Montana Fish, Wildlife & Parks

Region 2 Wildlife Quarterly

May 2019

Gray wolf radio-collared on October 27, 2015.

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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

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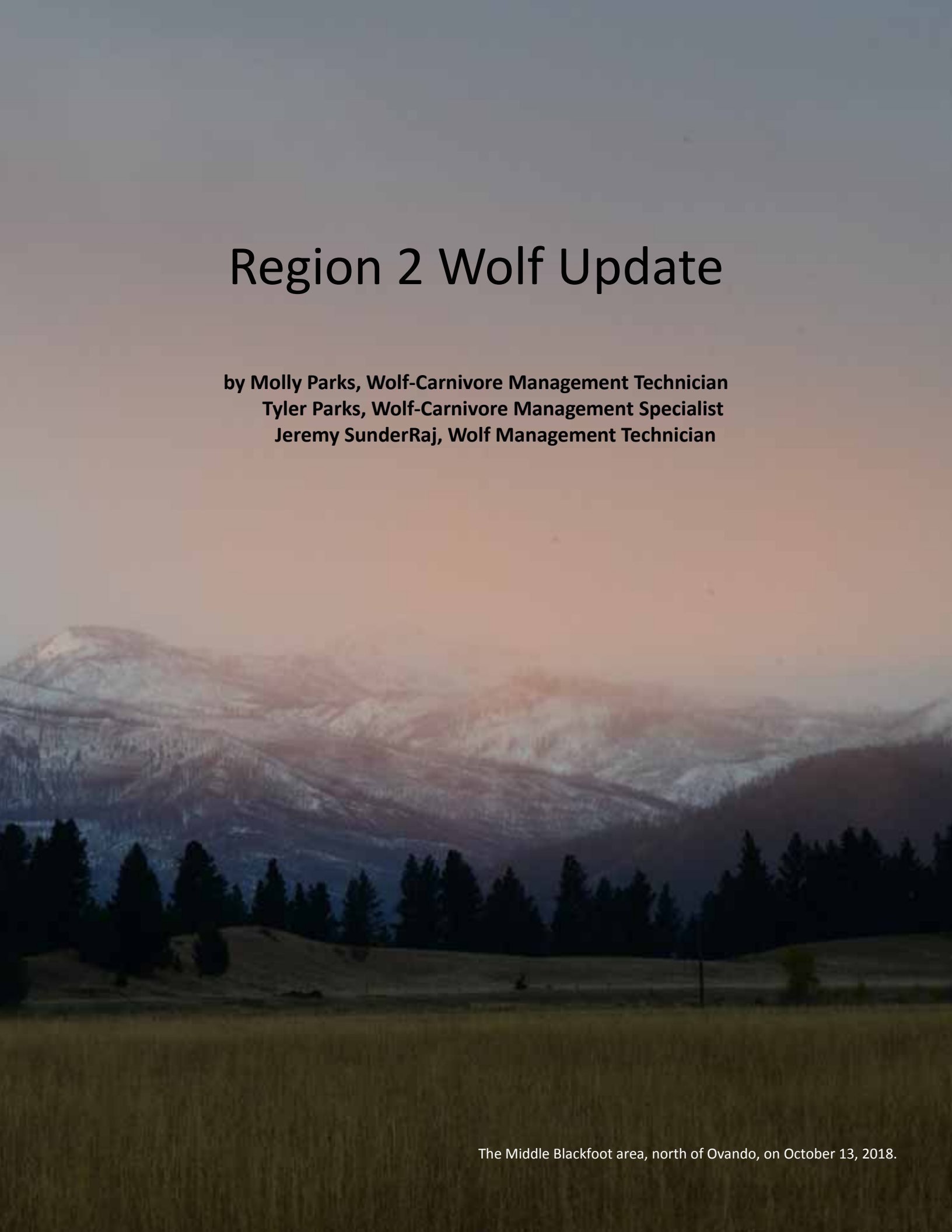
The Region 2 Wildlife Quarterly is a product of Montana Fish, Wildlife & Parks; 3201 Spurgin Road; Missoula 59804. Its intent is to provide an outlet for a depth of technical information that normally cannot be accommodated by commercial media, yet we hope to retain a readable product for a wide audience. 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.

Region 2 Wolf Update

by Molly Parks, Wolf-Carnivore Management Technician
Tyler Parks, Wolf-Carnivore Management Specialist
Jeremy SunderRaj, Wolf Management Technician



The Middle Blackfoot area, north of Ovando, on October 13, 2018.

Montana Wolf Program

Wolf recovery in Montana began in the early 1980s. The federal recovery goal of 30 breeding pairs for 3 consecutive years in the Northern Rocky Mountains (NRM) of Montana, Idaho and Wyoming was met by 2002. Montana's state Wolf Conservation and Management Plan of 2004 was based on the work of a citizen's advisory council and was approved by the United States Fish and Wildlife Service (USFWS). The wolf population in the NRM tripled between the time recovery goals were met and when wolves were ultimately delisted by congressional action during 2011. At present, Montana Fish, Wildlife & Parks (FWP) implements the 2004 state management plan using a combination of sportsman license dollars and federal Pittman-Robertson funds (excise tax on firearms, ammunition and hunting equipment) to monitor the wolf population, regulate sport harvest, collar packs in livestock areas, coordinate and authorize research, and direct problem wolf control under certain circumstances.

-Montana Fish, Wildlife & Parks. 2018. Montana Gray Wolf Conservation and Management 2017 Annual Report. Montana Fish, Wildlife & Parks. Helena, Montana. 87 pages.

http://fwp.mt.gov/fishAndWildlife/management/wolf/

The alpha male wolf from the Divide Creek pack that was captured and radio collared by FWP October 15, 2015.

A gray wolf fitted with a VHF collar September 9, 2016.

Why Radio-Collar?

Radio-collars play a vital role in monitoring our wolf population in Montana. So how does FWP radio-collar wolves? With great effort. Here in Region 2, we deploy most of our radio-collars by live trapping wolves. We begin our trapping efforts in spring and continue until snow arrives in fall. This intensive process begins with scouting. Using wolf location data from previous years, combined with any new wolf reports, our team begins by locating roads and trails travelled by wolves.

Finding Wolves for Radio-Collaring

The crew drives endless dirt roads, scours the surface for the slightest disturbance that may be a wolf track, and investigates any potential wolf scat that may be masquerading as a stick or lichen. Once a section of road or trail with concentrated wolf sign is detected, the next step is setting the trapline. FWP carefully selects trap sites to minimize risks to the public, along with risks to captured wildlife. This means choosing trap sites that aren't too steep, exposed, or busy with public activity. Once the trap sites are selected, the traps are set using scent-free gloves and tools, and blended to match the surroundings with pine needles, leaves, etc. Branches, rocks, and pinecones are then strategically positioned to guide the wolf's foot onto the trap and a lure is selected and placed behind the trap to entice the wolf to investigate the set. Once the trapline is set and signed to alert anyone recreating in the area, the trap checks begin.

Tyler Parks selects a trap site (left), beds the rubber-padded trap (below), and blends the surface atop the trap with its surroundings (right).

Checking Traps

For most of the season, daily temperatures are hot, and traps are checked twice daily to reduce risks to captured animals. However, wolves are most active at night, so the morning trap checks are the most likely to yield a wolf capture. Every morning, FWP drives the trapline, investigates any new wolf tracks or scat, fixes any sets that have been disturbed, and hopes to arrive at a trap site with a catch like this 90-pound gray male out of the Tepee Point wolf pack (left).

Handling Captured Wolves

When a wolf is captured, the collaring process begins. FWP estimates the weight of the wolf, chemically immobilizes it, and frees the foot from the trap. Monitoring of vital rates begins immediately, as the crew works quickly to fit a GPS or VHF radio-collar, insert a microchip, collect biological samples including blood and hair, and take measurements and photos of teeth for aging the wolf. An overall assessment of body condition, gender, and breeding status is also conducted before the wolf begins to recover. At this point, the crew supervises the wolf's recovery from a distance, observing the animal until it leaves the capture area. Upon completion of a wolf capture, FWP may stay an extra few days to attempt capture of a second individual from the wolf pack, but ultimately a capture means pulling the trapline and moving on to a new area and new wolf pack to start the process again.

Stephen Speckart, Liz Bradley and Molly Parks draw a blood sample from a captured wolf (right).

Left: Jeremy SunderRaj checks the body temperature of a chemically immobilized wolf. The animal is blindfolded to reduce stress until it is ready to be released. A radio collar is fitted around its neck.

Below and Bottom Right: FWP personnel look at the amount of tooth wear to help determine the age of the captured wolf. Little to no wear on the incisors and canines indicates that the wolf is a yearling or a sub-adult.

Bottom Left: A gray breeding female caught near Deer Lodge, MT out of the Flint Creek Pack in 2013. The excessive tooth wear indicates that the wolf is an adult, possibly around 6 years old.

The alpha female from the Trapper Peak wolf pack received a GPS collar June 5, 2018.

Photo by Eric Graham, Blackfoot Challenge.

Partnering to Minimize Conflicts

An important aspect of wolf management in Region 2 is proactive conflict prevention. FWP actively partners with livestock producers, non-governmental organizations, and other agencies like USDA Wildlife Services to prevent wolf-livestock conflicts. Because wolves and livestock often overlap on the landscape, proactive tools including fladry and range riding are utilized to minimize wolf-livestock interactions that may result injured livestock, depredations, and lethal wolf removal.

Fladry

Fladry (above) is an addition to a perimeter fence around livestock that consists of a rope or poly wire electric fence with closely spaced flags that flap in the wind to deter wolves from entering the area. While wolves are initially cautious around fladry, they often habituate to this tool and it is only effective for a short period of time. Furthermore, it is labor intensive to deploy over large areas. As such, it is most effectively used during calving season, where livestock are kept in small pastures or calving pens and calves are most vulnerable to depredation.

Range Riding

Range riding is a proactive tool that uses a range rider to increase livestock and wolf monitoring and increase human presence around livestock to deter wolves. Range riders observe herd behavior, identify sick or injured animals more susceptible to depredation, locate livestock carcasses for investigation and removal, and report changes in wolf activity in grazing areas. Ultimately, range riders provide real-time information for livestock producers via daily communication from the field to help inform livestock management decisions. In Region 2, FWP partners with the Blackfoot Challenge Range Rider Program to provide information on wolf activity in the valley. Range riders trained to use radio-telemetry can locate radio-collared wolves to identify high priority areas and focus their livestock monitoring efforts.

While radio-telemetry can be a helpful tool, it is important to note the wolves do not travel as a cohesive unit in the summer. Often a radio-collared wolf does not represent the pack's location and can provide a false sense of security if absent from the grazing area.

Wolf Numbers and Distribution

Wolves from the Inez wolf pack are located and counted from the an FWP fixed-wing aircraft January 16, 2017.

Montana

The primary means of monitoring wolf distribution, numbers, and trend in Montana is now "Patch Occupancy Modeling," or "POM." The POM method utilizes annual hunter effort surveys, known wolf locations, habitat covariates, and estimates of wolf territory size and pack size to estimate wolf distribution and population size across the state. POM estimates of wolf population size are the preferred monitoring method due to accuracy, confidence intervals, and cost efficiency. The most recently completed POM estimates for wolf population size were 961 wolves during 2015 and 851 wolves during 2016 (Fig. 1). Data have been gathered for 2017 POM estimates of wolf numbers and distribution, and analysis will take place during summer 2018. FWP is currently working with the University of Montana to refine POM by incorporating contemporary data (after initiation of a wolf hunting and trapping season) on territory and pack sizes derived with improved collar technology.

-Montana Fish, Wildlife & Parks. 2018. Montana Gray Wolf Conservation and Management 2017 Annual Report. Montana Fish, Wildlife & Parks. Helena, Montana. 87 pages.

http://fwp.mt.gov/fishAndWildlife/management/wolf/

For more background and detail on Montana's statewide wolf monitoring program and POM, please find the annual report at the online address above.

Region 2 Activities

By radio-collaring wolves via summer live trapping and winter helicopter captures, FWP can conduct aerial counts for collared wolf packs.

Winter track surveys combined with hunter reports also help FWP tabulate a minimum count of verified wolves in the region.

Minimum Numbers & POM Estimates of Montana Wolves

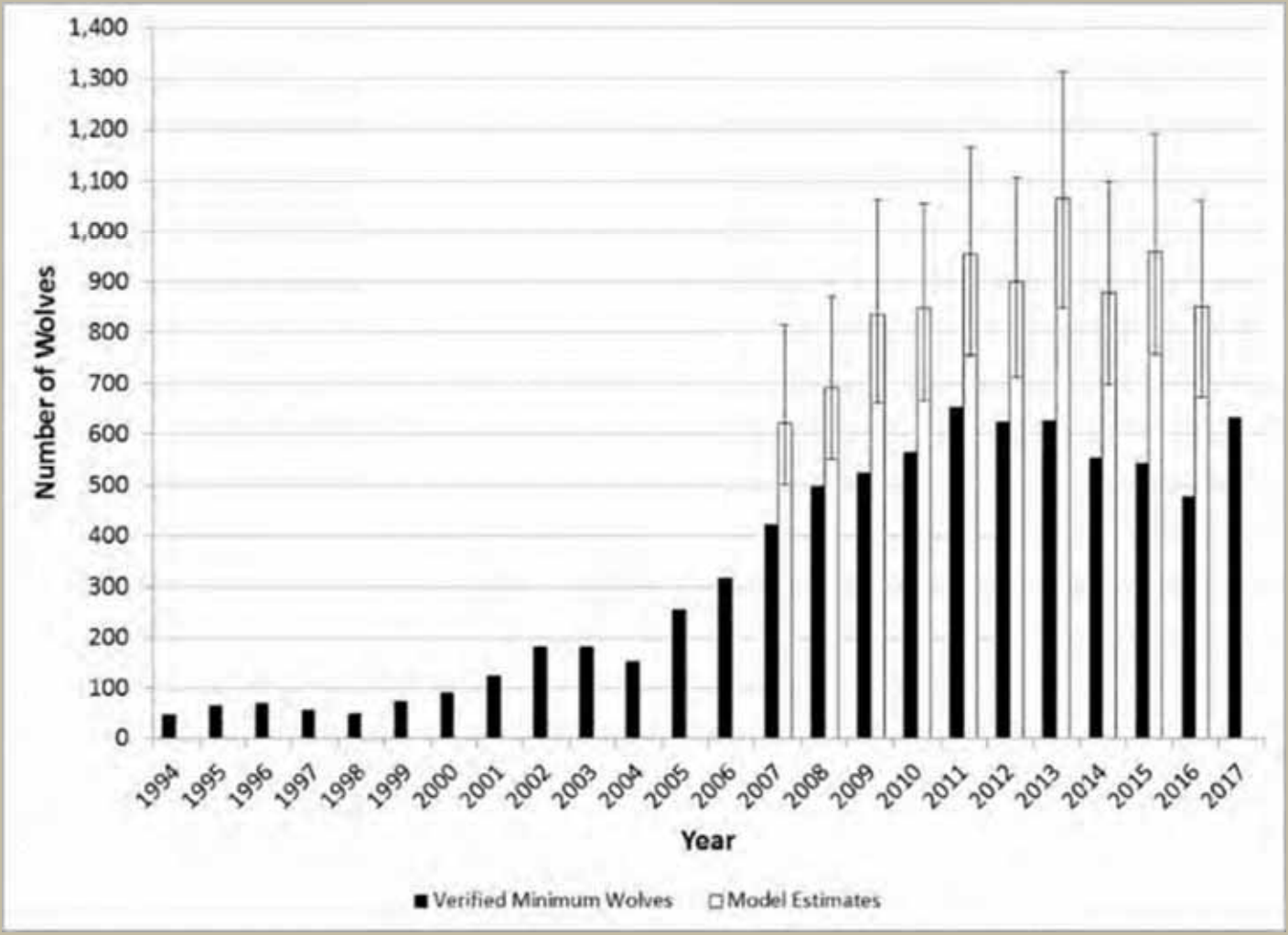
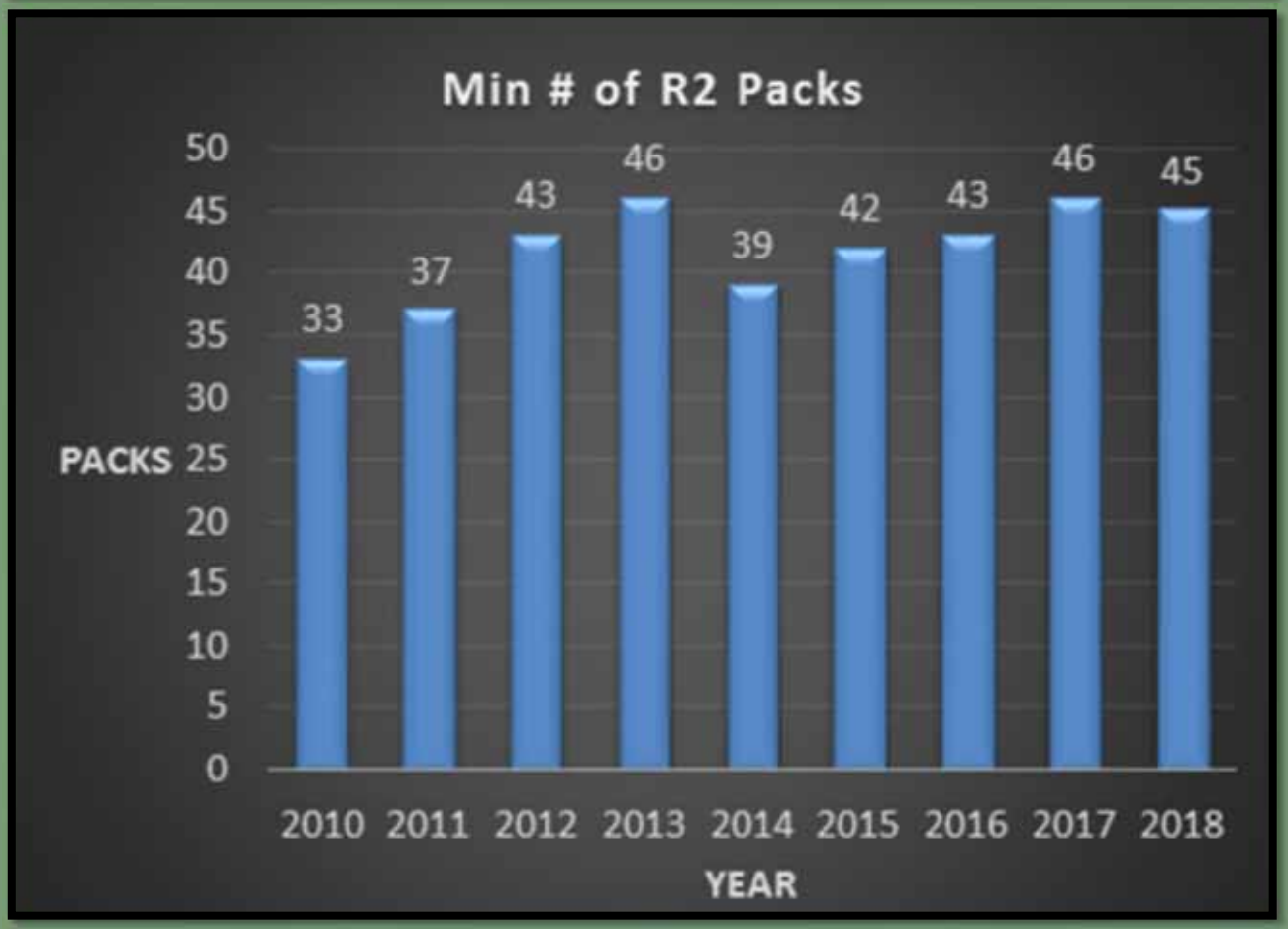
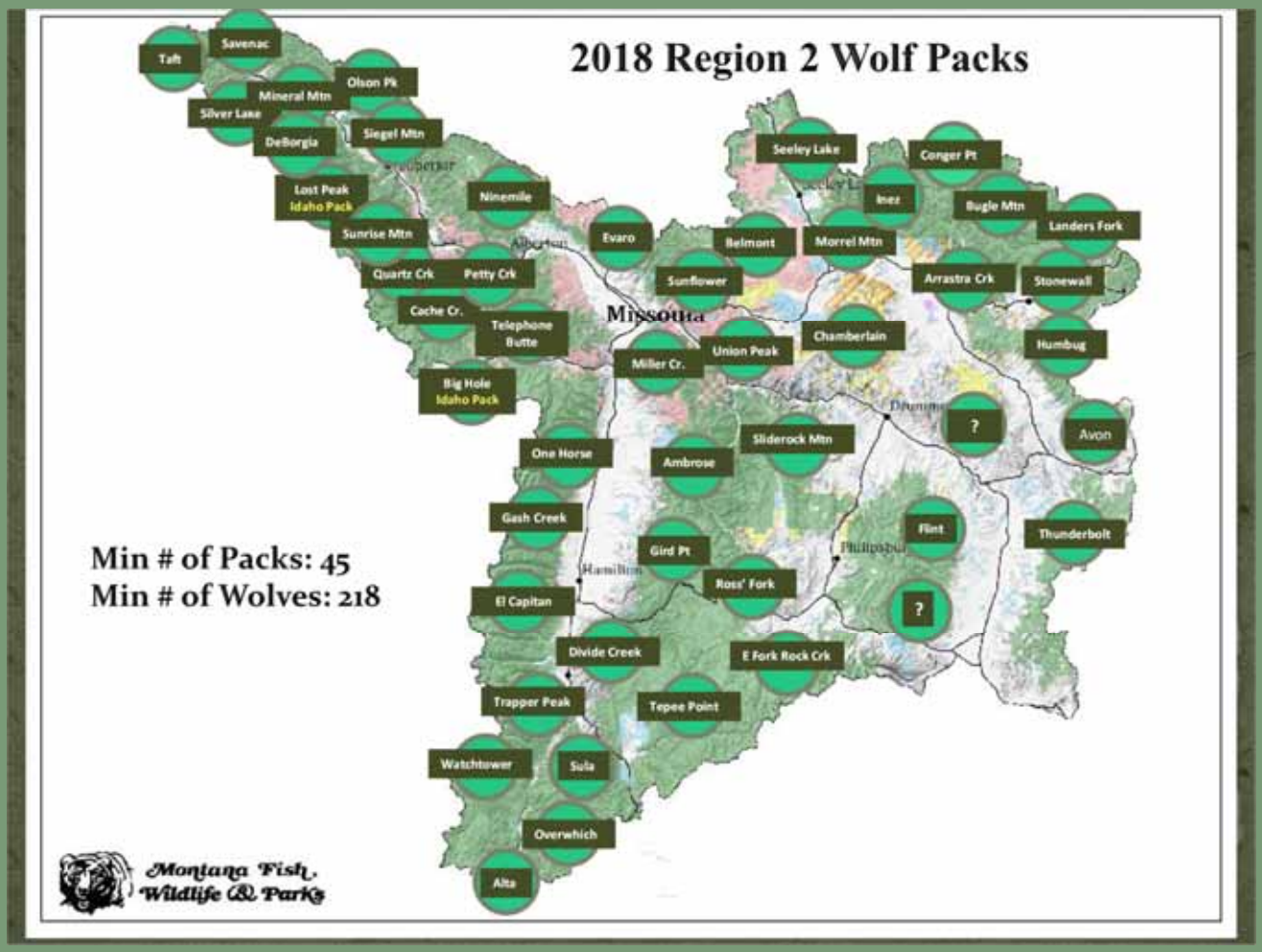


Figure 1. Verified minimum wolf counts from field reconnaissance (solid black bars) and estimates of the wolf population (outlined bars). Vertical lines at the tops of the outlined bars indicate the statistical confidence intervals around the estimates; for example, the wolf population estimate for Montana in 2016 is 851, with high confidence that the true number lies between 673 and 1,062. This chart is reprinted from the Montana Gray Wolf Conservation and Management 2017 Annual Report, which was published in Spring 2018 and is the most recent compilation available at this time. FWP will publish the 2018 annual report soon. Wolf population estimates—or Patch Occupancy Model (POM) estimates of the wolf population—lag one year behind the publication of the annual report because the POM estimate requires wolf observations made by deer hunters, and those data become available with the analysis of the statewide hunter harvest survey.

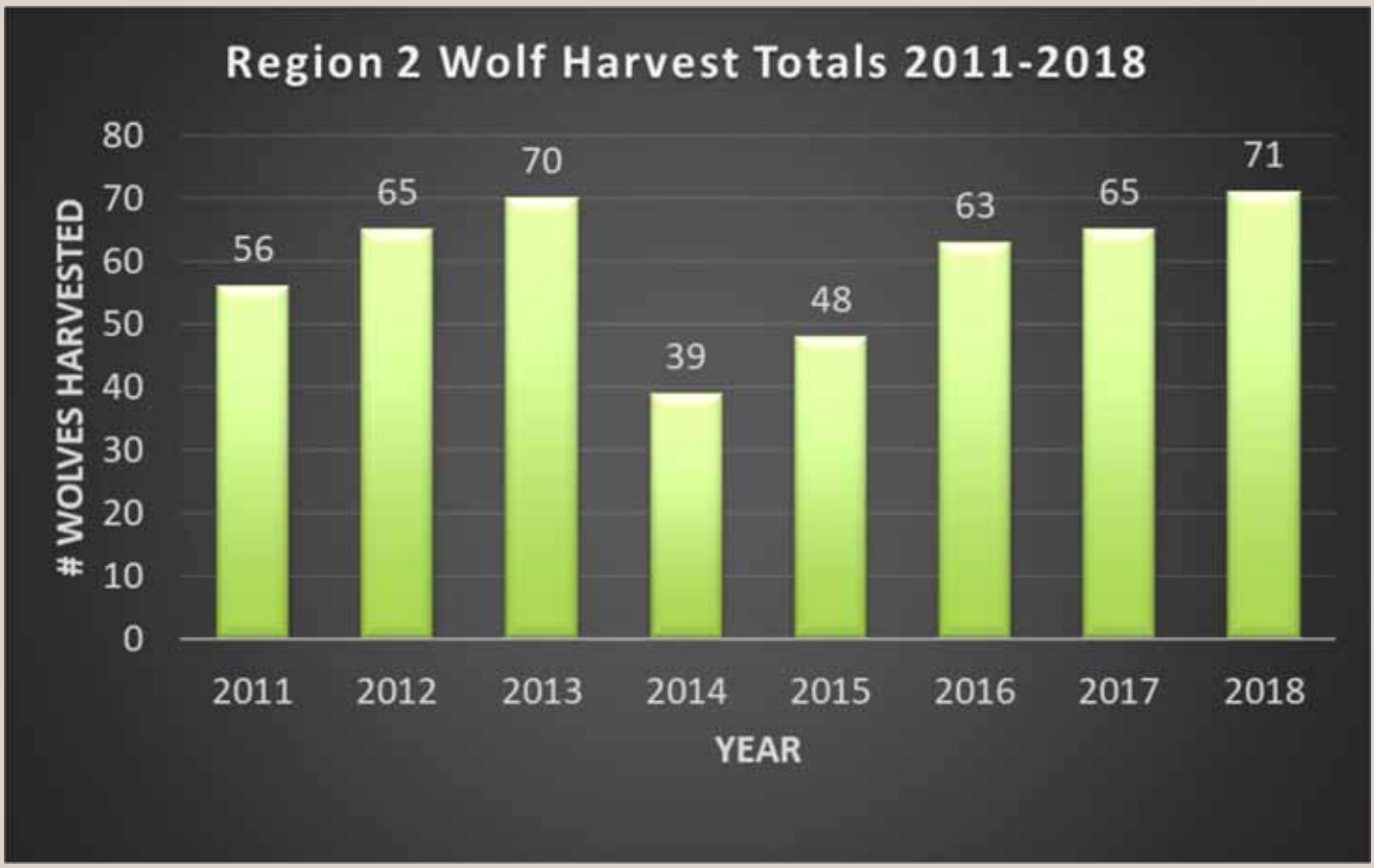
Minimum Counts of Wolves and Packs in Region 2



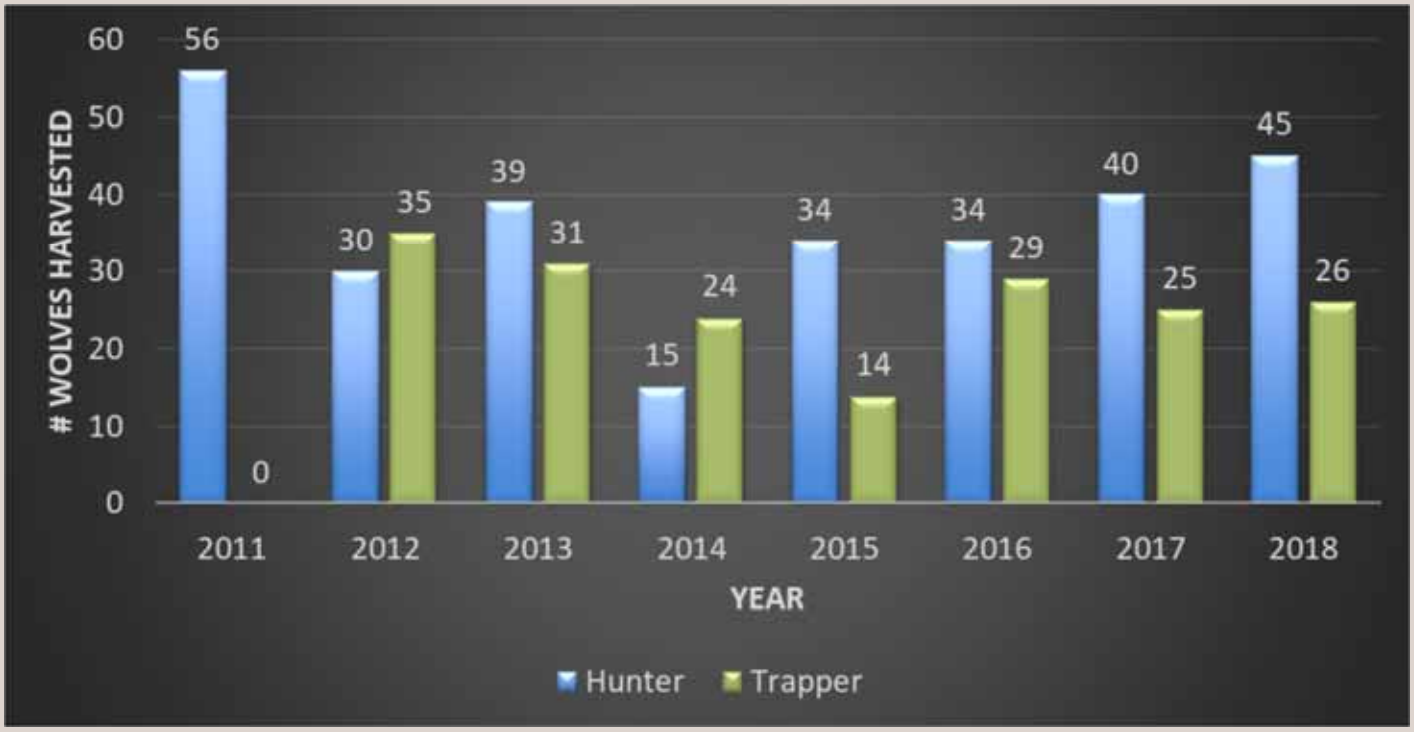
Wolf Pack Distribution in Region 2



Wolf Harvests in Region 2



Wolf Harvests by Hunters and Trappers in Region 2



Wolf Population Management

A recovered wolf population has supported hunting harvests since 2011; trapping was added in 2012. As can be seen in the graphs on the previous two pages, the annual wolf harvest by licensed hunters and trappers generally follows the annual trend in wolf numbers. When wolf numbers are high, wolf harvest tends to be high.

But, a closer apparent correlation exists between the annual wolf harvest and the numbers of wolf *packs* identified in Region 2. (Again, please refer to the graphs on the previous three pages.) And it stands to reason that as more or less of the landscape is occupied by wolves, which may be reflected by the numbers of territorial packs, the likelihood that hunters and trappers will encounter wolves should vary accordingly.

These data hint that harvest isn't driving wolf numbers in Region 2 at this time. It seems instead that harvest coincides with wolf numbers. A scientific publication by FWP's Nick DeCesare, Seth Wilson (Northern Rockies Conservation Cooperative), FWP Region 2 Biologist, Liz Bradley, and a list of FWP peers also found that "public harvest reduced the counts of depredation events in areas where conflict reoccurred, though with a modest predicted effect size of 0.22 fewer depredations/district-year, or 5.7 fewer depredation events statewide/year (8% of the annual average)." Their complete report may be found in the *Journal of Wildlife Management,* Volume 82: Number 74, pages 711-722.

The role that harvest seems to play is that it introduces a background level of wolf mortality that affects pack size and, therefore, the cumulative appetite of the pack for wild prey, such as elk and deer, and occasionally livestock. In this way, harvest combined with wolf social dynamics and predator-prey relations contribute toward the balance that we see on the landscape at this time. In any given local area, it may be a balance favored by some and not favored by others, be they wildlife or humans, and in any given local area that balance is dynamic and can be expected to vary over time. On a very broad scale, there seems to be a stability in wolf numbers and wolf harvests in Region 2, which paints a brighter picture than most people predicted from our various vantage points only a few years ago. Whether we expected wolves to grow unchecked or wolves to be extirpated, neither view has held true so far.

So it is that wolf population management is a new and evolving experience in Montana.

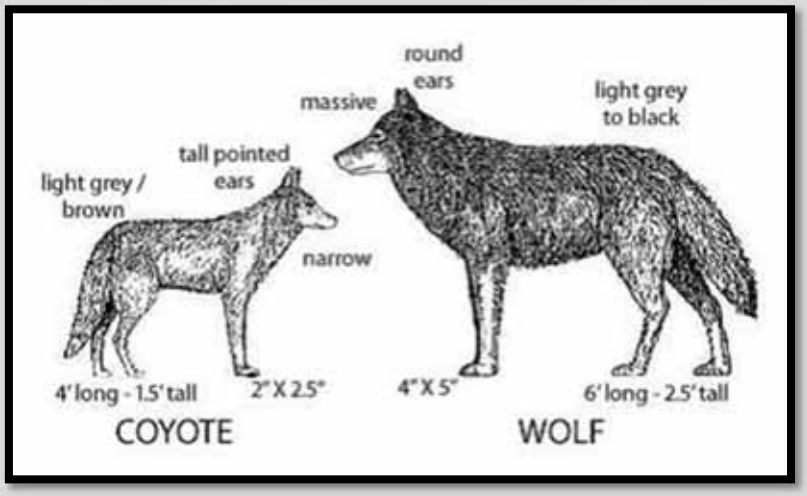
Region 2 wolf packs are most densely distributed west of Missoula along the I-90 corridor to Lookout Pass, and in the Blackfoot north of Highway 200. These are the portions of Region 2 where wolf presence in high-quality bear and lion habitat exerts a cumulative predation pressure on prey. In the Bitterroot, elk research by FWP's Kelly Proffitt and Ben Jimenez found that wolves played a minor role in predation on elk calves and that mountain lions were the principal predators on elk calves. In eastern Region 2, between Missoula, Avon and Butte, wolf removals by U.S.D.A Wildlife Services in response to confirmed livestock depredations are the primary factors limiting wolf occupancy and influence.

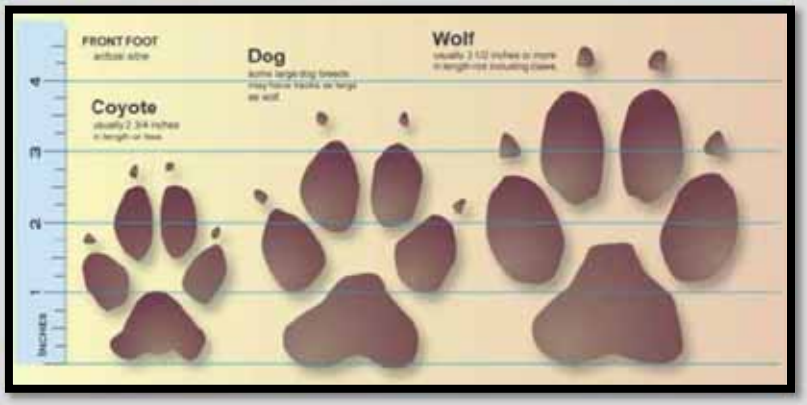
Hunters have harvested more wolves than trappers in Region 2 since 2015. Some hunters have become skilled in hunting wolves and enjoy testing themselves against such a secretive quarry. However, most hunters who purchase a wolf license only hope to encounter a wolf incidental to their other hunting pursuits.

Wolf trapping involves time and investment, and skills possessed by few. All wolf trappers in Montana must be certified by successfully completing an FWP (or Idaho Fish and Game) wolf trapping instructional course before setting a wolf trap. The certification class emphasizes ethics, preventing non-target captures of other wildlife, and avoiding places frequented by other recreationists. People who want to take steps to avoid wolf trapping activities can obtain valuable information about the rules and constraints imposed on wolf trappers by reading the FWP wolf trapping regulations posted on FWP's website or available from FWP regional offices and license agents.

Wolf Identification

A 70-pound black wolf pup (left) from the Inez wolf pack was caught by FWP and radio-collared in September 2012. He was the alpha male of the Inez wolf pack. Wolves range in color from grey (top) to black, though their coat becomes increasingly white with age.





This coyote (left) has a narrow muzzle and brown mottled coat, while the wolf (right) has a broad muzzle and grey/silver coat. The wolf is an alpha female that was caught and radio-collared in 2013. Wolves and coyotes can be harder to distinguish than a person might think, especially when seen at a glance in full winter coat.

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