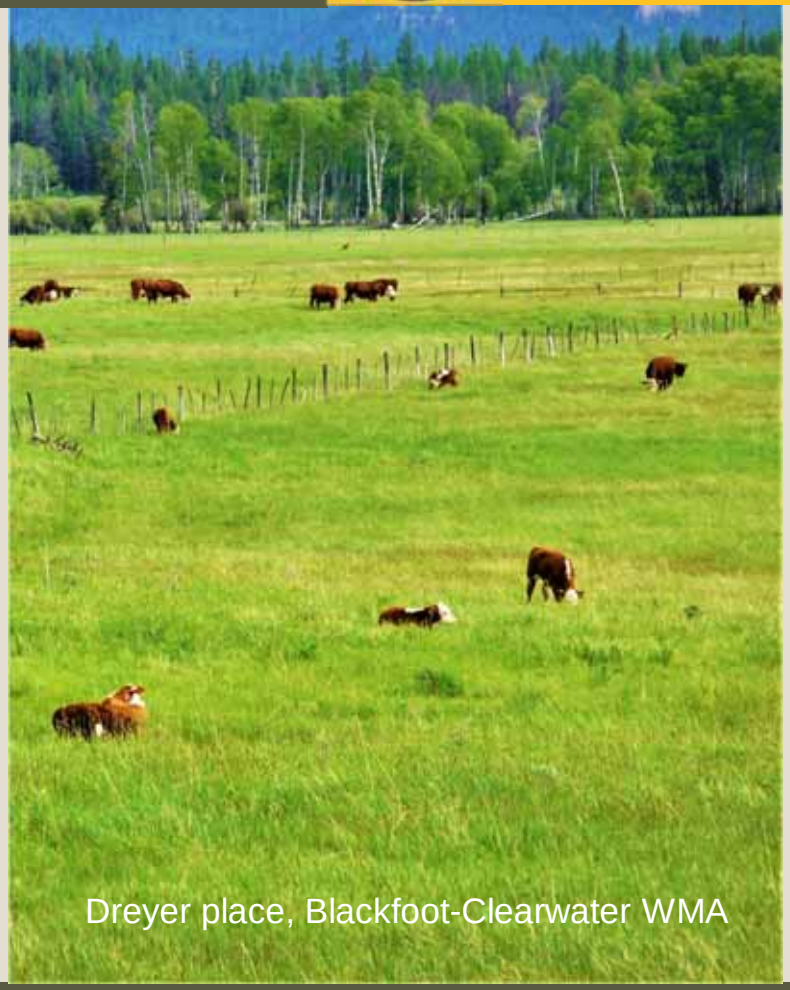
REGION 2 WILDLIFE MANAGEMENT

WILDLIFE MANAGEMENT AREAS MAINTENANCE

CATTLE GRAZING PRESCRIPTIONS ON REGION 2 WMAs

Spotted Dog WMA:	2,800 acres
Blackfoot-Clearwater:	904 acres
Aunt Molly WMA:	424 acres

R2 WMA ACRES GRAZED: 4,128 acres

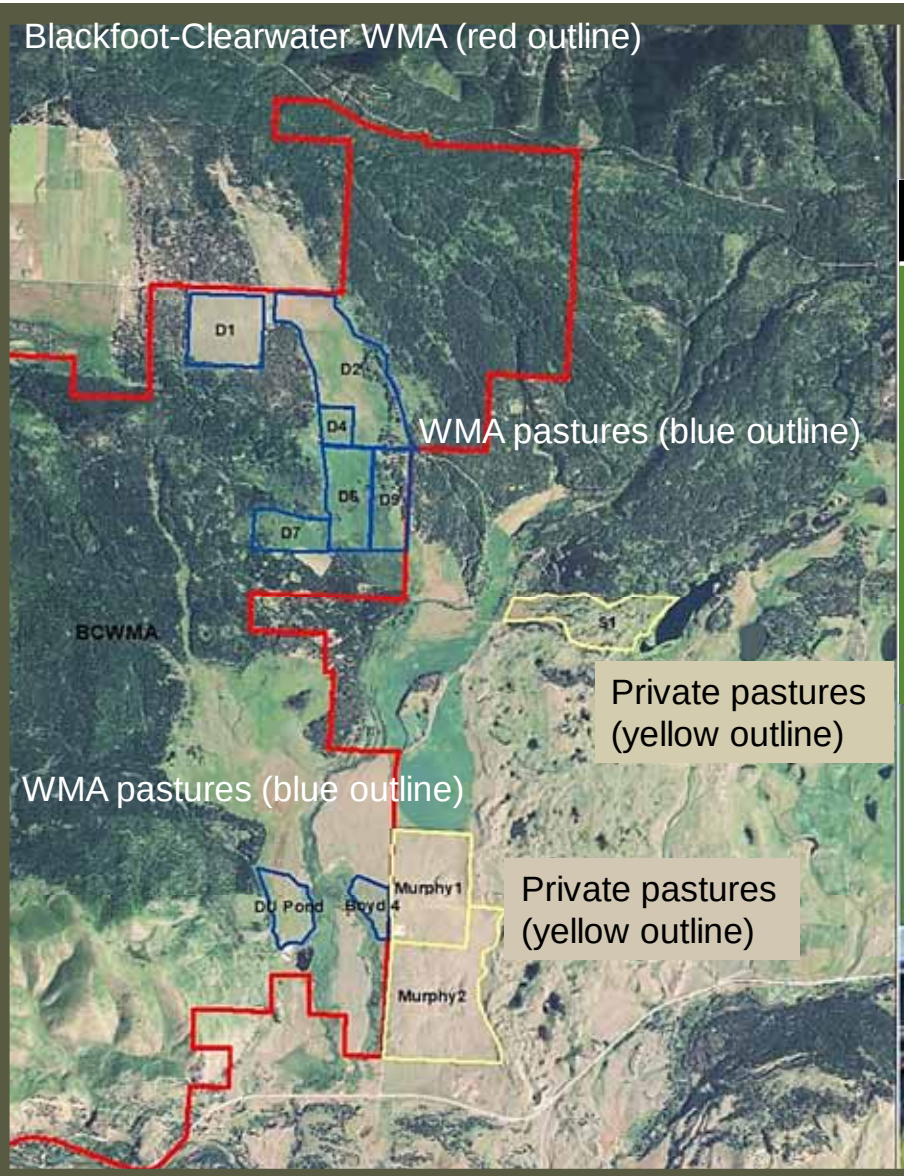


Dreyer place, Blackfoot-Clearwater WMA

CATTLE GRAZING MANAGED ON PRIVATE LAND IN CONCERT WITH R2 WMAs

Spotted Dog Lessee:	2,100 acres
Blackfoot-Clearwater Lessee:	795 acres
Aunt Molly Lessee:	407 acres

PRIVATE ACRES LEASED: 3,302 acres



REGION 2 WILDLIFE MANAGEMENT

Livestock Grazing Schedule for Blackfoot Clearwater WMA & Two Creek Ranch Grazing Lease

	BCWMA North			BCWMA South		Two Creek Native Pastures		
Year	D[1]1	D2	D9	Boyd 4	DU Pond	M1	S9	M2
2019	A[2]	B	B	B	B	B	A	C
2020	C	A	A	C	C	C	B	A
2021	A	B	B	B	B	A	C	B
2022	C	A	A	C	C	B	A	C
2023	A	B	B	B	B	C	B	A
2024	C	A	A	C	C	A	C	B

[1]D = Dreyer Meadows, DU = Ducks Unlimited, M = Murphy, S = Shanley

[2]Time period:
A = Livestock grazing from early-May to early-August (rapid growth);
B = Livestock grazing from early-August to end of September (post seed-ripe);
C = Yearlong rest from livestock grazing.

Spotted Dog WMA grazing tour

REGION 2 WILDLIFE MANAGEMENT

WILDLIFE MANAGEMENT AREAS MAINTENANCE

Photos courtesy of Julie Golla.

SPOTTED DOG WMA GRAZING PROJECT 2020

Putting up temporary pasture fence on WMA.

Ungrazed / grazed (August 2020)

Kelvin Johnson, FWP Statewide Range Specialist

Pointing to start of current-annual-growth in 2020.

The Region 2 nongame biologist and a volunteer conducted detailed bird surveys on the Spotted Dog WMA within pastures involved in the grazing exchange with a neighboring landowner. These surveys provide data on habitat associations, allowing biologists to monitor the success of grazing systems through the lens of which bird species are using the habitats. The survey protocol we used has the advantage of leveraging statewide databases on bird abundance, habitat associations, and density.

This allows biologists to assess how these portions of the Spotted Dog WMA stack up against similar habitat types throughout the state. These data have not yet been analyzed as they will be most useful when the surveys are conducted at least one more time after a full round of the rest-rotations grazing system has been completed.

The biologists also established repeat photo points in key areas, especially along streams, springs, and seeps.

Conducting point-count surveys in grasslands on the Spotted Dog WMA. Torrey Ritter photo.

WILDLIFE MANAGEMENT AREAS MAINTENANCE

INVASIVE WEED MANAGEMENT

Blackfoot-Clearwater WMA: A field of non-native smooth brome that offers limited habitat value for wildlife directly, but where weeds are controlled to reduce their spread to adjoining riparian habitats and for aesthetics along a main public access road.

Blackfoot-Clearwater: Spotted knapweed in bloom in a location among native plants on elk winter range, which is scheduled for retreatment.

Douglasia is a sensitive native plant on Spotted Dog WMA, found in an area that is best kept weed-free by preventing vehicular access and controlling weeds in a buffer around it. WMAs staff know their plants.

Photo by Kristi DuBois.

Bob White treating roadsides and priority weed patches on Threemile WMA.

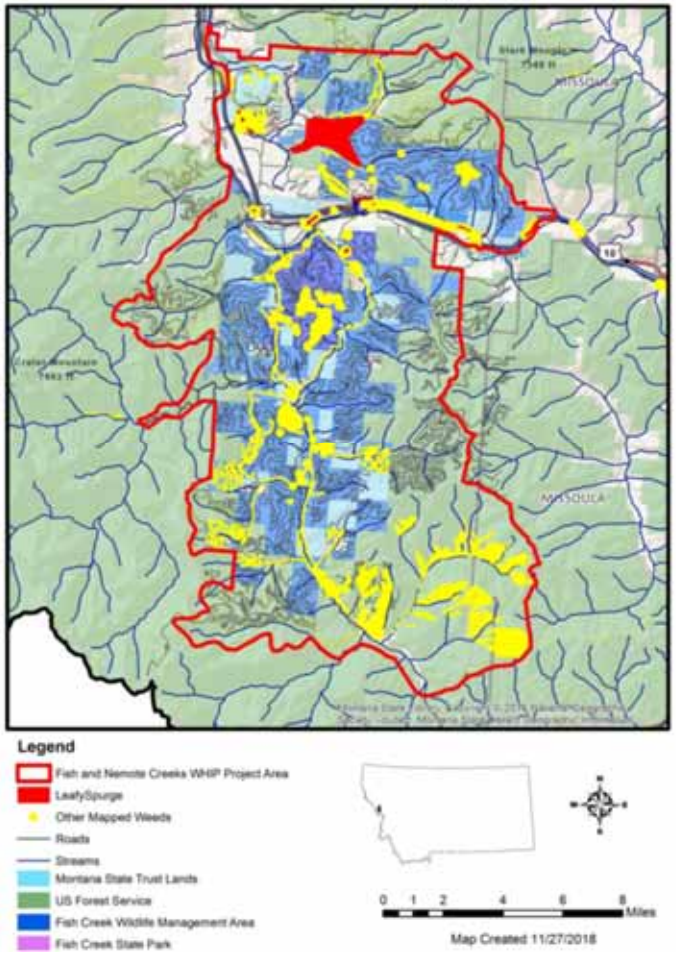
FISH CREEK WILDLIFE HABITAT IMPROVEMENT PROJECT (WHIP)

The purpose of **WHIP** is to accomplish large-scale restoration of private and publicly owned high-priority wildlife habitats through noxious weed management.

Photo by Bert Lindler

Fish Creek WMA: St. John's-wort in Freezeout Basin.

Fish and Nemote Creeks Mapped Weeds



FISH AND NEMOTE CREEKS PROJECT

Total Project: 127,775 Acres

Priority Wildlife Habitat: 127,775 Acres

Treatment Area: 24,844 Acres

WHIP Funds Requested: $783,373

Match and other financial contributions: $261,124

Duration of Project: 5 years

This application was submitted by FWP in coordination with DNRC, USFS, and Mineral County. The project involves state parks, fishing access sites, and WMA lands intermingled with DNRC lands, adjacent USFS lands, and small private ownerships (see map). Priority habitat supports mule and white-tailed deer, moose, black and grizzly bear, and many species of concern.

Photos courtesy of Liz Bradley

FISH CREEK WILDLIFE HABITAT IMPROVEMENT PROJECT 2020

Seed head weevil damage to spotted knapweed flower.

Mike Hathaway and Bert Lindler introducing biocontrol agents.

Adult Cyphocleonus weevils.

FWP Region 2 would like to shout-out a big thank you to volunteer Bert Lindler, without whom this project could not happen, and to Mike Hathaway, for his dedication to the success of its implementation.

Monitoring effectiveness with *Missoula County Youth in Restoration* students, mentored by Mike Hathaway.

Fish Creek WMA

WILDLIFE MANAGEMENT AREAS MAINTENANCE

REGION 2 WILDLIFE MANAGEMENT

STATEWIDE WILDLIFE PROGRAM ADMIN

REGION 2 WILDLIFE MANAGEMENT

by Jason Parke, FWP Forester, Helena: REGION 2 WILDLIFE FOREST MANAGEMENT UPDATE OF 2/27/2020

Last Updated:	February 27, 2020					FWP FORESTRY PROJECT ACTIVITY TRACKING SPREADSHEET												
Division	Project Name	Status	MEPA (Y/N)	Log Volume (tons)	Acres	Jan CY 20	Feb CY 20	Mar CY 20	Apr CY 20	May CY 20	Jun CY 20	Jul CY 20	Aug CY 20	Sep CY 20	Oct CY 20	Nov CY 20	Dec CY 20	Remarks
Wildlife	Threemile 1	Post-treatment	Y		342							post-weeds						Weed spraying along roads, landings, and grassland units completed in summer 2019. Follow up monitoring in spring/summer 2020. Aspen photo point monitoring? Tree planing in log landing areas?
	Dreyer Boyd	Post-treatment	Y		354		Burn plan		Burn					Burn				Pile burning complete in Unit 8. Jackpot burning complete in Unit 9. Burn plans drafted for Units 6, 7, and 10. Unit 10 broadcast burn planned for spring 2020.
	Elk Basin Restoration 1 (BCWMA)	Post-treatment	Y		404							post-weeds Burn plan						Need to follow up on weeds in spring/summer 2020. Recon for potential prescribed burning and develop burn plans.
	Nevada Lake WMA Forest Restoration	Post-treatment	Y		444			Burn plan	Burn?			post-weeds						Need to tour area with DNRC/TNC to recon potential for prescribed burning (potential jackpot burn in spring 2020). Need to monitor/treat weeds.
	Threemile 2	Active	Y	18,000	1,492								Admin					Sold to Pyramid Mountain Lumber. Road work to start in the summer of 2020. Wheelbarrow Creek Road work also planned for summer 2020. Grassland conifer removal unit needs separate contract for treating submerchantable trees.
	Elk Basin Restoration2 (BCWMA)	Proposed	Y		1500		layout/prep	archeology Pkg			[illegible]				Admin			Layout ongoing. High priority for getting under contract before end of FY20.
	Calf Creek WMA	Planning	N		780				comm endr	archeology Draft EA	pub cmt layout/prep	pre-weeds Dec Ntce	[illegible]					Adajacent to USFS Gold-Butterfly Project (NEPA approved). Potential USFS coop agreement. Removal of 40 year old conifers from sagebrush/grassland a likely priority.
	Garrity Mtn WMA Forest Inventory	Planning	N/A															On-hold until forestry database is ready. Need walk-through forestry inventory. NRDP Funded. Need forest management plan.
	Mount Jumbo WMA	Planning	N															Adjacent USFS (Marshall Woods) project ongoing. Possible adjacent City Park lands proposed for treatment. Possible pile and burn, lop and scatter, and Rx burn to enhance big game winter range on SW aspects.
	Upper Spotted Dog Restoration	Planning	N							Initial visit								NRDP proposing stream restoration work. Interested in removing conifers from adjacent aspen stands to use for large woody debris.

CALENDAR YEAR 2020: Post-treatment work scheduled for Threemile 1, Dreyer Boyd, Elk Basin Restoration 1 and Nevada Lake projects. Active road and forest management on Threemile 2 project. Proposed or Planning work for Elk Basin Restoration 2, Calf Creek, Garrity Mountain, Mount Jumbo, Upper Spotted Dog Restoration projects.

FORESTED HABITAT MANAGEMENT PROJECTS ON REGION 2 WMAs

Elk Basin Restoration 1: Result of restoring fire-resilient forested and rangeland habitats on the Blackfoot-Clearwater WMA.

Threemile 1: Releasing aspen from conifer shading to restore and enhance habitat for cavity-dependent and other wildlife on Threemile WMA.

Threemile 1: Mechanical understory thinning.

Threemile 1: Thinning dense fuel ladders and moisture competition from large ponderosa pine and snag recruits on Threemile WMA.

WILDLIFE MANAGEMENT AREAS MAINTENANCE

WMA MANAGEMENT PLANS

- Spotted Dog Revision in 2018
- Fish Creek Revision in progress
- Marshall Creek Revision in progress

Spotted Dog WMA, 11 March 2017, Julie Golla.

UPPER SPOTTED DOG CREEK RESTORATION PROJECT

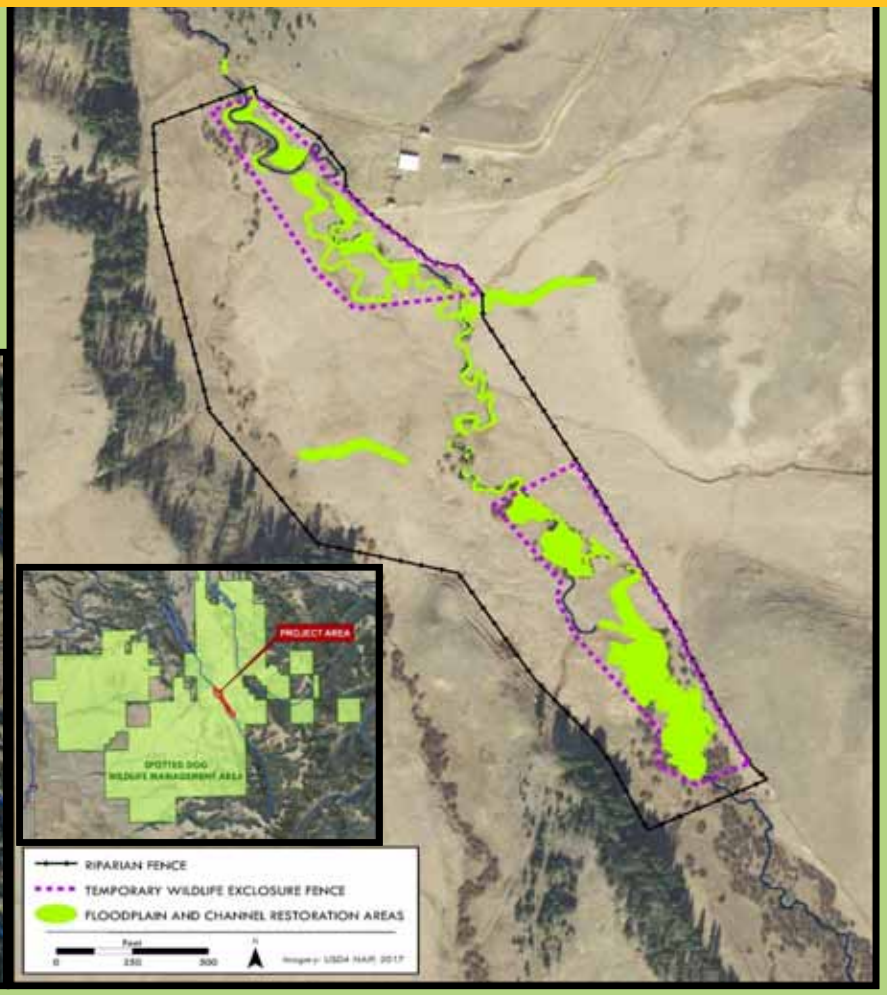
Specific goals of the Upper Spotted Dog Creek Restoration Project include:

1. improve streambank cover and increase woody debris,
2. maintain and create deep pools,
3. maintain clean substrate,
4. restore floodplain connection,
5. increase woody vegetation cover and diversity,
6. eliminate grazing impacts and noxious weeds,
7. reduce channel entrenchment,
8. reduce fine sediment from severe bank erosion,
9. establish sustainable channel morphology, and
10. promote beaver activity and evolution of the site to wetland complexes.

Environmental assessment, public involvement and decision notice were completed in 2020.

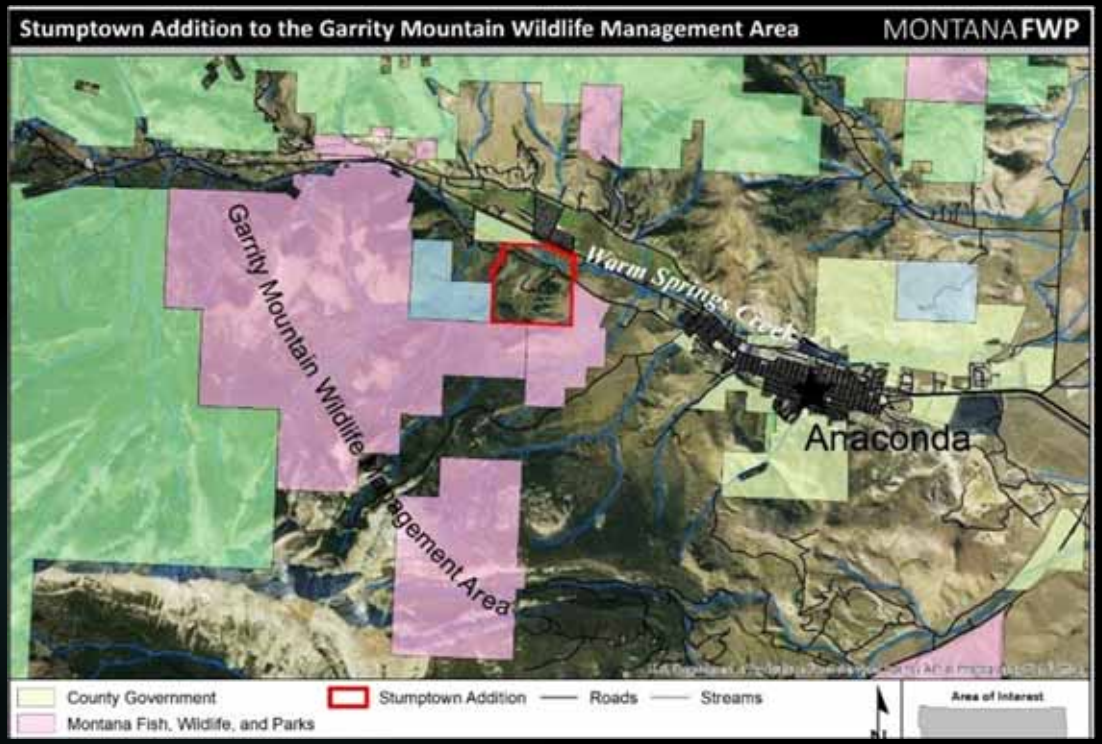
NATURAL RESOURCE DAMAGE PROGRAM (NRDP) WITH FWP

PHASE I: FALL 2020
PHASE II: 2021



REGION 2 WILDLIFE MANAGEMENT

WILDLIFE MANAGEMENT AREAS MAINTENANCE



The Stumptown Addition to Garrity Mountain WMA originated with a call from the private landowner, who wanted to see his property conserved in perpetuity. The Rocky Mountain Elk Foundation approached FWP about the landowner's wishes, recognizing the natural fit and function of the land with the existing WMA. Along with FWP and RMEF, the Natural Resource Damage Program (NRD) funded the purchase. Support from the Anaconda Sportsmen's Club informed the project's approval by the Fish and Wildlife Commission and State Board of Land Commissioners. The purchase was completed in November 2020.

Warm Springs Creek (above) and view across elk winter range on the Stumptown Addition uplands (below).

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

SECRETARIAL ORDER 3362

Montana, alongside other Western states, is actively implementing Secretarial Order 3362, signed by Secretary of the Interior Ryan Zinke on February 9, 2018, to improve habitat quality and western big game winter range and migration corridors for pronghorn antelope, elk and mule deer.

FWP Region 2 biologists are working on two proposals for conservation easements—the Maclay Ranch and Hackett Ranch--which would contribute toward the goals of the Secretarial Order, as outlined in the *Montana Action Plan 2020* (FWP, September 3, 2020).

PROPOSED CONSERVATION EASEMENTS

The Fish and Wildlife Commission has formally endorsed FWP's proposals for conservation easements on the Hackett Ranch and the Maclay Ranch, which authorizes FWP to explore conservation and funding options for turning the landowners' wishes into reality, in partnership with local land trusts. In both cases, public hunting access would be an outcome.

Both properties meet the intent of the Secretarial Order by providing connectivity for wildlife movement within a largely developed landscape along the east slope of the Bitterroot Mountains. Conservation easements on these lands would keep the ranches in private ownership, while limiting future subdivision and development.

REGION 2 WILDLIFE MANAGEMENT

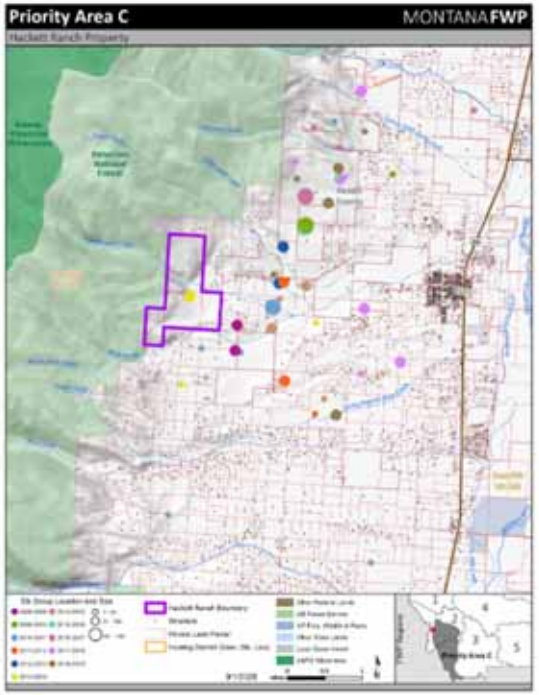


Figure 13. Locations and sizes of elk herds observed during spring green-up census counts (usually conducted in March-April). Elk survey data, administrative boundaries, and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Other reference information from ESRI and Montana State Library, Helena, MT. Map Produced by MFWP Geographic Data Services.

HACKETT RANCH PROPOSAL

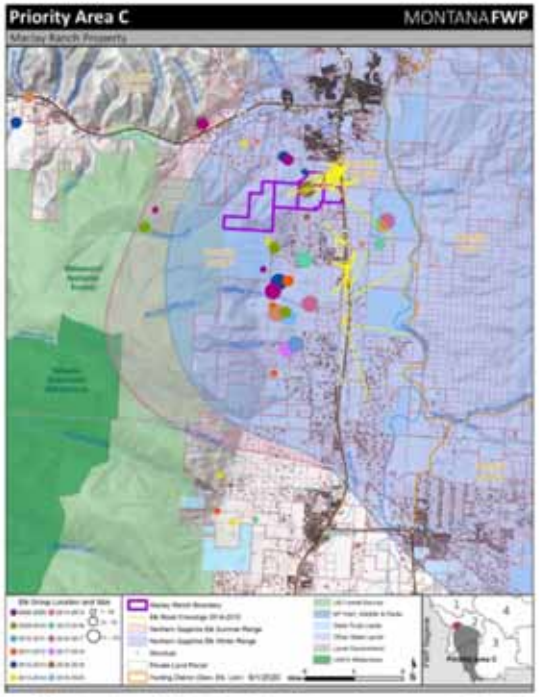


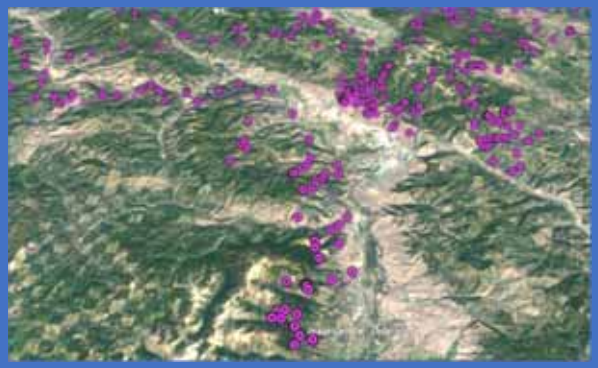
Figure 14. Locations and sizes of elk herds observed during spring green-up census counts (usually conducted in March-April). Yellow lines indicate known crossings of Highway 93 by 6 elk GPS-collared as part of a 2014-2015 study (GPS locations available upon request). Shaded areas indicate cumulative winter range (blue) and summer range (red) of collared elk. Elk survey data, administrative boundaries, and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Other reference information from ESRI and Montana State Library, Helena, MT. Map Produced by MFWP Geographic Data Services.

MACLAY RANCH PROPOSAL

REGION 2 BEAR AND LION MANAGEMENT

Region 2 bear and lion managers keep extensive notes on sightings, reports from the public, human-wildlife conflicts and other indications of bear and lion movements. These are used to help managers and biologists understand how iconic species have adapted to human development and the circumstances that foreshadow conflict.

Images courtesy of Jamie Jonkel



Grizzly bear (named Ethyl) locations around Missoula, 2012-2014

Connectivity zone identified by FWP bear managers to help inform land use planning

International Bear Association

Routes of safe passage for bears and mountain lions through humanity are essential not only for managing wildlife on the wildland-urban interface, but also for maintaining wildlife in more remote places that people have set aside for them. Bears, lions, wolves and wolverines are among species that thrive in Montana because Montana still has large landscapes of open space AND room for wild animals to pass through the developments in-between. Striking a workable balance for people and wildlife is a continual challenge.

REGION 2 BEAR AND LION MANAGEMENT

Photos courtesy of Jamie Jonkel

Grizzly bear raiding campground dumpsters (above and below).

Seeley Lake 2020

Jamie Jonkel working on an electrified sheep pen to repel bears..

Bass Creek 2020

CONFLICT RESPONSE LEADS TO LONG-TERM SOLUTIONS AND PREVENTION

Bear-human conflicts point out where bears want to be and where hazards exist that could be contained to prevent future conflicts.

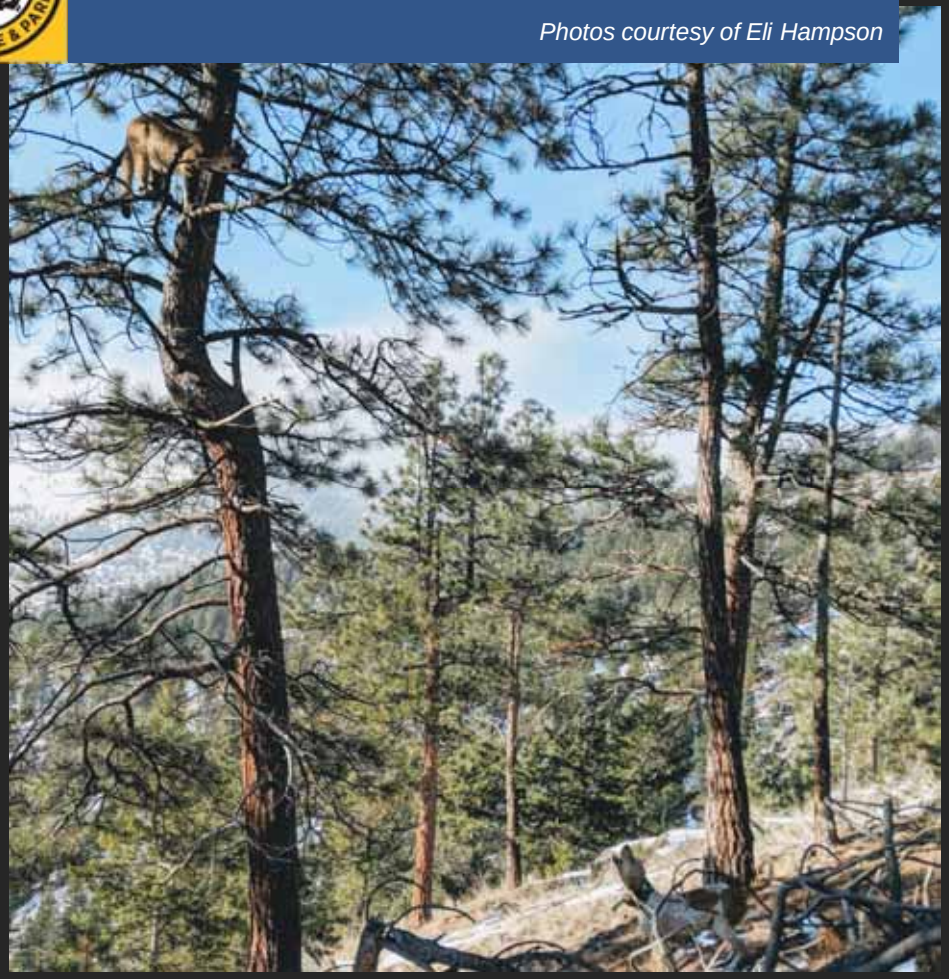
A storage shed and gates for securing garbage cans near St. Regis. While black bears pose the immediate threat to these cans, the structure will also allow the occasional grizzly bear to pass by without causing harm or notice.

Savenac Ranger Station 2020

REGION 2 BEAR AND LION MANAGEMENT

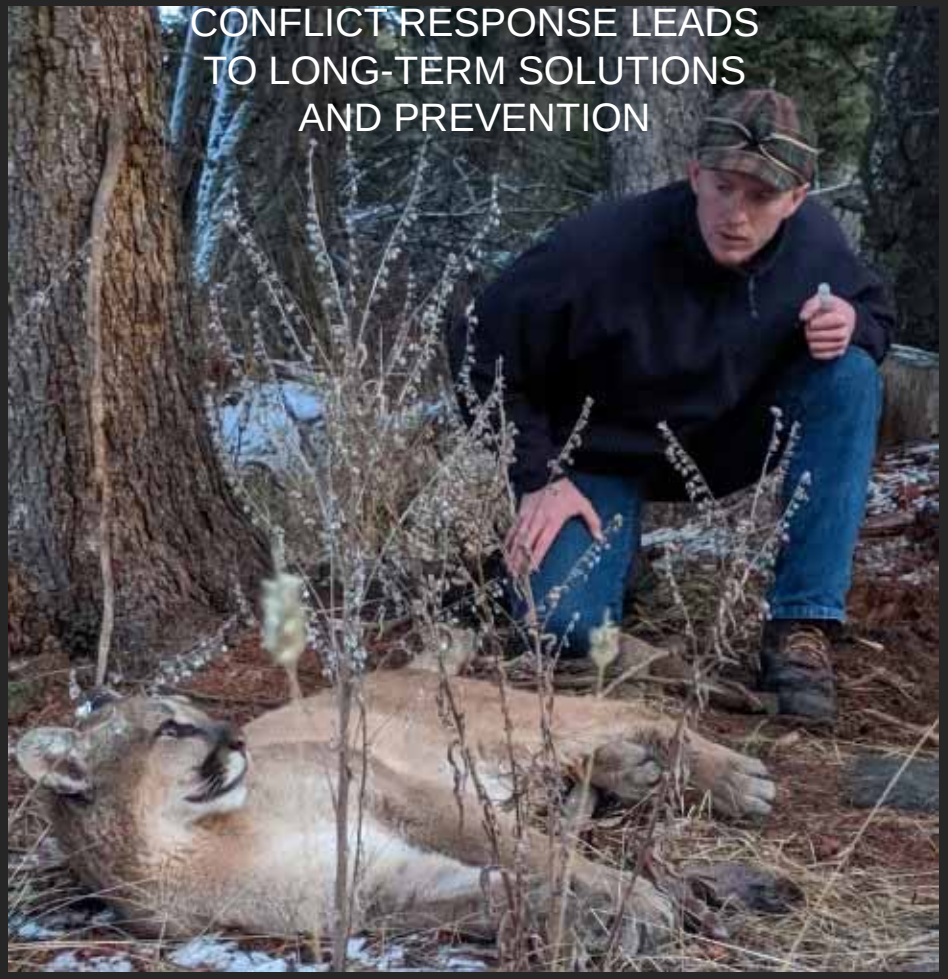
Photos courtesy of Eli Hampson

- Information & Education
- Contain Attractants
- Covenants and ordinances
- Respond to incidents of wildlife in harm's way
- Respond to incidents of habituated wildlife



Above: Aversive-conditioning a conflict lion

CONFLICT RESPONSE LEADS TO LONG-TERM SOLUTIONS AND PREVENTION



Above: A conflict lion responding to reversal drug

REGION 2 BEAR AND LION MANAGEMENT
PARTNERSHIPS ARE ESSENTIAL

A big Thank You to everyone represented here and to all others who also are essential in helping people and wildlife find a balance.

REGION 2 BEAR AND LION MANAGEMENT

Photos by Julie Golla, FWP wildlife biologist

Trapping and relocating bears is a stop–gap measure that plays a role in bear conflict management. With the new addition of a bear technician in Anaconda, we hope to work toward better long-term solutions in difficult conflict zones like Washoe Park.

Top left: FWP staff, Anaconda Police and volunteers observe a black bear for signs of sedation after being darted in Washoe Park several minutes earlier.

Bottom left: FWP Game Warden Joe Kambic and Washoe Fish Hatchery Manager Angela Smith carry the immobilized black bear to the truck for ear tagging and preparation for transport.

Right: After ear tagging the bear, the team places it in a bear trap to administer a drug reversal before transporting it to an appropriate release site.

WASHOE PARK, ANACONDA

REGION 2 WOLF MANAGEMENT

R2 Wolves Collared 2019: 12 total
FWP Summer Trapping: 6
FWP Winter Helicopter Capture: 2
Wildlife Services Summer Trapping: 4

Proactive Work:
FWP was involved in two collaborative proactive risk management projects in the Blackfoot Valley: the Blackfoot Challenge range rider project and carcass pickup program. This was the 12th year that the range rider project was implemented. The project employed four seasonal range riders and one permanent wildlife technician to monitor livestock and predators in areas occupied by the Arrastra Creek, Chamberlain, Morrell Mountain, Inez, and Union Peak wolf packs. The carcass pickup program removed livestock carcasses from Blackfoot Valley ranches and transported them to the carcass compost site to reduce attractants in livestock grazing and calving areas. FWP and the Blackfoot Challenge also partnered with Wildlife Services to deploy fladry in the Blackfoot Valley to deter wolves from livestock calving yards.

Outreach education:
August and December Wolf trapping class
Wolf update with Missoula Citizens Advisory Committee
Spring Furbearer & Wolf update with Montana Trappers Association
Lincoln High School Wolf Education Talk
Evaro Community Council Wolf and Wildlife Friendly Fencing Talk
Blackfoot Challenge Rancher 7 Meetings

2019 R2 Acknowledgements:
R2 Technician: None
R2 Volunteers: None
Blackfoot Challenge Range Riders: Eric Graham, Jordan Mannix, Lindsey Mulcare, Sigrid Olson, Vicki Pocha
Blackfoot Challenge: Working with ranchers and landowners to reduce wildlife conflict in the Blackfoot Watershed (Range Rider project, fladry, carcass pick-up, wolf monitoring)

Collaring, prevention, outreach, 2019

A summary of wolf management activities in Region 2.

Wolves respecting fladry, 2020

Wolf tracks are faintly visible in the foreground (above) and do not cross the line of fladry around a calving area. Fladry is a temporary deterrent that helps ranchers.

Region 2 radioed wolves, 2020

A collar being placed on a captured wolf in 2020 (above). A radioed wolf reobserved on a trail camera in 2019.

WOLF TRAPPER TRAINING & CERTIFICATION

- Wolf trapper training and certification is mandatory for all trappers before setting a wolf trap in Montana.
- FWP staff in Region 2 have taught multiple trainings every year since wolf trapping began in 2012.
- In 2012, Tyler Parks and others in FWP helped develop and deliver an online wolf trapper training and certification course, in response to the Covid pandemic.

Region 2 wolf specialist, Tyler Parks, handles a wolf trap during a wolf trapper training class at the Region 2 headquarters. Reinforcing ethical thought patterns and practices is the primary goal.

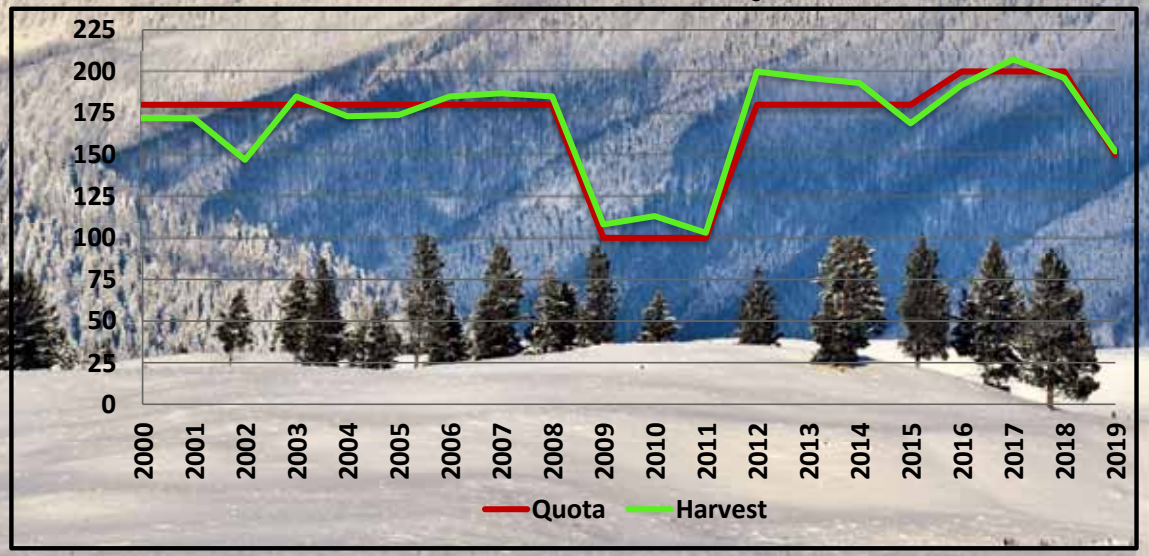
REGION 2 WILDLIFE MANAGEMENT

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

FURBEARER HARVEST MANAGEMENT

Tyler Parks

BOBCAT HARVEST AND HARVEST QUOTA, REGION 2



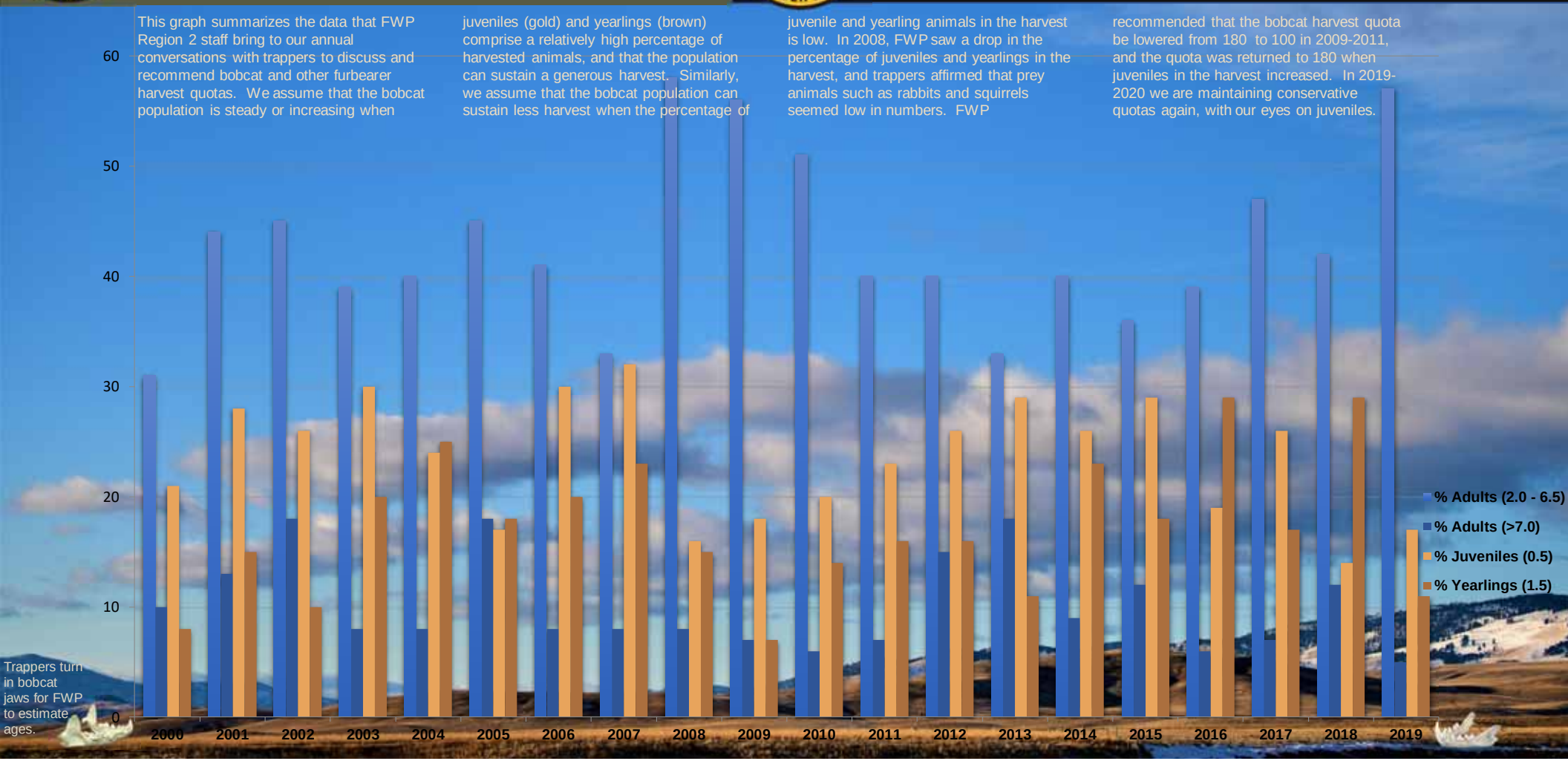
- The harvest quota controls the bobcat harvest.
- Harvest hasn't lagged far below the quota since 2003.
- Harvest quotas are set on the basis of sex and age data collected from harvested animals.
- Harvest quotas are set to respond to biological indicators of the bobcat population before harvest could begin to drive the population trend.

FWP recommended and the Commission approved the same harvest quotas as 2019 for the 2020 license year.

REGION 2 WILDLIFE MANAGEMENT
BOBCAT HARVEST AGE STRUCTURE

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

This graph summarizes the data that FWP Region 2 staff bring to our annual conversations with trappers to discuss and recommend bobcat and other furbearer harvest quotas. We assume that the bobcat population is steady or increasing when juveniles (gold) and yearlings (brown) comprise a relatively high percentage of harvested animals, and that the population can sustain a generous harvest. Similarly, we assume that the bobcat population can sustain less harvest when the percentage of juvenile and yearling animals in the harvest is low. In 2008, FWP saw a drop in the percentage of juveniles and yearlings in the harvest, and trappers affirmed that prey animals such as rabbits and squirrels seemed low in numbers. FWP recommended that the bobcat harvest quota be lowered from 180 to 100 in 2009-2011, and the quota was returned to 180 when juveniles in the harvest increased. In 2019-2020 we are maintaining conservative quotas again, with our eyes on juveniles.



Trappers turn in bobcat jaws for FWP to estimate ages.

REGION 2 WILDLIFE MANAGEMENT

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

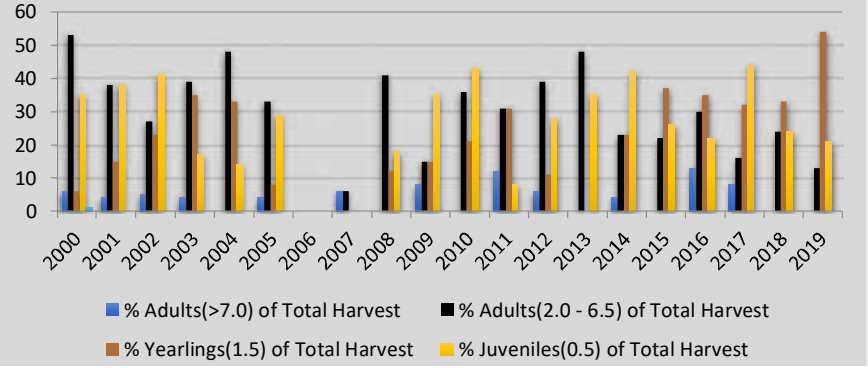
River otter lower jaw, from which a tooth is extracted for aging. *Online image*.

OTTER HARVEST MANAGEMENT

River otter in Region 2 are managed under conservative harvest quotas, recognizing everyone's interest in otter as a watchable species. The regional harvest quota is 25, though harvest data and incidental observations of otter suggest that the population is generally increasing.

OTTER HARVEST AGE STRUCTURE, REGION 2

Percentages of juveniles and yearlings in the otter harvest since 2014, as well as a preponderance of males in the harvest, suggest that trapping is not affecting the reproductive segment of the otter population in Region 2.



Clark Fork River, 2020.

REGION 2 WILDLIFE MANAGEMENT

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

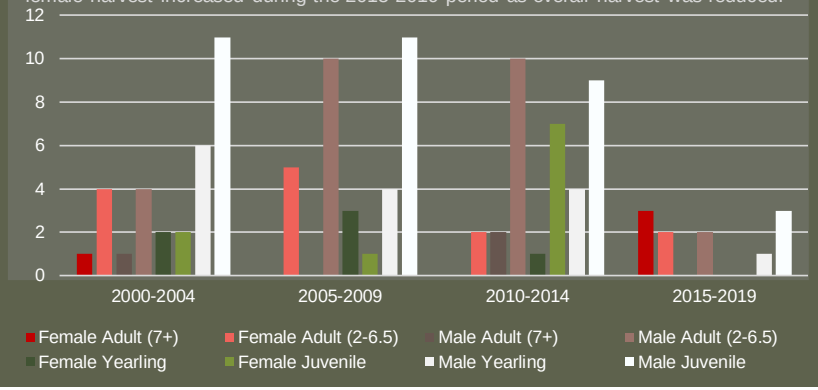
FISHER HARVEST MANAGEMENT

Region 2 lies at the eastern edge of fisher habitat in the Northern Rockies. Trapping harvest data from 1983-2014 can be interpreted to indicate a long-term increase of fisher, although low sample sizes limit our confidence (*Region 2 Wildlife Quarterly, August 2016*). Beginning in 2016, fisher trapping has closed with the harvest of 1 female or 5 males (whichever occurs first), which has coincided with an increase in harvest of adult female fishers and an absence of yearling and juvenile female fishers. The reduced overall harvest was intended, but the change in composition of the harvest was a confounding consequence.

Kristi DuBois, FWP Wildlife Biologist (retired), in a stand of Western Red Cedar, west of Missoula, which produces large trees and cavities used by fishers. Photo by Bert Lindler.

FISHER HARVEST AGE STRUCTURE, REGION 2

Sex and age-classes of fisher harvest are arranged (below) from most impactful (left, red) to least impactful (right, white) for each of four time periods. While low, the adult female harvest increased during the 2015-2019 period as overall harvest was reduced.



An unsuspecting recreationist on downfall along the east slope of the Bitterroot Mountains. Fisher use downfall for resting areas.

BLACK BEAR HARVEST MANAGEMENT

Photos of black bears on the National Bison Range.

As for furbearers, teeth extracted from harvested black bears are essential for estimating the age structure of the harvest, and for combining with other data to estimate the population trend. Hunters are required to have their harvested bears checked by FWP, but this regulation was relaxed temporarily in 2020, due to staff shortages and a need to limit the numbers of customers congregating in our regional offices during the pandemic. The loss of one-year's data, while unfortunate, will not seriously compromise long-term management.

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

MANDATORY CHECK OF HARVESTED BIGHORN SHEEP, MOUNTAIN GOAT AND MOUNTAIN LION

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

CWD SURVEILLANCE AND MANAGEMENT

Nick Bromen taking biological samples from an elk at the Region 2 headquarters in 2020.

Hunters brought over 300 animals to the Region 2 headquarters in Missoula for CWD Technician Nick Bromen to collect CWD samples. Of the animals checked around the state, 49 mule deer, 108 white-tailed deer, 50 elk and 1 moose came from Region 2. As of this writing, no tests have come back positive for CWD in Region 2.

For more information, go to [CWD Management | Montana FWP (mt.gov)]

A deer carcass dumped alongside Loiselle Lane, west of Missoula, in 2019.

REGION 2 WILDLIFE MANAGEMENT

Darby

Fish Creek

Anaconda

Bonner

FWP Region 2 biologists operated the usual hunter check stations at Anaconda, Bonner, Darby and Fish Creek during the 6 weekends of hunting season in 2020, while incorporating Covid precautions. (These pictures are from previous years when students from the University of Montana were available to help and when FWP staff were handling animals.)

REGION 2 WILDLIFE MANAGEMENT
2020 CHECK STATION RESULTS

MONTANA FISH, WILDLIFE & PARKS

Region 2 Hunter Check Station Results
Cumulative Totals for 2020 Season | Oct. 24-Nov 29, 2020

Station	Year	No. of Hunters	Elk	Mule deer	White-tailed deer	Black bear	Moose	Sheep	Goat	Wolf	Total animals	% Hunters w/ game	Snow depth[1] (in.)
Darby (includes HD 321)	2020	3,406	162	29	72	1	0	1	1	1	267	7.8	22
	2019	4,012	165	37	82	2	1	1	0	2	290	7.2	22
	2018	3,907	169	33	69	2	2	3	0	1	279	7.1	18
	2017	4,006	159	22	68	2	1	2	0	0	254	6.3	22
	2016	4,209	139	23	81	2	0	3	0	2	250	5.9	6
Anaconda	2020	798	35	16	26	0	0	1	0	0	78	9.8	9
	2019	981	31	24	36	0	0	2	0	0	93	9.5	12
	2018	Did not operate; Upper Clark Fork CWD surveillance check stations in place instead											
	2017	1,047	46	10	32	2	0	1	0	0	91	8.7	13
	2016	1,258	29	20	19	0	0	0	0	0	68	5.4	3
Bonner	2020	5,100	35	31	354	2	0	0	0	0	422	8.3	28
	2019	5,232	49	38	365	2	0	0	0	0	454	8.7	11
	2018	5,800	74	65	388	4	0	0	0	0	531	9.2	8
	2017	6,062	95	45	507	5	0	0	0	2	654	10.8	8
	2016	6,615	58	75	489	6	0	0	0	0	628	9.5	5
All Stations through 3rd week	2020	9,304	232	76	452	3	0	2	1	1	767	8.2	
	2019	10,225	245	99	483	4	1	3	0	2	837	8.2	
	2018	9,707	243	98	457	6	2	3	0	1	810	8.3	
	2017	11,115	300	77	607	9	1	3	0	2	999	9.0	
	2016	12,082	226	118	589	8	0	3	0	2	946	7.8	

*2018 Harvest totals do not include data from an Anaconda station; CWD surveillance stations are in operation in the Upper Clark Fork instead.

[1]Snotel sites at Saddle Mountain (Bitterroot), Peterson Meadows (Upper Clark Fork) & Copper Camp (Blackfoot)

-Wolf harvest only reflects those wolves checked at the R2 check stations, it is not total reported harvest.

WEATHER: Temperatures were in the 20s and 30s with no snow

Fish Creek (Mineral County) Check Station: Success rate at Fish Creek was average in 2020, but hunter numbers were up. Compared to 2016, overall hunter numbers over the 6 weekend season were up 22%. Average hunter numbers in the last three weekends of the season were 29% higher in 2020 than in the past 6 years of check station operation over an 8-year period.

FWP NEWS RELEASE

Region 2 Headquarters
3201 Spurgin Road · Missoula, MT 59804
Media Contact: Vivaca Crowser · 406.542.5518 · Vcrowser@mt.gov

THE **OUTSIDE** IS IN US ALL

FOR IMMEDIATE RELEASE: November 30, 2020

Average end to big game season in west-central Montana

MISSOULA – The 2020 general big game hunting season closed on November 29, with Montana Fish, Wildlife & Parks' west-central Montana check stations reporting above average hunter success in the Bitterroot and Upper Clark Fork, and lower success in the Blackfoot.

Hunter numbers at the FWP Darby, Anaconda and Bonner check stations were lower than average, partly a result of reduced staffing and hours of operation due to Covid operating procedures. Those that stopped through the stations reported above average success in some places. Hunters checked at Darby enjoyed the highest success (7.8%) since 2013 and at Anaconda (9.8%) in more than 20 years. Hunter success at Bonner climbed in the last two weeks to 8.3%, down only slightly from last year.

"We didn't know what to expect this year, with all the influences of the pandemic at play, alongside the usual curveballs that weather can throw at hunters," said Mike Thompson, FWP Region 2 Wildlife Manager. "All in all, we can say that nothing unusual stood out in this harvest sample, which tends to represent hunting effort on public lands."

As far as total animals checked at the region's three stations, harvest levels at Darby were on par with the past three years, totaling 169 elk, 29 mule deer and 72 white-tailed deer. Harvest levels at Bonner were down from recent years for all three species (35 elk, 31 mule deer and 354 white-tailed deer), though whitetail harvest increased in the past two weeks to finish at 97% of last year's tally. At Anaconda, harvest levels for elk (35) were higher than last year's, despite the fact that the check station was closed in the third weekend due to illness. The mule deer (16) and white-tailed deer (26) harvests at Anaconda were lower than last year, but within the normal range.

"Hunting regulations didn't change much between the 2019 and 2020 seasons, and last year was a mild winter," Thompson said. "Given that, we hoped to see a harvest that tracked with last season, and we did with a few localized exceptions that we'll follow up on with other survey work."

The general season closed on Nov. 29 but extended hunting opportunities continue for some hunters in west-central Montana that already hold some special licenses. Find out more at fwp.mt.gov.

-fwp-

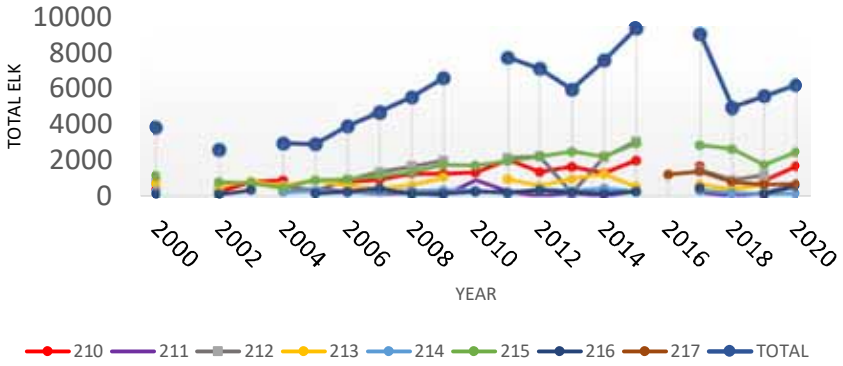
REGION 2 WILDLIFE MANAGEMENT

2020 AERIAL SURVEYS FOR ELK

- 6,189 elk were counted in the Upper Clark Fork in Winter 2020, before Covid restrictions, compared with 5,560 counted in 2019.
- Actual elk counts were higher in 2020 than in 2019 in every hunting district surveyed.
- The unexpected low count in 2019 was due to elk distribution in a hard winter, and in 2018 not all hunting districts in the Upper Clark Fork were surveyed.
- Aerial surveys were not accomplished due to Covid precautions in Region 2 hunting districts where surveys are flown during spring green-up.

Julie Golla photos, 2017: Above is HD 216 and below is HD 215.

UPPER CLARK FORK WINTER ELK SURVEY TREND



All hunting districts are flown every year when possible, but in some years not all districts were flown.

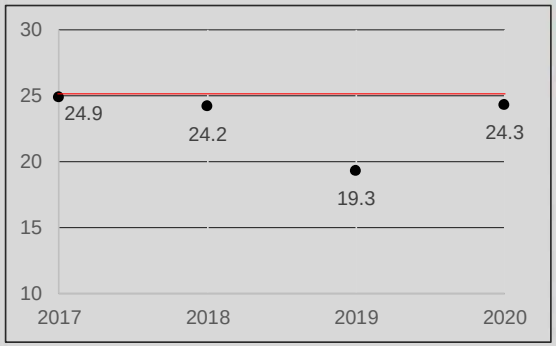
REGION 2 WILDLIFE MANAGEMENT

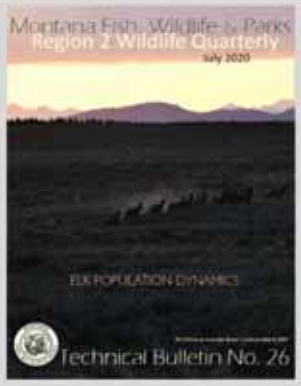
Bulls are least likely to be well represented in ground surveys of elk populations. Biologist Liz Bradley recorded these elk in Spring 2020 up Ninemile, in HD 201.

ELK RECRUITMENT SURVEYS

Surveys to obtain ratios of calves per hundred cows were conducted from the ground in hunting districts that were not surveyed from aircraft. Biologists in Region 2 classified a total of 6,697 elk from the ground in winter-spring 2020 as well as the thousands of elk classified from aircraft before the pandemic struck.

ELK CALF RECRUITMENT





Recruitment of 10-month-old calves into Region 2 elk populations rebounded in the mild winter of 2019-20 after declining in the hard winter of 2018-19. The red line marks the 2004-2016 average recruitment as a benchmark for comparison. Find more detail in the July 2020 *Quarterly*.

The well-known "Trader Brothers" elk stood for classification in the spring of 2020.

REGION 2 WILDLIFE MANAGEMENT

WHITE-TAILED DEER RECRUITMENT 2020

Hunting District	Total Observed	Fawns / 100 Adults
285	62	43
283	312	56
290	199	58
292	363	57
202	545	36
203	165	31
201	500	49
COMBINED	2,146	47

- Highest recruitment generally in agricultural districts
- Lowest recruitment generally in forested habitats
- Relatively good recruitment overall

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

Above: Blackfoot-Clearwater Wildlife Management Area, 2017. Above right: Sunset Hill Road, 2019.

STATEWIDE ESTIMATED WHITE-TAILED DEER

Region	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	LTA	% difference from LTA
Region 1	73,995	67,809	72,890	77,675	84,482	81,738	92,687	79,446	67,887	67,195	76,580	-12
Region 2	35,430	28,640	30,210	30,226	38,457	36,357	39,740	39,323	36,453	31,539	34,638	-9
Region 3	23,151	18,025	20,568	21,086	23,550	24,532	25,712	23,256	20,387	23,557	22,382	5
Region 4	32,230	26,980	29,050	20,683	26,193	30,436	29,801	32,731	28,743	29,818	28,666	4
Region 5	10,910	12,620	15,920	14,510	12,520	15,890	15,830	16,450	13,160	15,966	14,378	11
Region 6	14,750	6,330	10,710	8,400	11,210	15,390	12,770	9,170	10,846	10,761	11,034	-2
Region 7	13,550	9,650	13,770	11,240	14,350	16,330	18,520	14,860	14,827	17,318	14,442	20
Statewide	204,016	170,054	193,118	183,820	210,762	220,673	235,060	215,236	192,303	196,154	202,120	-3

LTA = long term average (previous 10 years)

- The estimates for white-tailed deer populations are based upon population modeling with survey and harvest inputs.
- White-tailed deer estimates are not comprehensively validated with site specific research or enhanced monitoring efforts.
- White-tailed deer estimates are not framed with confidence intervals and are subject to adjustment.

FWP generates annual estimates of white-tailed deer populations statewide. While estimates at this scale require making assumptions that don't always hold true, they serve as one more input, among others, in population assessment. With these caveats in mind, the statewide estimate for Region 2 shows whitetail numbers down 9% in 2020 from the long-term average population level, and down from levels that were estimated for 2019. This is to be expected as an effect of recent hard winters, felt variously around the region. We would expect to see a rebound in deer numbers for 2021 reflecting the mild winter of 2019-20 and December's mild start to the winter of 2020-21.

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION

Above: Ovando-Helmville Road, 2020. Above right: Wet Mulkey Gulch, 2020.

STATEWIDE ESTIMATED MULE DEER

2020 Mule Deer Population Report

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	LTA	% difference from LTA
Region 1	8,984	13,016	6,495	7,547	10,728	8,065	6,918	10,770	5,800	6,277	6,987	8,326	-16
Region 2	11,486	14,228	11,472	12,754	12,167	14,267	15,960	17,345	13,864	11,530	10,865	13,276	-18
Region 3	33,624	33,293	33,204	34,172	35,482	38,911	43,049	50,496	43,835	42,774	39,004	38,895	0
Region 4	50,096	46,384	46,216	49,210	56,133	56,629	64,264	71,359	66,281	59,783	60,701	57,005	6
Region 5	38,334	34,720	33,836	37,977	32,185	32,042	36,182	38,357	36,966	32,226	32,583	35,037	-7
Region 6	35,488	42,053	32,983	36,674	37,487	43,561	64,660	65,848	63,371	66,510	64,940	50,507	29
Region 7	69,213	66,549	47,424	53,934	79,287	103,812	136,000	132,000	117,519	102,538	115,498	92,889	24
Statewide	247,225	249,241	211,630	232,268	263,569	297,288	366,033	386,175	349,635	321,638	330,578	295,935	12

LTA = long term average (previous 10 years)

- The estimates for mule deer populations are based upon population modeling with survey and/or harvest inputs.
- Mule deer estimates are not comprehensively validated with site specific research or enhanced monitoring efforts.
- Mule deer estimates are not framed with confidence intervals and are subject to adjustment.
- The method used to make mule deer population estimates was changed in 2015 - Population estimates on this page should be used in place of previous population estimates.

FWP generates annual estimates of mule deer populations statewide. While estimates at this scale require making assumptions that don't always hold true, they serve as one more input, among others, in population assessment. With these caveats in mind, the statewide estimate for Region 2 shows mule deer numbers down 18% in 2020 from the long-term average population average (LTA), and down from levels that were estimated for 2019. This is to be expected as an effect of recent hard winters, felt variously around the region. We would expect to see a rebound in deer numbers for 2021 reflecting the mild winter of 2019-20 and December's mild start to the winter of 2020-21.

REGION 2 WILDLIFE MANAGEMENT

270-51 MULE DEER BUCK PERMIT

New in 2020

MONTANA FISH, WILDLIFE & PARKS

1801 N. 1st Street
Hamilton, MT 59840
rmowry@mt.gov; 406-363-7141

August 2020

Dear Hunter,

Congratulations on drawing the new 270-51 mule deer buck permit! As this is a brand new opportunity in 2020, we wanted to send you a few reminders about this permit and what the requirements are for you.

FWP introduced this permit as an experimental approach to managing deer in special management areas ("trophy" areas) in the age of Chronic Wasting Disease (CWD). CWD is a fatal, contagious neurological disease of the deer family (including elk and moose) and has been detected in herds throughout the state. To date, there have been no detections in Ravalli County. However, research suggests that high deer densities and high buck:doe ratios are both significant factors in the increased spread and prevalence of the disease. Adult mule deer bucks are 2-3 times more likely to be infected. Management actions in HDs where CWD has been detected have focused on reducing overall deer numbers and buck:doe ratios through general license antlered and antlerless opportunity – including in HD510, which is a designated special management area.

If CWD hits HD270 it will have significant impacts, not only on the deer herd, but on future hunting opportunities. Our goal with introducing the 270-51 permit, which is limited to bucks that have 3 antler points or fewer on one side, is to a) reduce buck:doe ratios while minimally impacting trophy quality and b) determine if this type of permit may be effective in delaying or reducing the effects of CWD in special management areas.

The 3-point restriction does not apply to eye guards, and only applies to one side of the antlers. For example, you may harvest a 3x3, 3x4, 3x5, 2x5, 2x6, etc. You can help us achieve our management goals in this HD by focusing your efforts on older bucks. For information and tutorials on successfully aging mature bucks in the field, please contact Scott Falagan at 360-3241. In addition, this permit comes with a mandatory inspection so that FWP personnel can record antler measurements, pull a tooth for aging, and collect a sample for CWD testing. This information will help inform whether this permit is accomplishing its goals.

Upon harvest, please contact a regional office, wildlife biologist, or game warden to inspect your deer. We prefer if you can use local staff to conduct the inspection (see contact info below). Deer may also be taken to the Darby Big Game Check Station, located 2 miles south of Darby on Highway 93, on weekends during the general rifle season. If you want to do a mount of your deer and keep the cape, you will need to collect the CWD sample yourself and/or work with your taxidermist to do so. There is an instructional video on our website (you may access directly at https://youtu.be/jz2dcQaaAVw).

Rebecca Mowry	Lou Royce	Justin Singletery	Missoula Headquarters
Hamilton	Darby, Corvallis	Stevensville	3201 Spurgin Rd
Wildlife Biologist	Game Warden	Game Warden	Missoula, MT 59804
363-7141	240-0466	240-0764	542-5500
rmowry@mt.gov	lroyce@mt.gov	jsingletery@mt.gov	

Thank you for your cooperation and good luck!

Rebecca Mowry
MFWP Wildlife Biologist

MONTANA FISH, WILDLIFE & PARKS

HD270 Mule Deer Harvest Form

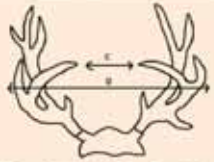
Hunter Information
Name (First) _____ (Last) _____ (M.I.) _____ Phone No: (___)_____-_____
Address_____City_____State_____Zip_____
ALS Number: _____/_____/_____-_____

Methods
Date of Harvest: ___/___/_____
Permit/Harvest Type: Hunter Harvest ___Super Tag___Auction Tag_____Other _____
Type of weapon used: Rifle_____ Handgun_____ Archery_____ Other_____
Did you use the services of an outfitter? Yes_____ No_____ If yes, name of outfitter _____

Location of Harvest in HD270
Creek Name, Mountain, Landowner, etc. _____
Land Type: National Forest_____ State_____ Private_____ BMA_____ Name of BMA_____
Township _____ Range _____ Section _____ or GPS coordinates _____

Biological Check Information
Tooth Collected: Yes ____ No____ *Keep the entire tooth intact. We need the root!*
CWD Sample Collected: Yes _____ No _____
Estimated age from tooth wear/replacement: _____

Antler points (greater than 1 inch) NOT including G1 eye guards
A. Right _____ B. Left _____ Broken tines? Y N If Yes, describe _____
C. Tip-to-tip spread (in) _____ and _____/8
D. Widest outside spread (in) _____ and _____/8
Remarks:



Examiners Name (Print)_____

I swear and affirm that the mule deer was taken pursuant to Department rule which permits the acquisition of title to the mule deer by me described on this application, and the information is true and correct. MCA 87-6-302.

Signature of Hunter _____Date _____

Age by Tooth Cementum Analysis: _____

SEND COMPLETED PAPER FORM WITH TOOTH ENVELOPE ATTACHED TO BITTERROOT AREA BIOLOGIST
Montana Fish, Wildlife & Parks, 1801 N. 1st St., Hamilton, MT 59840

REGION 2 WILDLIFE MANAGEMENT

ELK HUNTING SEASON EXTENSION 2020

HISTORY:
The elk season was last extended in 2007 for some hunting districts (HD) in Region 2. Certain criteria must be met to consider extending a hunting season.

Mild weather conditions in HD 291 in December, where elk are over objective, but still scattered.

Mild weather continued into the New Year in HDs 217 and 215.

WHERE: The hunting districts (HDs) where the B Licenses remained valid during the extension are the same districts for which these B Licenses were valid in the general elk season, except for the 262-01 B License. During the general season, the 262-01 B License was valid in multiple HDs, but in the extended season it was valid only in HD 204.

HOW: The B Licenses were almost exclusively valid on private lands, and in some cases on adjoining DNRC lands outside the National Forest boundary. DNRC lands within FWP Wildlife Management Areas were specifically closed to the extended elk season. Regulations that governed the use of these Elk B Licenses during the general season were continued and enforced in the extended season.

WHAT: The Elk B Licenses for which the season was extended until January 15 were 213-01, 215-02, 217-02, 262-01, 291-03 and 293-01. Hunters were awarded one of these special licenses through a drawing earlier in 2020, and 262-01 was available over the counter prior to the start of the season. No licenses were available for purchase during the extended season.

Elk in HD 217 on New Year's weekend.

WHY: The reason for the extension was low elk harvest on private lands during the general hunting season in places where elk numbers are above population objectives and where private land access was available during the general season but the desired harvest wasn't met. The decision to extend the elk season for these B License holders was made in accordance with the Administrative Rules of Montana (12.9.1105), which establish criteria that must be met and identify the FWP Director and local Fish and Wildlife Commissioner as the decision-makers.

REGION 2 WILDLIFE MANAGEMENT

GAME DAMAGE RESPONSE

Elk eating and trampling alfalfa and potentially damaging irrigation pipe in Hunting District 260 in 2016.

GENERAL HUNTING SEASON: Public hunting during the general deer and elk hunting season is the primary management tool for FWP to help strike a balance between wildlife managed on behalf of the public and landowners' rights to make a living on their property. Simply put, elk and deer in reasonable numbers and scattered distributions cause less damage on private lands than elk and deer in excessive numbers and concentrations.

ELK SHOULDER SEASONS: Shoulder seasons for elk are a tool that was continued in 2020, on private lands only, for the period from August 15 to the start of either the archery-only season or the general rifle season, in many Region 2 hunting districts (HDs), but were reduced to portions of only a few HDs in the "late shoulder" from the close of the general season to January 15. The "early shoulder" involves relatively few hunters and the greatest benefit is in elk dispersal from crops, with little harvest achieved. More harvest can be achieved in the late shoulder if conditions allow.

Elk concentrated on an agricultural operation in Hunting District 291 in 2018.

DAMAGE HUNTS: FWP biologists and game wardens work together with landowners who allow public hunting to disperse elk and deer that are in the act of causing damage when hunting seasons are closed. These are generally more targeted responses to game damage in progress, whether it's on crops in the field or in the particularly difficult situation of elk competing with cattle for hay on winter feedlines. Limited numbers of hunters are selected, in part, by landowners and, in part, by random drawing from the list of antlerless permit or license-holders or the FWP hunt roster for the affected hunting district. Rules and processes intend a rapid response by a few hunters to an immediate need.

STATEWIDE WILDLIFE PROGRAM ADMINISTRATION
MOUNTAIN GOAT MANAGEMENT

NEW IN 2020: FWP developed statewide *Recommendations For Managing Mountain Goats in Montana* (pictured at right) in 2020, which updated our understanding of best-supported strategies for perpetuating mountain goats.

In Region 2, we leveraged the energy that we invested in helping develop the statewide recommendations into a renewed priority for surveying and assessing mountain goat populations locally. We outlined some of our near-term priorities for mountain goats in Region 2 in the *Region 2 Wildlife Quarterly* for September 2020 (pictured below).

In July 2020, FWP counted 36 mountain goats in the Great Burn Proposed Wilderness (far right), comprised of 15 adult nannies, 12 subadults and 9 kids.

In the fall of 2020, the special license-holder for a mountain goat in Hunting District 240 harvested a 6-year-old male in the Bitterroot Mountains. FWP has made an extra effort to limit the harvest of female mountain goats, and 2020 was the first hunting season when it was unlawful to take a female mountain goat accompanying a kid or a female in a group that contains one or more kids (in Regions 1, 2 & 4).

REGION 2 WILDLIFE MANAGEMENT

Dalton Lake, 2020, by Liz Bradley

REGION 2 WILDLIFE MANAGEMENT

BIGHORN SHEEP COUNTS 2020

HD	Method	Lambs	Ewes	Rams	Total
203	Ground	8	44	51	107
270	Helicopter	12	60	12	84
261	Helicopter	16	48	21	85
250	Helicopter	5	18	4	27
210	Ground	12	29	7	54

Left and bottom right: Liz Bradley photos, Petty Creek, 2020. Upper right: Mike Thompson & Sharon Rose, Lower Rock Creek, 2020

REGION 2 WILDLIFE MANAGEMENT

WELCOMING YOUR OBSERVATIONS OF ANTELOPE AND MOOSE

Kendra McKlosky, HD 293

Antelope and moose occur in low densities in Region 2 and can be difficult to survey. Your observations would help, and you can email them to *mthompson@mt.gov*

SANDHILL CRANE CENSUS

U. S. Fish and Wildlife Service & FWP

Replicate Counts at Warm Springs WMA in 2020:

9/22: Brady 391, Adam 406, volunteer 418
9/23: Brady 472, Adam 452
9/24: Brady 447, Adam 500, Shawn 440

Sandhill Crane and chick in roadside wetland in the Blackfoot Valley, 2020.

NONGAME PROGRAM

The primary goals of the FWP nongame program are to keep common species common, protect and enhance habitat for the range of species that make up intact ecosystems, and conduct outreach on the importance of nongame species to wildlife management generally. Regional nongame biologists are responsible for providing accurate and useful data for target species to establish baseline information on population size, distribution, and habitat associations, and for monitoring those species over time to assess trends in habitat and population metrics.

During the past 2 years, the nongame program at the statewide level has focused on species for which there is no reliable way to rank their status in the state due to difficulty surveying for the species. Difficulties may arise because the species is cryptic, is associated with unique and rare habitat types, or because the species exists in small, isolated populations. In Region 2, these species include the black swift, great gray owl, and northern bog lemming.

Golden Eagle in the Blackfoot, January 2021.

Black swift nestling on cup nest made of mosses. Photo courtesy of Kristi Dubois.

BLACK SWIFT

Black swifts are a small, lightning-fast black bird that only nest in specific habitat types on the landscape. The swifts primarily nest at waterfalls, where they build cup nests out of mosses and lichens that cling to the overhanging cliffs around the waterfall.

Surveying for the presence of nesting black swifts requires sunrise or sunset surveys where observers wait at a waterfall and attempt to catch a glimpse of the birds returning to or leaving their nests for daily foraging bouts that may take them hundreds of miles from their nest site each night.

The majority of black swift nesting sites are located in northwest Montana and Glacier National Park. There are only two confirmed nesting sites in Region 2 so far, suggesting west-central Montana is on the edge of their range. This puts Region 2 in an important role for monitoring black swifts, as negative impacts to species tend to show up first on the periphery of their ranges.

Prior to conducting an evening survey, a biologist takes photos of the potential nesting site and scores the waterfall for nesting habitat.

GREAT GRAY OWL

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 surveys for great gray owls, including in Region 2.

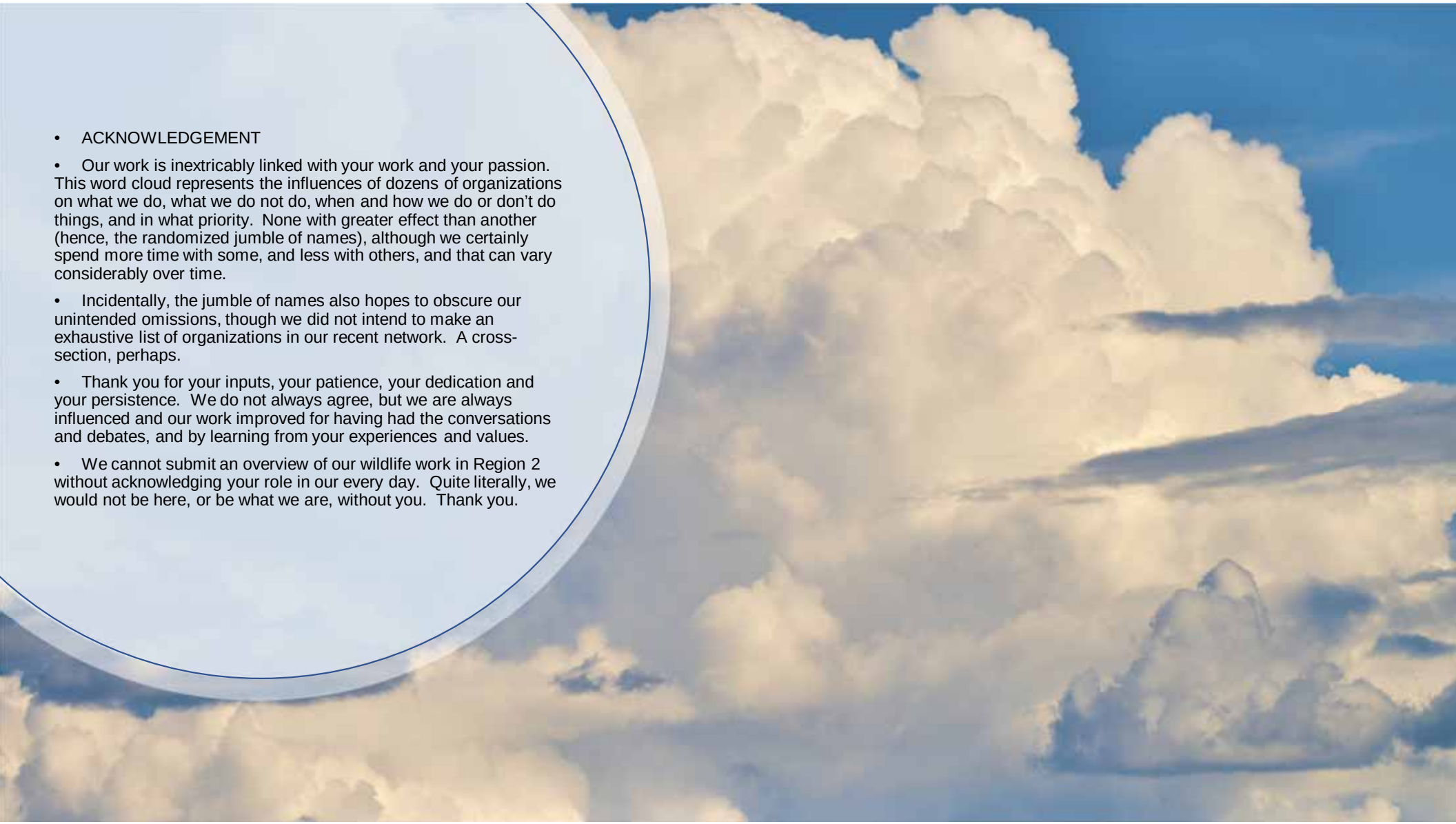
Great Gray Owl with prey on the Blackfoot-Clearwater WMA, on May 4, 2019.

NORTHERN BOG LEMMING

Prior to her retirement, 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.

A northern bog lemming visits a scar board under a game camera in Big Hole Valley fen, in Region 3. Right: Bog lemming habitat on the Blackfoot-Clearwater WMA in 2015.

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 will be completed in 2021.



- ACKNOWLEDGEMENT
- Our work is inextricably linked with your work and your passion. This word cloud represents the influences of dozens of organizations on what we do, what we do not do, when and how we do or don't do things, and in what priority. None with greater effect than another (hence, the randomized jumble of names), although we certainly spend more time with some, and less with others, and that can vary considerably over time.
- Incidentally, the jumble of names also hopes to obscure our unintended omissions, though we did not intend to make an exhaustive list of organizations in our recent network. A cross-section, perhaps.
- Thank you for your inputs, your patience, your dedication and your persistence. We do not always agree, but we are always influenced and our work improved for having had the conversations and debates, and by learning from your experiences and values.
- We cannot submit an overview of our wildlife work in Region 2 without acknowledging your role in our every day. Quite literally, we would not be here, or be what we are, without you. Thank you.

We hope we've conveyed the gist of our recent and upcoming efforts in Region 2.

They are efforts on your behalf. Let us know if we missed mentioning something that is important to you. Or, if you'd like more information on any of the topics we've touched on our email is fwprg22@mt.gov

Keep your thoughts to yourself if you're thinking that the typical Region 2 buck is crossing the Clark Fork!

It's a New Year. Have a happy one!

The End. *Great Blue Heron and fish, Tower Street Conservation Area, Missoula, 2021.*