Montana Fish, Wildlife & Parks
Region 2 Wildlife Quarterly

September 2017

Black bear feeding on chokecherries along Hoover Creek, August 19, 2017.

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

Find the Quarterly online at fwp.mt.gov/regions/r2/WildlifeQuarterly

Region 2 Wildlife Staff

Liz Bradley, Wildlife Biologist, Missoula-West, lbradley@mt.gov, 406-542-5515
Dave Dickson, Wildlife Management Areas Maintenance, ddickson@mt.gov, 406-542-5500
Kristi DuBois, Wildlife Biologist, Nongame, kdubois@mt.gov, 406-542-5551
Julie Golla, Wildlife Biologist, Upper Clark Fork, jgolla@mt.gov, 406-381-1268
Scott Eggeman, Wildlife Biologist, Blackfoot, seggeman@mt.gov, 406-542-5542
James Jonkel, Bear and Cougar Management Specialist, jajonkel@mt.gov, 406-542-5508
Kendra McKlosky, Hunting Access Coordinator, kmcklosky@mt.gov, 406-542-5560
Rebecca Mowry, Wildlife Biologist, Bitterroot, rmowry@mt.gov, 406-363-7141
Adam Sieges, Wildlife Management Areas Maintenance, 406-693-9083
Tyler Parks, Wolf-Carnivore Management Specialist, tparks@mt.gov, 406-542-5500
Tyler Rennfield, Conservation Specialist, trennfield@mt.gov, 406-542-5510
Brady Shortman, Wildlife Management Areas Maintenance Supervisor, bshortman@mt.gov 406-693-9083
Mike Thompson, Regional Wildlife Manager, mthompson@mt.gov, 406-542-5516
Bob White, Wildlife Management Areas Maintenance, 406-542-5500
Bob Wiesner, Cougar and Bear Management Specialist, 406-542-5508

Statewide Research Staff Housed at Region 2 Headquarters:
Nick DeCesare, Wildlife Biologist, Moose Research Project, ndecesare@mt.gov, 406-542-5500
Ben Jimenez, Research Technician, bjimenez@mt.gov, 406-542-5500

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

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.

Bear Country

By its very size, strength and beauty, the grizzly represents an awesome spectacle. Montana has the same characteristics.

- An argument offered by school children who voted the grizzly Montana's state animal, in 1983.

Grizzly bear in the Blackfoot. Photo by Kristi DuBois, FWP.

Bears, whether grizzly or black, challenge the very concept of wildlife management in West-central Montana.

Traditionally, wildlife finds favor when wildlife makes itself scarce. When "wild" means out of sight, and preferably reclusive. When wildlife viewing means going to find wildlife, not the other way around.

Bears challenge that model, and always have. They demonstrate a remarkable ability to live among people, often without people knowing it. And like neighbors everywhere, there is tolerance, mixed with conflict.

As long as there are bears in Montana, there will be a need for bear managers like FWP Specialists James Jonkel and Bob Wiesner in Region 2.

Time with Jamie is time with the bear, we swear. It takes people who know bears, and who know people, too. People who speak the language respected by both man and beast.

This issue of the Quarterly offers a glimpse into the activities of people in West-central Montana who are constantly learning and practicing the terms of coexistence.

Bob Wiesner handles an immobilized, fall cub grizzly (left).

Eric Graham checks vital signs of an immobilized adult before fitting a radio collar on its neck (below).

Every year, FWP Wildlife Specialists in Region 2 participate in capturing and collaring adult female grizzly bears, as part of Montana's protocol for monitoring survival and other vital rates, which are used to estimate the population trend.

Blackfoot grizzlies photographed by Alex Badyaev.

Tracking the Grizzly Population

In 2016, FWP researchers Cecily M. Costello, Richard D. Mace and Lori Roberts published a report entitled, *Grizzly Bear Demographics in the Northern Continental Divide Ecosystem, Montana: Research Results (2004-2014) and Suggested Techniques for Management of Mortality.*

A principal finding of that report was that the rates of births and deaths among radioed male and female grizzly bears can be used in a model to estimate the trend of the grizzly bear population. Radios must be deployed on a representative sample of adult female and male bears across the entirety of the Northern Continental Divide Ecosystem, of which the Blackfoot Watershed in Region 2 (including the Clearwater) comprises its southern extreme.

Between May and July 2017, Jonkel's team trapped five male grizzlies in Region 2 as their latest contribution toward the larger FWP monitoring effort. One of the five bears was fitted with a GPS collar; the other males were captured and released incidentally while hoping to capture and collar a female.

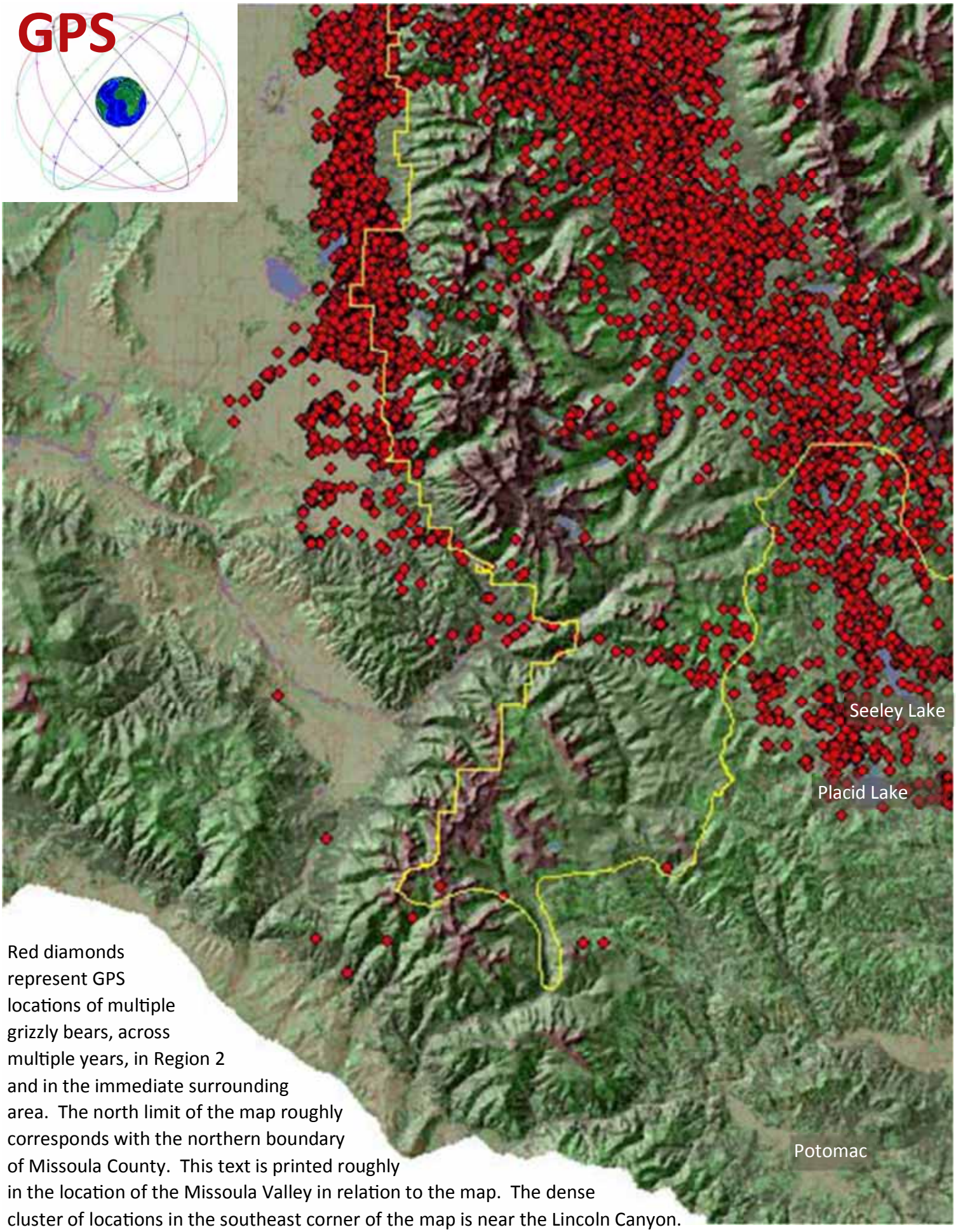
This spring, four additional male grizzlies, which were captured and collared last year, dropped their collars. All four collars were retrieved and the GPS locations downloaded. These bears had been instrumented with GPS collars in conjunction with a grizzly/black bear project that began in May 2015. Brittani Johnson, a graduate student at Montana State University, is studying electric fence permeability to bears and the impacts of electric fence on grizzly bear movements and behavior in the Blackfoot Watershed.

One additional female grizzly bear, wearing an ear transmitter, is also being tracked on a weekly basis. This female was captured in July 2016, and was re-instrumented with an ear transmitter rather than a neck collar because of a wound on its neck.

GPS location polygons for 8 grizzly bears in the Lincoln area from 2006-2010. Perhaps most striking is the great amount of overlap among the individual bears, which creates the additional shades of color; however, it is possible to tease out individual home ranges by training your vision where the location totals are depicted for each bear.

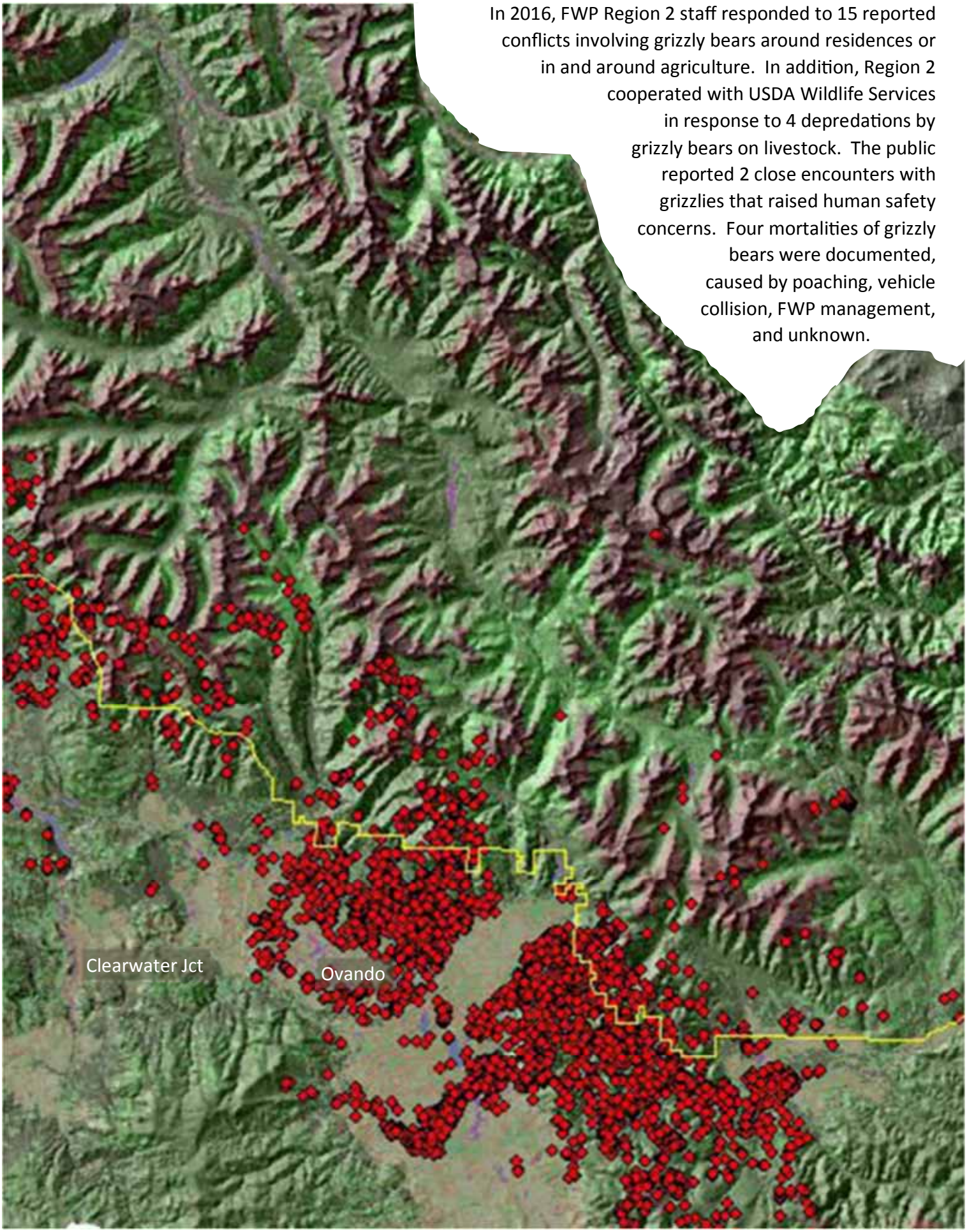
About 60 grizzly bears live in the Blackfoot-Clearwater Watershed.

- James Jonkel, FWP Region 2 Bear Specialist, 2017



Red diamonds represent GPS locations of multiple grizzly bears, across multiple years, in Region 2 and in the immediate surrounding area. The north limit of the map roughly corresponds with the northern boundary of Missoula County. This text is printed roughly in the location of the Missoula Valley in relation to the map. The dense cluster of locations in the southeast corner of the map is near the Lincoln Canyon.

In 2016, FWP Region 2 staff responded to 15 reported conflicts involving grizzly bears around residences or in and around agriculture. In addition, Region 2 cooperated with USDA Wildlife Services in response to 4 depredations by grizzly bears on livestock. The public reported 2 close encounters with grizzlies that raised human safety concerns. Four mortalities of grizzly bears were documented, caused by poaching, vehicle collision, FWP management, and unknown.



Bear scratches on aspen trees (at left) are often associated with bears climbing up to eat the swollen and nutritious buds in the spring, or climbing for sanctuary or escape. Less often, claw marks on aspen are associated with marking behavior. These claw marks on aspen were photographed in the foothills north of Ovando.

Why?

Why does the bear rub in the woods?

"I've always thought of rubbing as a marking, territorial display," says Jonkel. "They're leaving their calling card. And, males seem to use them more in breeding season when they're crossing other territories looking for mates."

Unlike most of us, who'll never observe a bear rubbing on a tree, post, or most anything else that offers resistance, he's personally observed bears rubbing, and bears coming behind the first one, and the second, to rub, seemingly in response.

"They definitely behave as if they're gathering information at rub sites. They sniff and I've seen them step hard in the footsteps of a bear that rubbed earlier, grinding their feet as if to rub-out the other bear."

After hanging with Jamie, we've all become more aware of the claw and bite marks that bears leave on trees and posts, way more often than we used to notice them. Typically, bite marks can be seen running horizontally across the tree or post. Claw marks usually run vertically.

"We collect hairs that the bears leave behind when they rub, which provides us the opportunity to improve our bank of DNA data for the identification of individual bears. And we use posts, and sometimes set posts, to attract bears to our remote camera sets, which helps us document travel routes and range extensions."

DNA collected from rub trees and other hair collection sets in the Northern Continental Divide Ecosystem (NCDE) was used to establish a baseline estimate of grizzly bears, in ground breaking work led by Kate Kendall of the U. S. Geological Survey in Glacier National Park (retired). Jonkel's team and others working in the NCDE are collecting the data that allows FWP and partners to assess whether the bear population is increasing, decreasing, shrinking or expanding in relation to that baseline estimate.

Blackfoot Community

It would be hard to imagine a community of people who derive deeper satisfaction from wildlife than the ranchers whose lands grow it alongside their livestock and crops. All they require in return is the opportunity to make a good life for themselves and promise for the future. FWP's role is as a partner, in the role of supplying wildlife management expertise and some of the wherewithal to help landowners develop solutions for conflicts as they arise and can be foreseen.

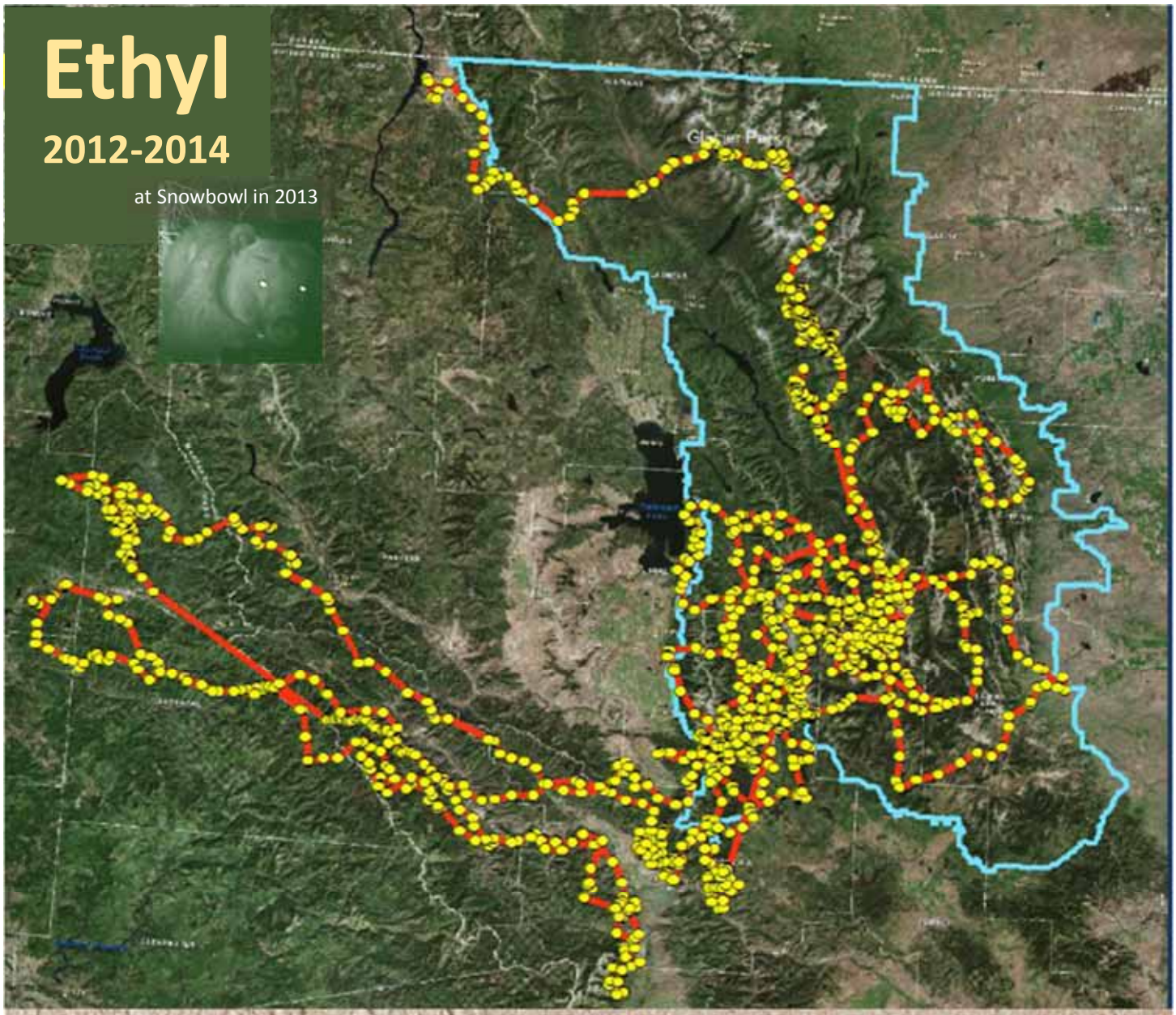
Eric Graham is a Wildlife Technician supported by the Blackfoot Challenge. Eric has spent his life in western Montana acquiring and practicing the skills needed to help wildlife and people live better together. A hard worker and a practical man, Eric is a perfect fit with the Challenge, which is a landowner-based group whose mission is to *coordinate efforts that conserve and enhance the natural resources and rural way of life in the Blackfoot Watershed for present and future generations.* A friend of wildlife, of landowners, and of FWP.

It's hay barley, tall enough to hide these bucks when they're not jumping to scout their next lunge ahead. Increasingly, grizzlies have learned to feed and live in this particular crop, and in crops nearby, digging day beds in the cool ground to escape the midsummer heat. A variety of electric fencing options are being tested in the Blackfoot to guide grizzlies around conflict areas, which can help bears avoid making mistakes. "It's not something you do and then walk away," Jonkel says. "Every day is a new day when we'll need to watch and adapt."

Blackfoot grizzly photo by George Smith.

Ethyl

2012-2014



at Snowbowl in 2013

Type "Ethyl grizzly bear" in your Internet browser to access published stories of this famous, wide-ranging bear. Ethyl was a radio-collared female grizzly that journeyed down to the Missoula area from Bigfork and denned just outside of Missoula in the fall of 2012. In March of 2013, she emerged from her den on Wisherd Ridge and journeyed back to the Flathead Valley. In September of 2013 she returned to the Missoula Valley where she spent a month in the vicinity of the Snowbowl Ski Area. From there she began an incredible journey that took her east to the Coeur d'Alene Mountains in North Idaho and then south into Idaho's Clearwater National Forest. Ethyl was the first grizzly documented to den south of Interstate 90, near St Regis, since the 1930's.

The 2,800-mile track of this grizzly bear is useful for helping FWP identify and consider travel routes for bears and other wildlife. While too much might be made of a single bear's travels, it's remarkable how many species and individuals follow similar routes as they read the lay of the land and navigate passage. And while few, if any, other bears would make this entire journey, it's likely that some bears would use the portions of this mapped route within their local ranges.

Uncollared adult male grizzly in the Rattlesnake Wilderness

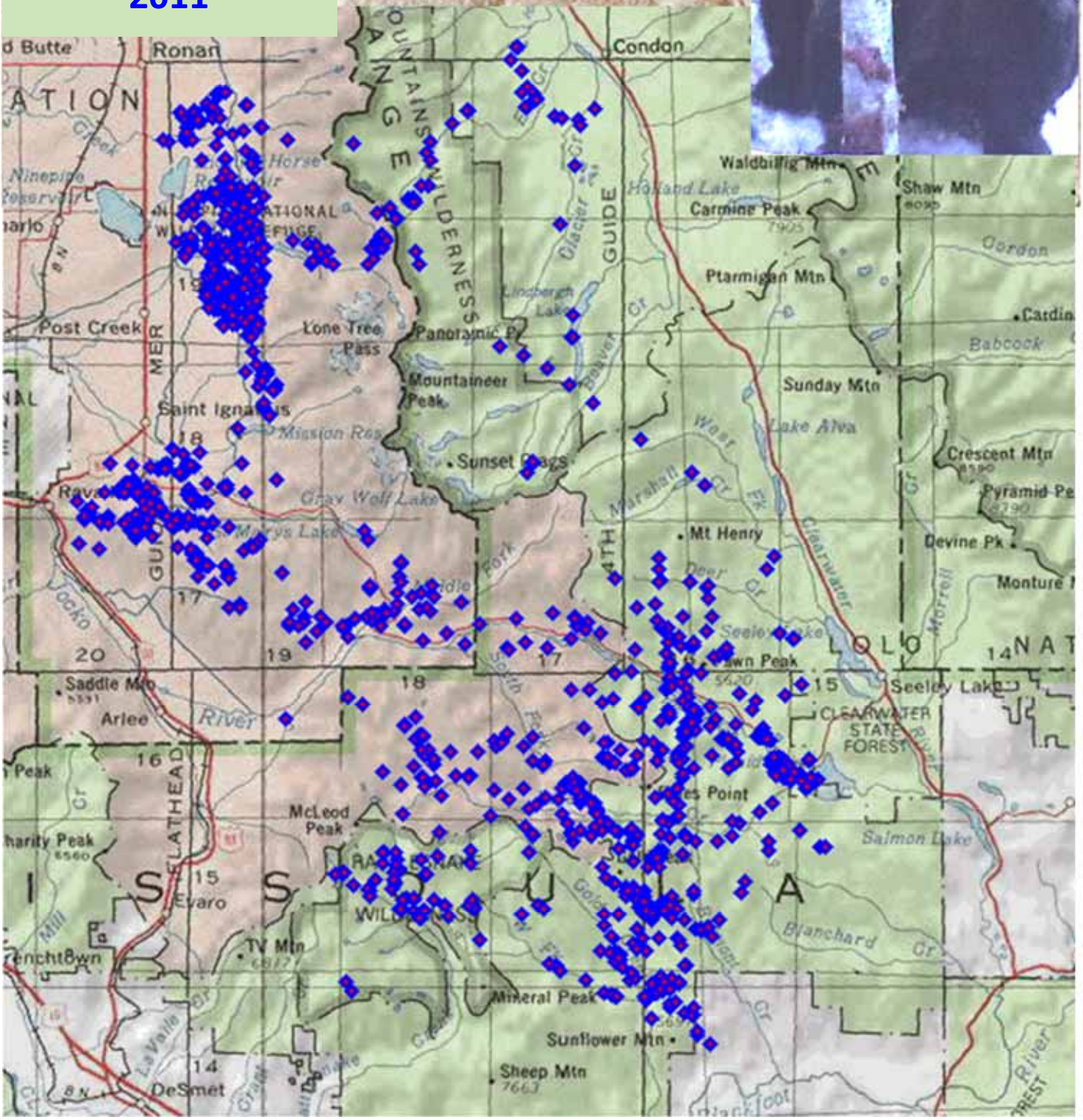
Legendary Bears

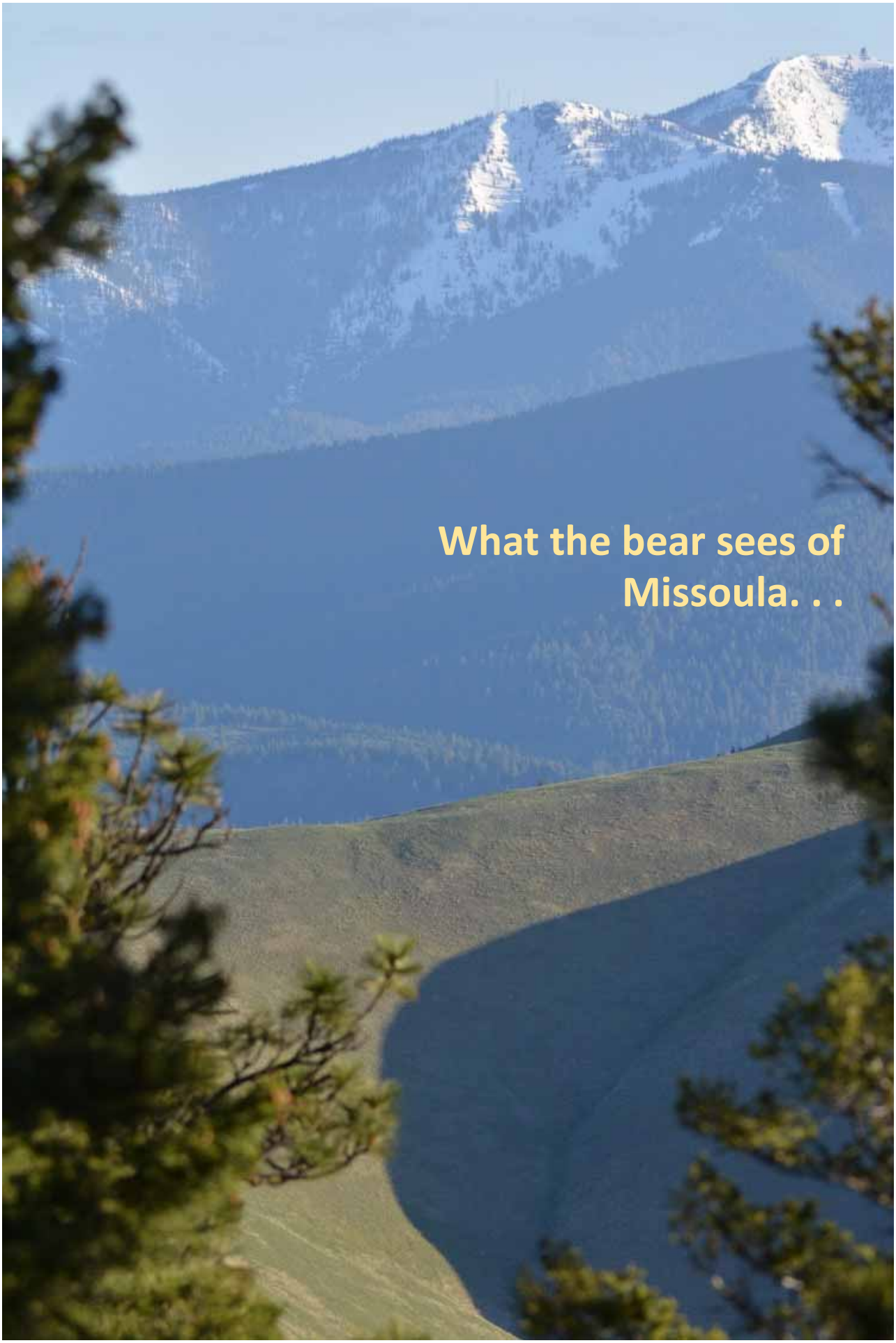
Eight-ball was a sub-adult male grizzly that Jonkel's team captured for population monitoring purposes in the spring of 2011. They retrieved his collar in the den after the winter, obtaining six months of movement data. His movements provide a glimpse of grizzly movements along both sides of the southern Mission Mountains, including the Rattlesnake Wilderness.

Eight-ball

2011

Uncollared bear in Gold Creek, 2017. Photo courtesy Swan Valley Connections and The Nature Conservancy.




What the bear sees of
Missoula. . .

The *Living With Bears* Project

Western Montana, as many Montanans know it, is soccer, gymnastics, biking and gardening. And, we sometimes take for granted that this modern lifestyle is set in a surprisingly wild place, where it's still possible for a person—or a bear—to look overtop the development and inhabit a land that remains in large part undeveloped, if not unchanged.

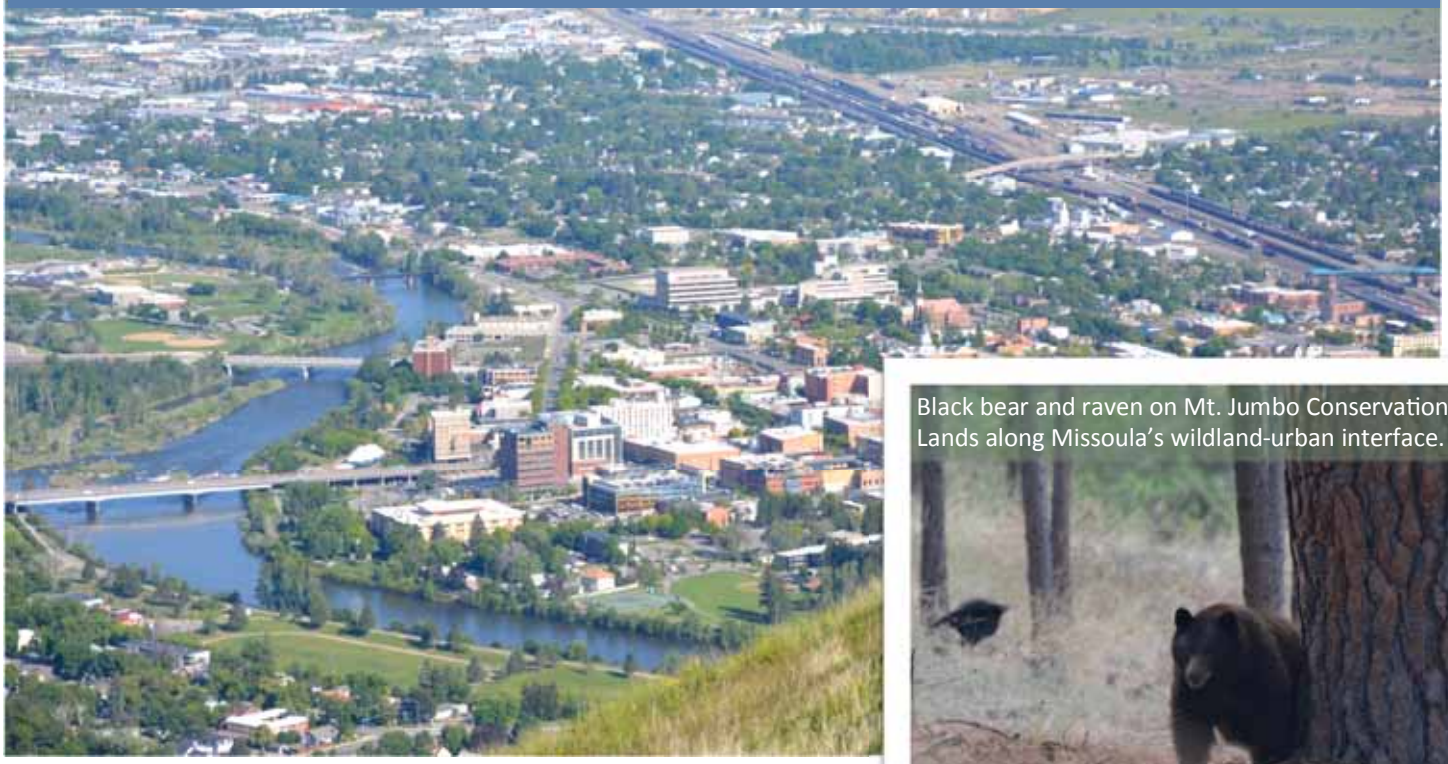
FWP Region 2—Jonkel's team of Wildlife Specialists, along with FWP game wardens and biologists—invest countless hours and resources, almost every day, toward making room for wildlife around the "mine fields" of human development that wild animals encounter in their travels. Jonkel, in particular, has been a magician at cultivating partnerships and relationships with homeowner's associations, neighborhood networks, nonprofit organizations, other governmental agencies and boards, schools and universities, refuse collection businesses—just about anyone with an interest in getting involved.

Learning to live with wildlife by eliminating or reducing human-food rewards is an ethic and a lifestyle that's taking hold in western Montana. In the fall, black bears are keyed-in to chokecherries ripening along stream bottoms, drawing bears in close proximity to home-sites, often well within subdivisions and longer established neighborhoods. In order to keep bears from ranging beyond the natural berry crops in the thick riparian corridors, partners help harvest apples on the wildland-urban interface. They offer solutions to homeowners for minimizing bears' exposure to garbage, using a variety of strategies. They help residents devise innovative ways to provide seed at their bird feeders, and to protect their chickens and bee-yards from depredations by bears. These and other efforts require continual education and information sharing to help residents new to the area understand the issues and needs.

When preventative measures fail, whether due to the failure of people to work together, or due to the behaviors of the occasional "bad bear," FWP is called upon to remove habituated bears, sometimes lethally. While the removal of habituated bears is critical to the success of the conflict prevention program overall, FWP is careful to remove bears as a last resort, only after property owners have secured the attractants on their properties and given the offending bear a fighting change to move on and remain in the wild.

For more information on living with bears and other wildlife, go to *missoulabears.org*.

. . 'til the bear crosses the ridge.



Black bear and raven on Mt. Jumbo Conservation Lands along Missoula's wildland-urban interface.

Estimating Black

Black Bear Harvest Research & Management in Montana

2011 Final Report

Richard D. Mace and Tonya Chilton-Radandt

Montana Fish, Wildlife & Parks

Bear Populations

In 2001, FWP began a research study to better assess black bear harvest rates and population densities (Mace and Chilton-Radandt 2011).

In FWP Region 2, the Garnet Mountains (Hunting District 292) were selected as one of 11 areas across Montana for sampling the density of black bears.

Locations of sampling stations in the Garnets were randomly generated and crews of FWP employees were charged with finding and setting hair traps as close to each random sampling location as practical.

Each sampling station consisted of a stinking liquid bait, encircled by a strand of barbed wire. It was intended that bears would scoot under the wire to reach the bait, leaving hair on the barbs.

About one-two weeks after placing the baits, FWP employees revisited the hair traps, collected hairs from the barbs, and removed the contraptions from the field. Hair samples were sent to a laboratory for identification of the species and individual.

In the Garnets, an estimate of 169 black bears was generated, with 90% confidence that the actual number of bears would lie between 114 and 280. The Garnets sampling area encompassed 800 square miles, yielding an average density of 1 black bear per 5 square miles.

The mean population estimate for Montana was 13,307 black bears. The statewide average density was about 1 bear per 3 square miles. Highest densities were found in northwest Montana.

In related studies, Mace and Chilton-Radandt (2011) found an average litter size of 2.08 cubs per litter, and an average reproductive interval of 2.2 years.

Appendix 1E. Location of DNA sampling HD 292 (the Garnet Mountains) during 2004-5, with buffer. Yellow points represent hair-traps visited by bears and red points were traps not visited.

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