Montana Fish, Wildlife & Parks
Region 2 Wildlife Quarterly

August 2016

Elk Hunting District 217
Mule Deer Research
Fisher Harvest
Deer "Tusks"

Technical Bulletin No. 5

More data/Science based

American kestrel at the Blackfoot-Clearwater Wildlife Management Area, July 2016.

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Hunting District 217*—A New HD with Special Regulations*

by the Region 2 Wildlife Staff

GENERAL LOCATION AND BOUNDARY

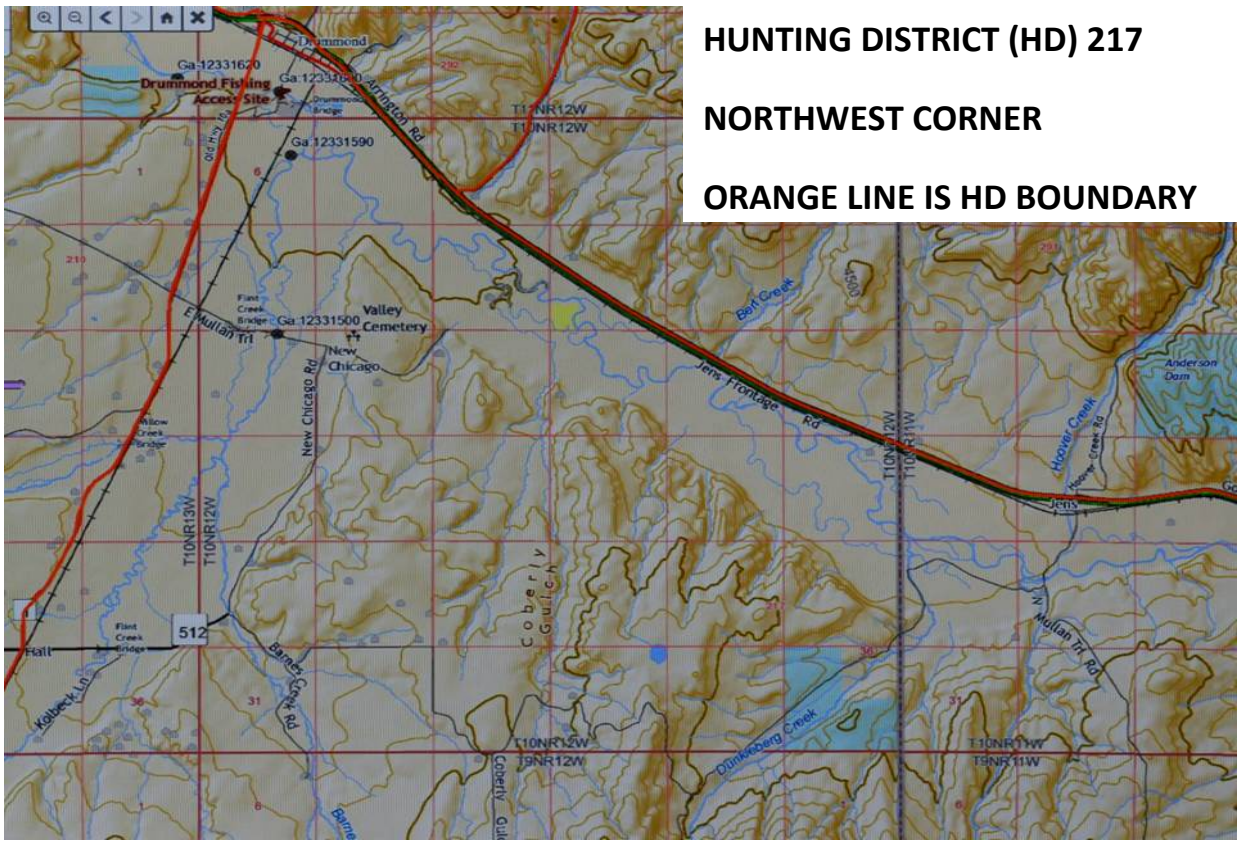
Hunting District (HD) 217 is new for 2016.

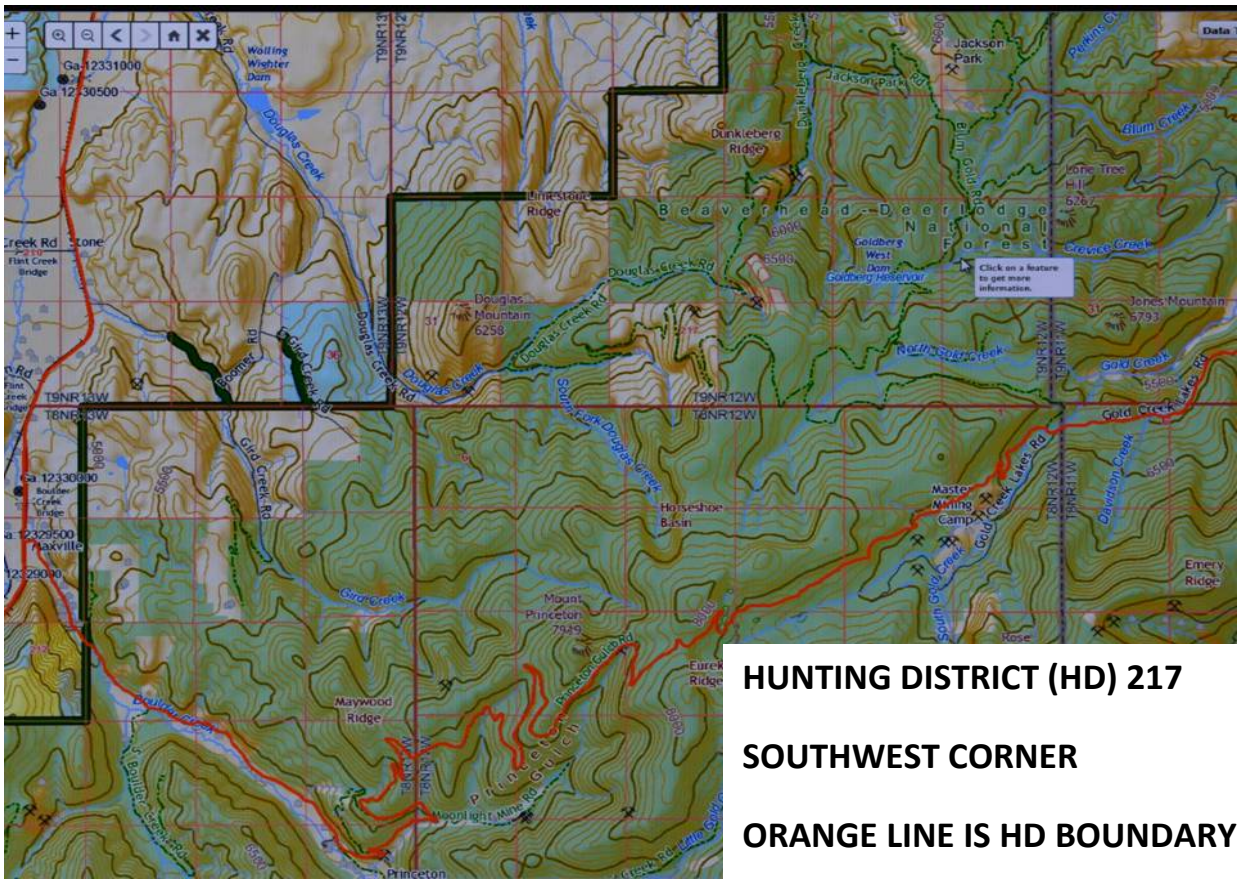
HD 217 was previously part of HD 212, lying on the north and west slopes of the Flint Creek Mountains. The junction of Highway 1 and Interstate 90, at Drummond, is the northernmost point of HD 217; Highway 1 forms the west boundary of the HD and Interstate 90 forms the north boundary. The west boundary runs about 15 miles from Drummond to Maxville. The north boundary runs about 20 miles from Drummond to Garrison.

The circuitous mountain trail connecting Maxville and Garrison, which forms the south boundary of HD 217, follows established roads except for a length of about 6 miles where the boundary follows the property line of the Montana State Prison. Thus, Prison lands are excluded from HD 217.

Mount Princeton, pictured here (viewed from Drummond), is near the southernmost extent of HD 217 and lies within the boundaries of this new HD. The south boundary of HD 217 departs from the Boulder Creek Road at Princeton and follows the Princeton Gulch Road over Eureka Ridge. With the new boundary following the Princeton Gulch Road, the portion of Eureka Ridge that lies south of the Moonlight Mine Road is outside of HD 217 and is open for general elk hunting under the regulations described for HD 212. For the previous 2 hunting seasons, elk hunters have been required to draw a special permit to hunt for bull elk in the area between the Moonlight Mine Road and Little Gold Creek, and north to Drummond.

While the establishment of HD 217 restored traditional elk hunting opportunities in the Moonlight-Little Gold area, close to Maxville, HD 217 means new restrictions on bull elk hunting in the far-eastern corner of the new HD, between Gold Creek and Rock Creek. Permit-only hunting for bulls is new this year in this eastern-most portion of HD 217, where the land is privately owned with some State (DNRC) sections.





HUNTING DISTRICT (HD) 217

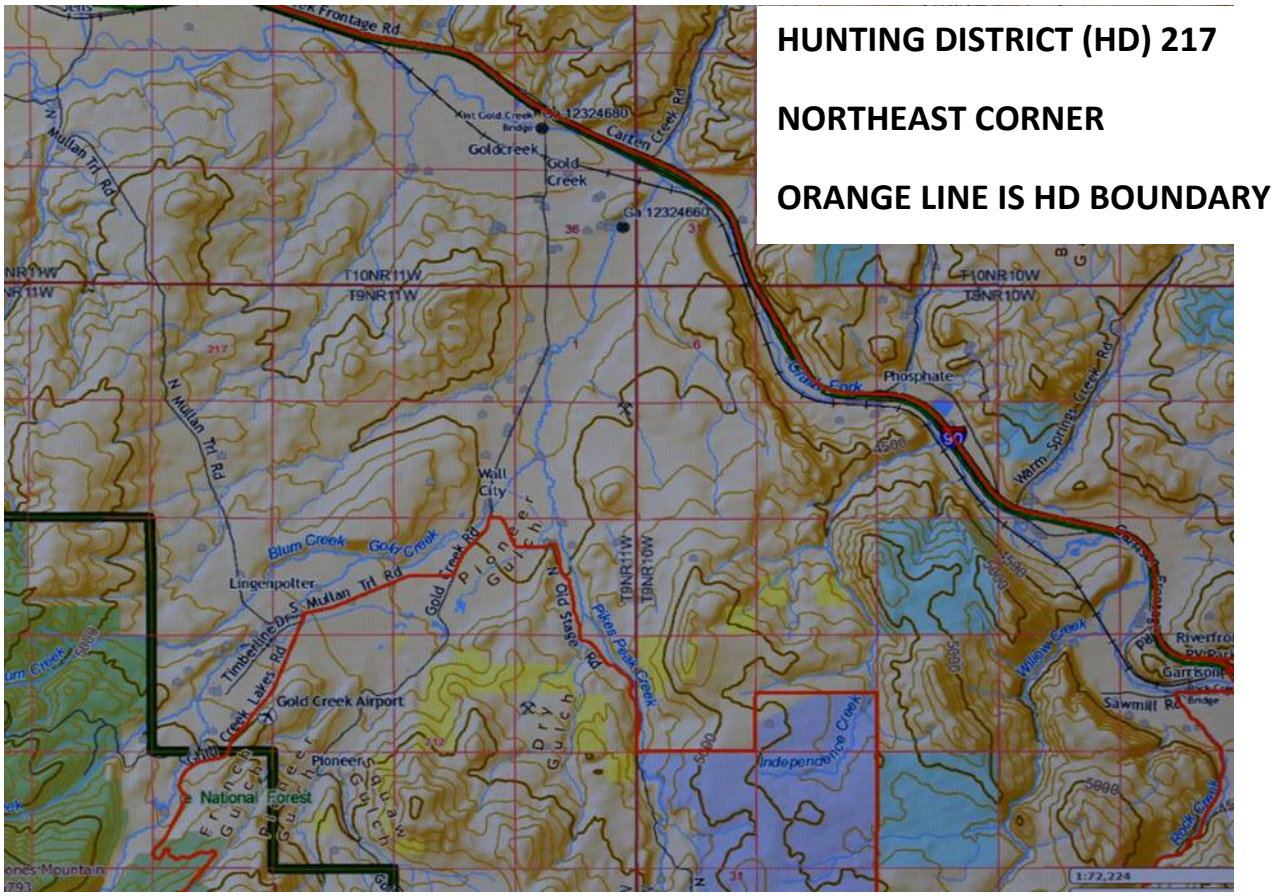
NORTHWEST CORNER

ORANGE LINE IS HD BOUNDARY

HUNTING DISTRICT (HD) 217

SOUTHWEST CORNER

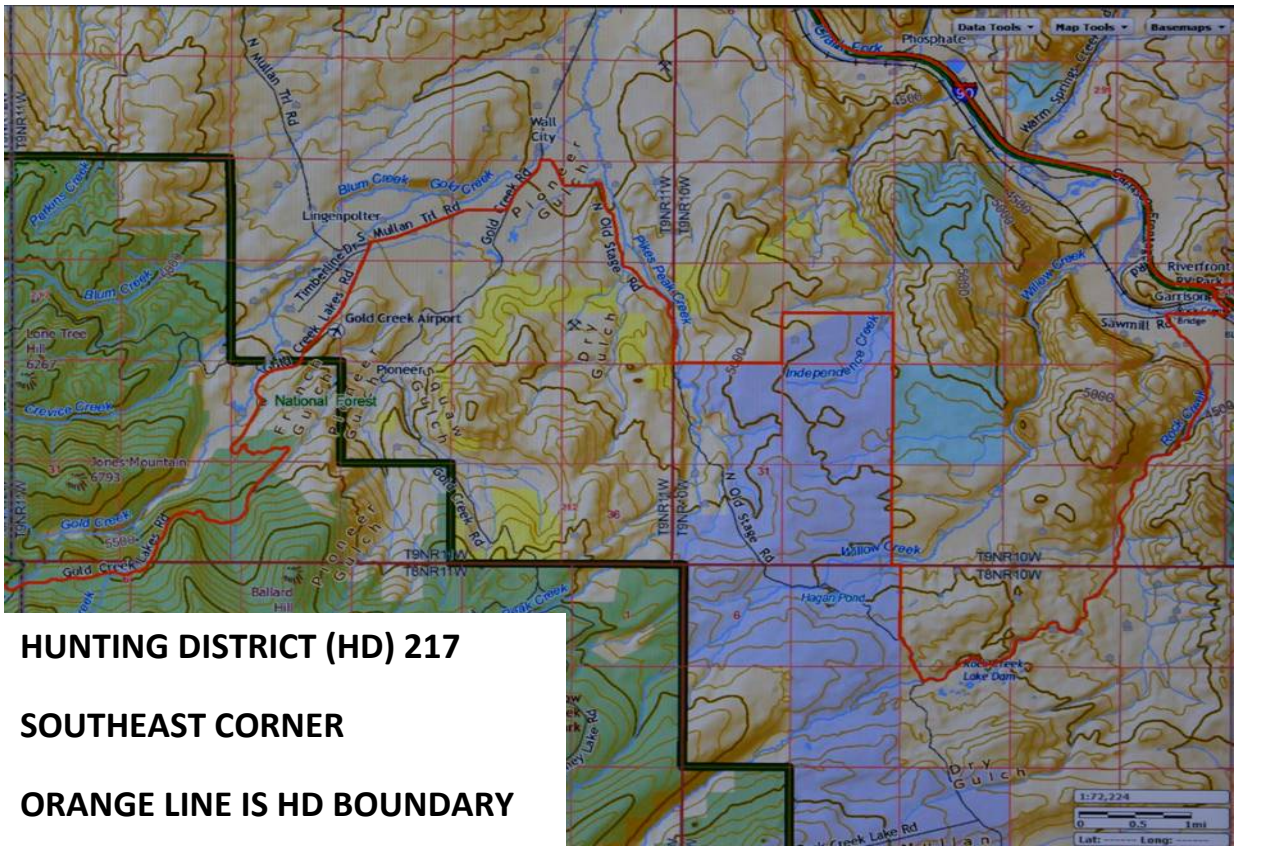
ORANGE LINE IS HD BOUNDARY



HUNTING DISTRICT (HD) 217

NORTHEAST CORNER

ORANGE LINE IS HD BOUNDARY

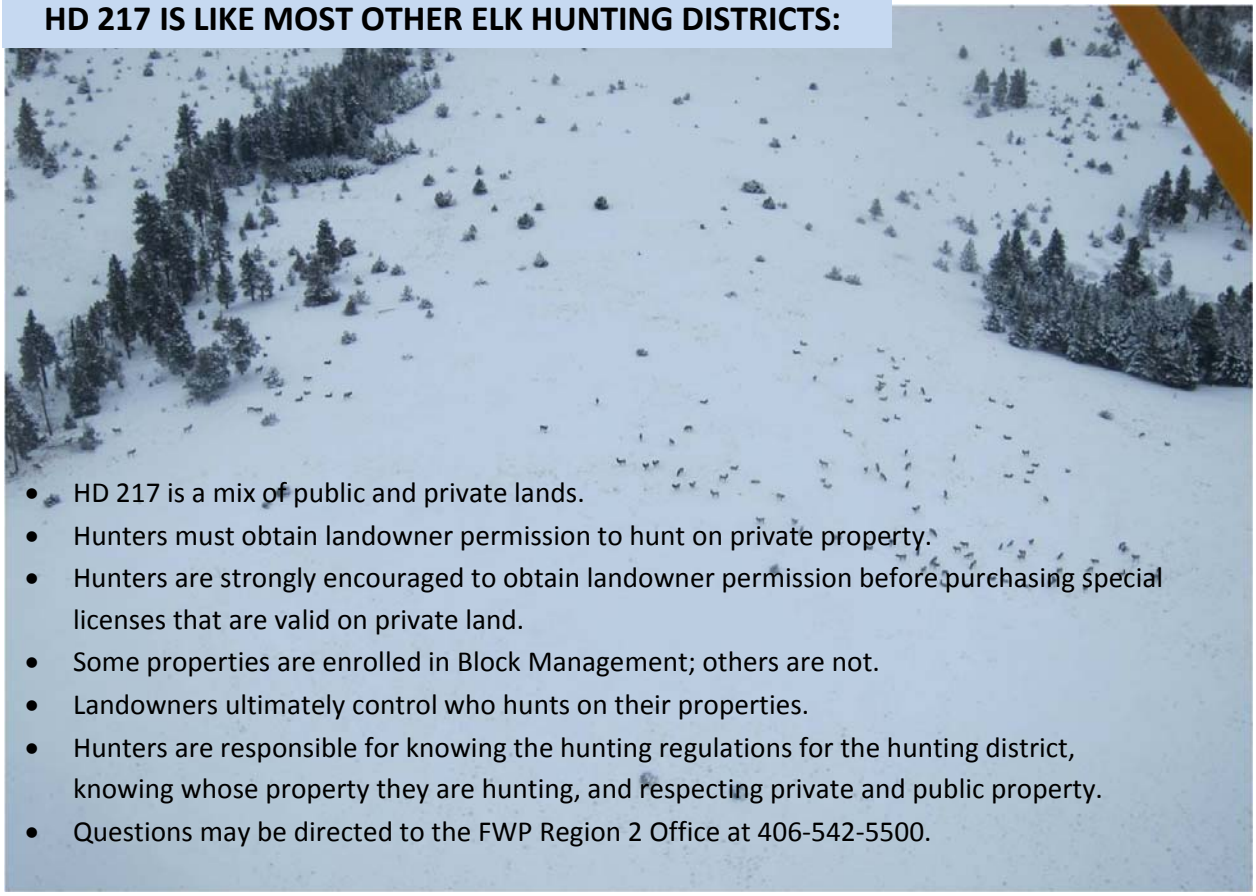


HUNTING DISTRICT (HD) 217

SOUTHEAST CORNER

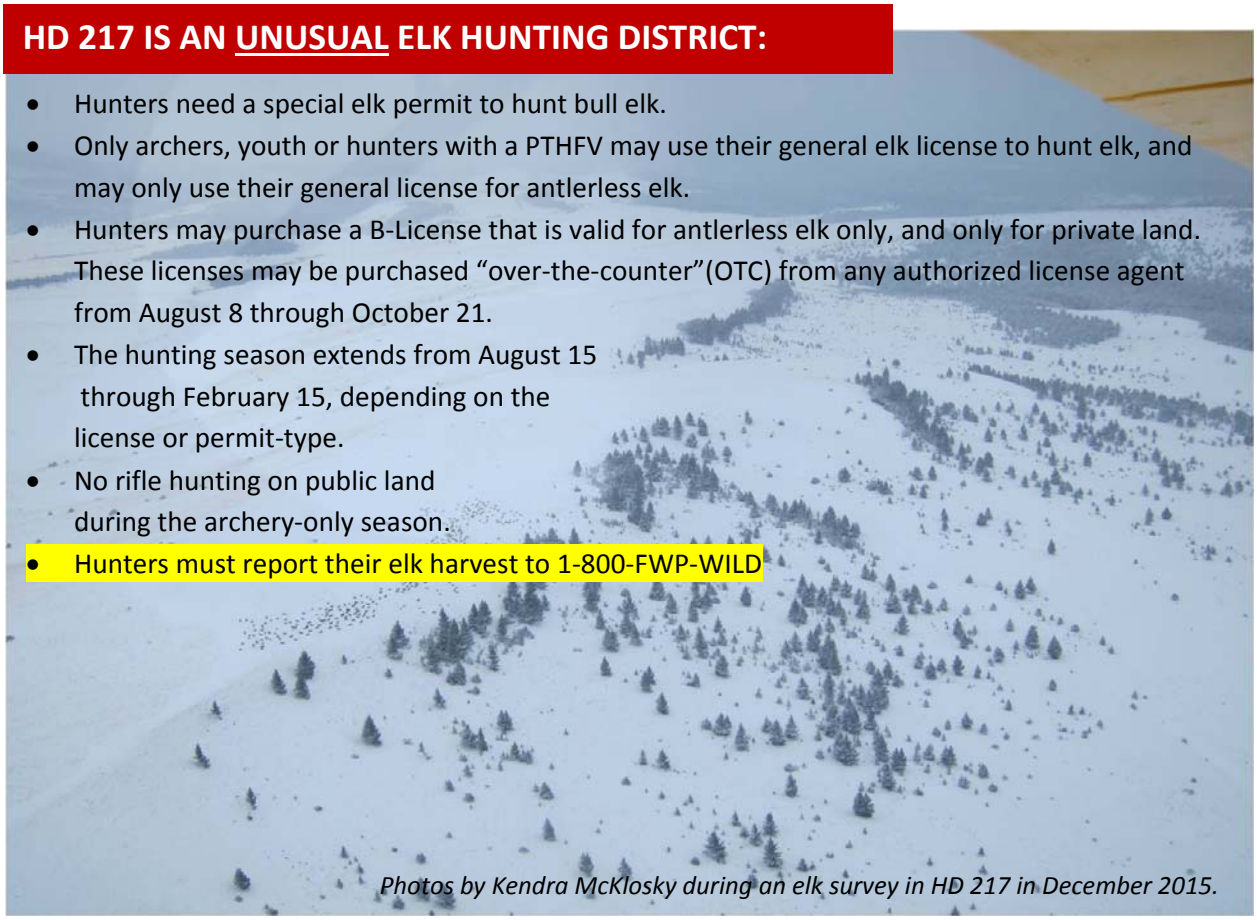
ORANGE LINE IS HD BOUNDARY

HD 217 IS LIKE MOST OTHER ELK HUNTING DISTRICTS:



- HD 217 is a mix of public and private lands.
- Hunters must obtain landowner permission to hunt on private property.
- Hunters are strongly encouraged to obtain landowner permission before purchasing special licenses that are valid on private land.
- Some properties are enrolled in Block Management; others are not.
- Landowners ultimately control who hunts on their properties.
- Hunters are responsible for knowing the hunting regulations for the hunting district, knowing whose property they are hunting, and respecting private and public property.
- Questions may be directed to the FWP Region 2 Office at 406-542-5500.

HD 217 IS AN <u>UNUSUAL</u> ELK HUNTING DISTRICT:



- Hunters need a special elk permit to hunt bull elk.
- Only archers, youth or hunters with a PTHFV may use their general elk license to hunt elk, and may only use their general license for antlerless elk.
- Hunters may purchase a B-License that is valid for antlerless elk only, and only for private land. These licenses may be purchased "over-the-counter"(OTC) from any authorized license agent from August 8 through October 21.
- The hunting season extends from August 15 through February 15, depending on the license or permit-type.
- No rifle hunting on public land during the archery-only season.
- Hunters must report their elk harvest to 1-800-FWP-WILD

Photos by Kendra McKlosky during an elk survey in HD 217 in December 2015.

HUNTING ACCESS

HD 217 is a new attempt in good faith by Montana Fish, Wildlife & Parks (FWP) to maximize the opportunity for hunters of the landowners' choice to harvest antlerless elk on private lands. In the years leading up to 2016, elk have steadily grown to unsustainable levels—unsustainable on public as well as private lands—within HD 217. Traditional elk hunting regulations have not worked on this landscape because those regulations have not meshed with the varying objectives of private landowners for managing people and elk on their lands. Perhaps no one finds every provision in the elk hunting regulations for HD 217 to their liking, but there is consent among a core group of landowners that they can apply the provisions at hand to their best advantage on their properties.

GENERAL ELK LICENSE

The use of the general elk license is limited to particular categories of hunters in HD 217 to reduce hunting pressure along the ranch fencelines and allow elk to drift on and off private land during the hunting season. Light hunting pressure by relatively few general license-holders on public land will occasionally stir elk on public land and improve harvest. Rifles are allowed only on private land—not public land--from August 15 through October 21, in order to prevent camouflaged archers from inadvertently getting in the line of fire during the archery-only season on public lands. On private lands, hunters and landowners are encouraged to communicate about any potential overlap of rifle hunters and archers. Beginning with the opening day of the general rifle season (October 22), youth and hunters with a PTHFV may hunt elk on either private (with permission) or public land in HD 217 through February 15.

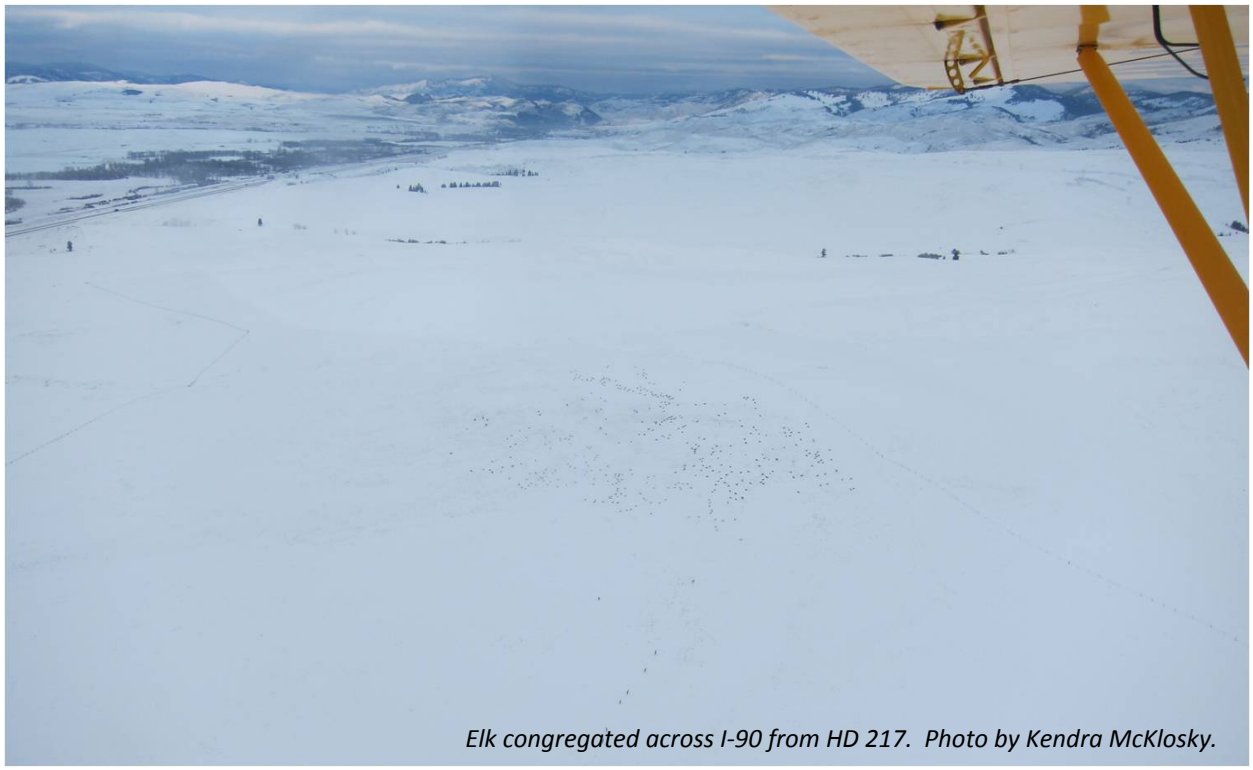
ELK PERMIT

Hunting for bull elk in HD 217 is limited to permit-holders only, to reduce hunting pressure that would otherwise hold elk on private land during the hunting season. Limited permits are intended to result in light hunting pressure on public land, which should stir elk occasionally and increase harvest. Limited permits also provide hunters an opportunity to harvest older bulls than those normally available in general-hunt districts.

ELK B-LICENSE

Elk B-Licenses are available for any elk hunter to purchase at any authorized license provider. <u>This allows any hunter with access on private land in HD 217 to obtain a license to hunt antlerless elk, which eliminates the traditional problem of hunters with permission being unable to draw a limited license</u>. It is hoped that this will increase antlerless elk harvest on private lands and landowner satisfaction with the hunting experience on their properties. B-Licenses must be purchased before October 22, the opening day of the general elk season, to prevent hunters who are unfamiliar with the area from buying B-Licenses without understanding the regulations and securing permission to access private land.

B-Licenses purchased "over the counter" are valid only on private land to achieve a harvest in places where elk are causing economic losses, and to stir-up other elk toward public land. Limited B-Licenses that are valid district-wide were issued in the statewide drawing to provide moderate antlerless harvest on public land, since many of the elk on public land are the same elk causing damage on private land.



Elk congregated across I-90 from HD 217. Photo by Kendra McKlosky.

REGULATIONS SUMMARY—Read across from left to right.

HUNTER-TYPE	*LICENSE/PERMIT*	*DATES VALID*	*SEX VALID*	*LOCATION VALID*	*WEAPONS VALID*
YOUTH OR PTHFV	General Elk License	Aug 15-Oct 21	Antlerless Elk	Private Land Only	No Restriction
		Oct 22-Feb 15		District-wide	
ARCHERS	General Elk License	Aug 15-Feb 15	Antlerless Elk	District-wide	Archery Equip Only
ELK PERMITS		Sep 3-Oct 16	Brow-tined Bull or Antlerless Elk	District-wide	Archery Equip Only
		Oct 22-Nov 27			No Restriction
ELK B-LICENSE VIA STATEWIDE DRAWING (APPLY BY JUNE 1)		Sep 3-Oct 16	Antlerless Elk	District-wide	Archery Equip Only
		Oct 22-Feb 15			No Restriction
ELK B-LICENSE (BUY FROM AUG 8-OCT 21)		Aug 15-Feb 15	Antlerless Elk	Private Land Only	No Restriction

Hunters must report elk harvest to 1-800-FWP-WILD. Contact FWP at 406-542-5500 with questions.

Elk survey in HD 217 in December, 2015. Photo by Kendra McKlosky.

In Lieu of Tusks—*Adaptive Coloration in White-tailed Deer*

by Mike Thompson

THEY LOOK LIKE TUSKS! SOME DEER SPECIES HAVE TUSKS, YOU KNOW!

YEAH, BUT CHINESE WATER DEER DON'T LIVE IN MONTANA!

BESIDES, UNLIKE ELK, WHITE-TAILED DEER DON'T EVEN HAVE UPPER CANINES!

PHOTO BY MOMOTAROU2012 - OWN WORK, CC BY-SA 3.0, HTTPS://COMMONS.WIKIMEDIA.ORG/W/INDEX.PHP?CURID=26299413

I WONDER WHY WHITE-TAILED DEER HAVE WHITE MARKINGS THAT LOOK LIKE TUSKS?

I DON'T KNOW, BUT I'VE GOT A THEORY. HAVE YOU EVER SEEN DEER STOMP AND SNORT?

SURE! THEY'RE WARNING ALL THE OTHER DEER OF DANGER!

THAT'S WHAT I ALWAYS THOUGHT, TOO! BUT AFTER PHOTOGRAPHING A BUCK IN MID-SNORT, I'M NOT SO SURE HE DOESN'T HAVE A BAD ATTITUDE! AND HE WANTS ME TO THINK HE HAS TUSKS!

WOW! LOOK HOW HE LAYS HIS EARS OUT!

Fisher in Region 2*—Inferences From Harvest Data*

by the Region Two Wildlife Staff

IDENTIFICATION AND TAXONOMY

Few people are confronted with the issue of identifying a fisher in the field, due to its restricted distribution and inhospitable habitat. According to Foresman (2012) in *Mammals of Montana* (Mountain Press Publishing Company, Missoula):

> *The fisher is a midsize mustelid somewhat stockier in build than the American marten, although still having the long body form and short legs of the family. The long, bushy tail is more cylindrical than that of other Montana mustelids. Color is uniformly dark blackish brown to black across most of the body surface. Occasionally, some white spotting occurs on the underside, particularly on the chest. . . Body size and color distinguish the fisher from other mustelids such as the mink, American marten and wolverine.*

DISTRIBUTION AND MOVEMENTS

Schwartz et al. (cited above) wrote:

> *Fishers proved very difficult to detect and monitor in our study area, even when fitted with radio-collars, as the study area is largely roadless and mostly designated as federal Wilderness (the Selway-Bitterroot Wilderness alone is >[1,235,000 acres]). We culled male detections from our analysis as we were concerned about the bias introduced by not detecting males for months at a time, suggesting they often had lengthy movements beyond our study area. For example, one juvenile male captured in a trap in January 2005 was incidentally detected in June 2006 in a hair-snare device [57 miles] from the original trap site, across the Selway-Bitterroot Wilderness. Newer and lighter satellite based telemetry will improve our ability to study fishers in the future in these remote landscapes (e.g., Brown et al., 2012). Although, even the newest satellite based approaches will not be a panacea for the study of fishers given the dense vegetation, use of remote habitats in the Rocky Mountains, and the species penchants for using tree cavities and rock piles, which shield satellite communication. Fortunately, instrumented females exhibited much smaller areas of movement, with an average use area of [3.5 square miles]. In the future we hope to combine satellite telemetry with remote download stations to improve our study of female fisher habitat use.*

DIET

Red squirrels (pictured in a Bitterroot Mountains canyon), northern flying squirrels and other small mammals associated with tree canopies, tree cavities, downfall and dense vegetation form the bulk of the fisher's diet. Carrion (carcasses of dead animals) is also important. The fisher and the mountain lion are particularly efficient at preying on porcupines, but porcupines have declined to very low levels within fisher habitat in western Montana.

MORTALITY FACTORS

http://wildlife.org/jwm-study-predation-largely-to-blame-for-fisher-deaths/ JWM study: Predation largely to blame for fisher deaths. By Alex Dropkin, freelance writer in Austin, Texas. Posted on April 27, 2016.

Biologists are now closer to understanding fisher (Pekania pennant) survival and mortality rates following a multiyear study. New research published in the April issue of the Journal of Wildlife Management, found that fishers in California's Sierra National Forest have an annual survival rate of 0.69, with the largest percentage of deaths resulting from predation. The research may prove useful to future wildlife management strategies in the forest where fishers are found.

As part of the study, the team of researchers, led by Rick Sweitzer, a biologist with the Great Basin Institute and a member of The Wildlife Society, monitored 232 radio-collared fishers at two sites in the Sierra National Forest for seven years and identified the cause of death for 93 of 121 fisher carcasses in that span.

Seventy-four of the deaths were due to predation, while the remaining deaths were attributed to a combination of disease, starvation and human-linked factors. Female fishers had a slightly higher annual survival rates than males, at 0.72.

"The only way to achieve a positive population growth is to reduce predation by at least 25 to 50 percent," Sweitzer said. "If we [reduce the other, lower mortality risks] then perhaps we could still achieve a positive growth trajectory without such a dramatic reduction of predation."

Even as researcher continue to examine what habitat conditions make fishers more vulnerable to predators, Sweitzer and his team stress on the value of restricting habitat disturbance near fisher dens.

Other studies have raised concerns about fishers dying after eating rat poison or poisoned prey from illegal marijuana farms. Through Sweitzers research found only six poisoned fishers, and just a single female death, the researchers acknowledge that nonlethal exposure to toxicants may make fishers more vulnerable to other causes of death.

"The reality is that even though rodenticide exposure has gotten a lot of press, when you start looking in detail at the known causes of death, what becomes apparent is that this has not been a major source of mortality for reproducing females," Sweitzer said.

Predation was the only mortality cause to make a big enough impact on fisher populations to cause an overall decline, according to study results. The major predators in the area include bobcats, mountain lions and coyotes; however, the contact rates between fishers and their predators have yet to be studied.

MORTALITY ECOLOGY

Schwartz et al. (2013, reference provided above) found that radioed female fishers in Montana and Idaho "clearly avoided openings such as clearcuts, open areas and grassy slopes." Fishers also avoided ponderosa pine and lodgepole pine.

In combination, these openings, forest types and forests characterized by park-like openings describe much of the landscape of west-central and southwest Montana located east of the Bitterroot Mountains. While fishers might hunt effectively in these habitats, they may be ultimately more vulnerable to predation from larger carnivores like bobcat, mountain lions, coyotes and others in habitats where the larger carnivores are known to concentrate their efforts.

Fishers would seem to be quite difficult for a larger carnivore to hunt within the heart of fisher habitat. Steep slopes, often rocky terrain, heavy downfall and dense forest cover would seem to present an obstacle course that longer-legged and larger bodied predators would find unfavorable for pursuing prey. It seems likely that fishers are found where they are found because the habitat is not only productive of prey, but also resistant to larger predators.

It seems likely, as well, that fishers in other locations and habitats where they are seldom detected would be more vulnerable to their natural predators in those locations. The openings, pine forest types and forests characterized by park-like openings or even-aged seral stands, which fishers avoid, tend to be habitats where bobcats, mountain lions, coyotes and wolves hunt effectively and spend more hunting effort. The fisher's observed avoidance of pine and related habitat features in Montana may not result so much from an inability of fisher to find suitable foraging or denning habitat. Rather, the relative absence of fisher in less suitable habitats may be the result of elevated mortality rates on fisher in these habitats, due to predator or other mortality factors.

Fisher habitat in a canyon bottom in the Bitterroot Mountains, shared by an American three-toed woodpecker on a large-boled Englemann spruce.

FISHER CONSERVATION AND MANAGEMENT

According to Foresman (2012, reference provided above):

> *Heavy trapping and habitat destruction beginning in the 1800s reduced the [fisher] range significantly in the east [United States]. By the 1930s, fisher were thought to be extinct in Montana.. .*

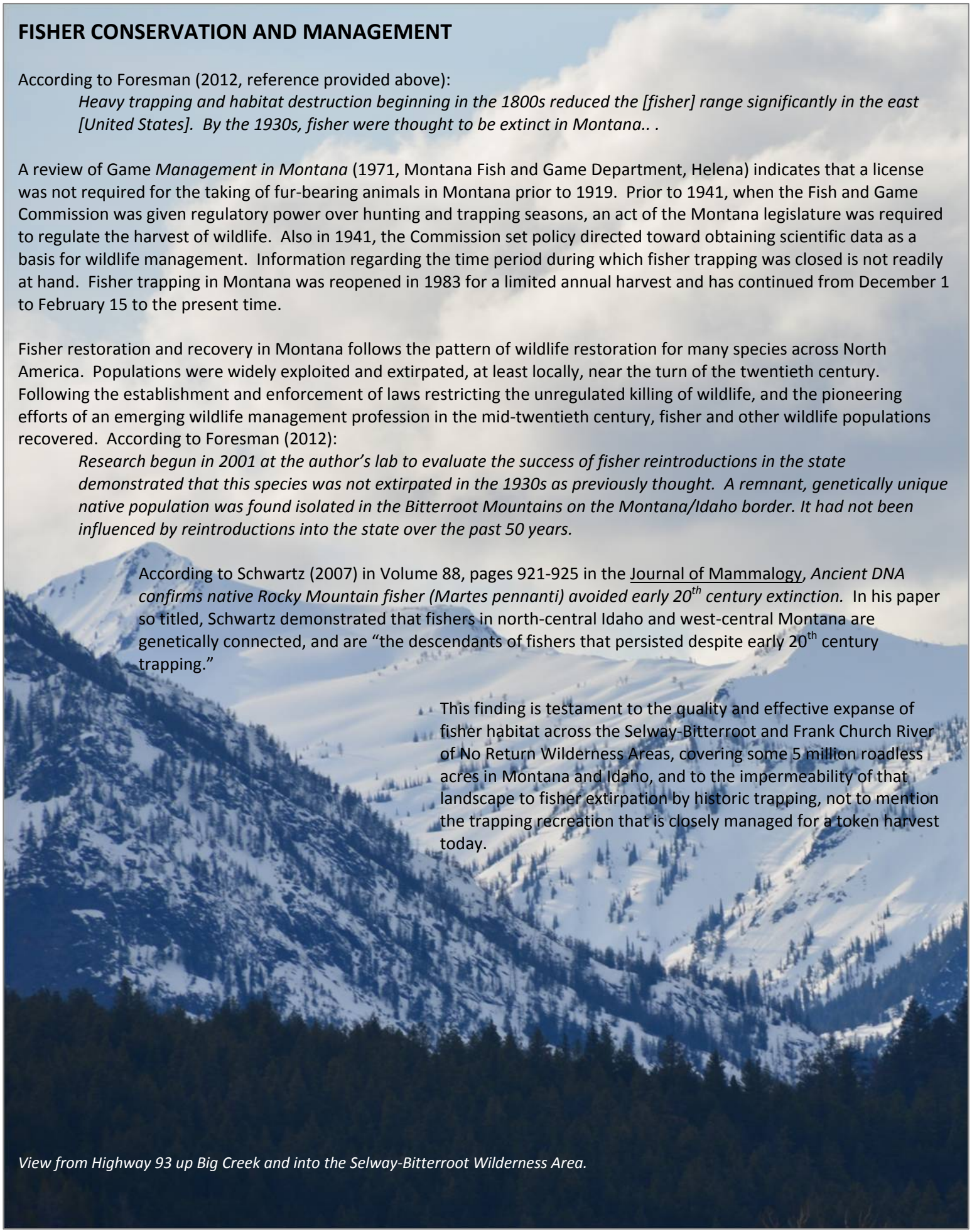
A review of Game *Management in Montana* (1971, Montana Fish and Game Department, Helena) indicates that a license was not required for the taking of fur-bearing animals in Montana prior to 1919. Prior to 1941, when the Fish and Game Commission was given regulatory power over hunting and trapping seasons, an act of the Montana legislature was required to regulate the harvest of wildlife. Also in 1941, the Commission set policy directed toward obtaining scientific data as a basis for wildlife management. Information regarding the time period during which fisher trapping was closed is not readily at hand. Fisher trapping in Montana was reopened in 1983 for a limited annual harvest and has continued from December 1 to February 15 to the present time.

Fisher restoration and recovery in Montana follows the pattern of wildlife restoration for many species across North America. Populations were widely exploited and extirpated, at least locally, near the turn of the twentieth century. Following the establishment and enforcement of laws restricting the unregulated killing of wildlife, and the pioneering efforts of an emerging wildlife management profession in the mid-twentieth century, fisher and other wildlife populations recovered. According to Foresman (2012):

> *Research begun in 2001 at the author's lab to evaluate the success of fisher reintroductions in the state demonstrated that this species was not extirpated in the 1930s as previously thought. A remnant, genetically unique native population was found isolated in the Bitterroot Mountains on the Montana/Idaho border. It had not been influenced by reintroductions into the state over the past 50 years.*

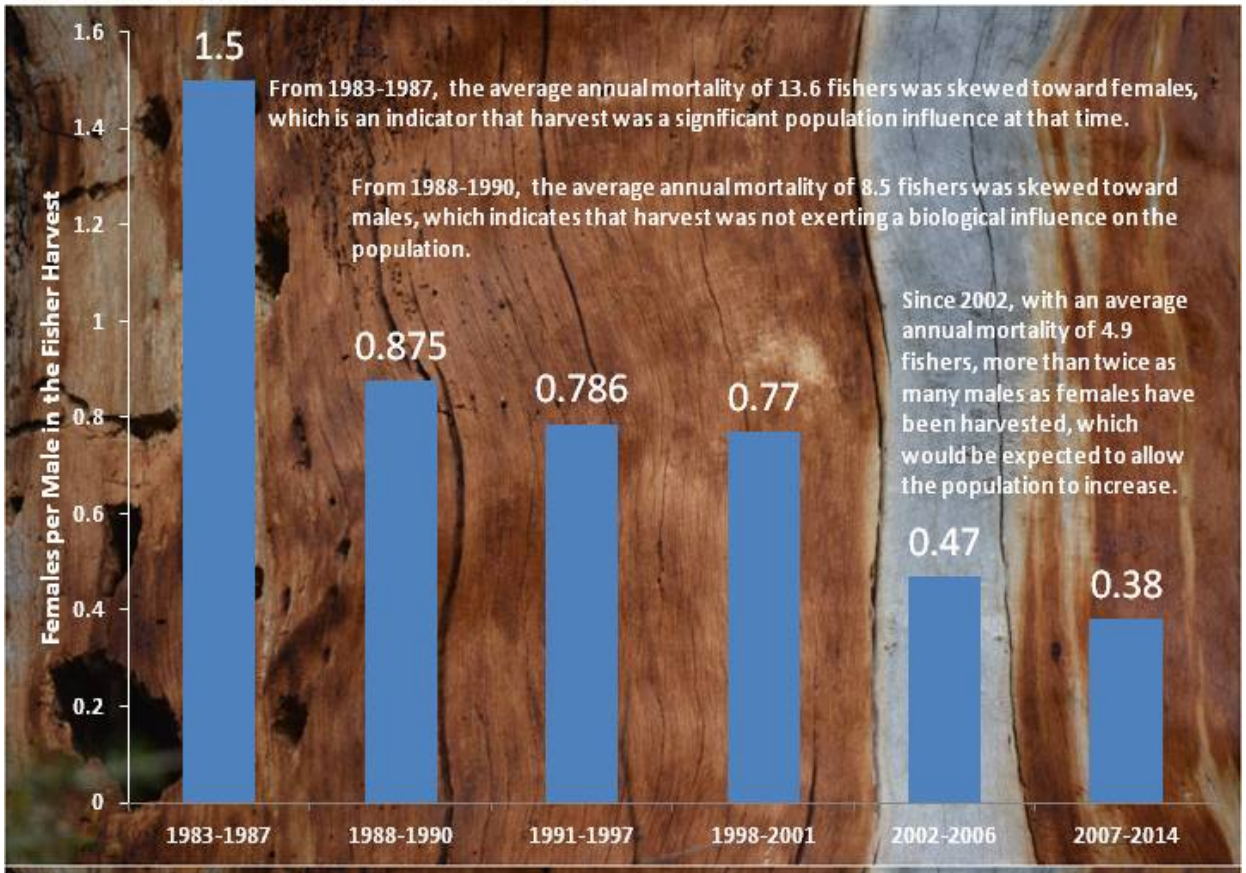
According to Schwartz (2007) in Volume 88, pages 921-925 in the Journal of Mammalogy, *Ancient DNA confirms native Rocky Mountain fisher (Martes pennanti) avoided early 20th century extinction.* In his paper so titled, Schwartz demonstrated that fishers in north-central Idaho and west-central Montana are genetically connected, and are "the descendants of fishers that persisted despite early 20th century trapping."

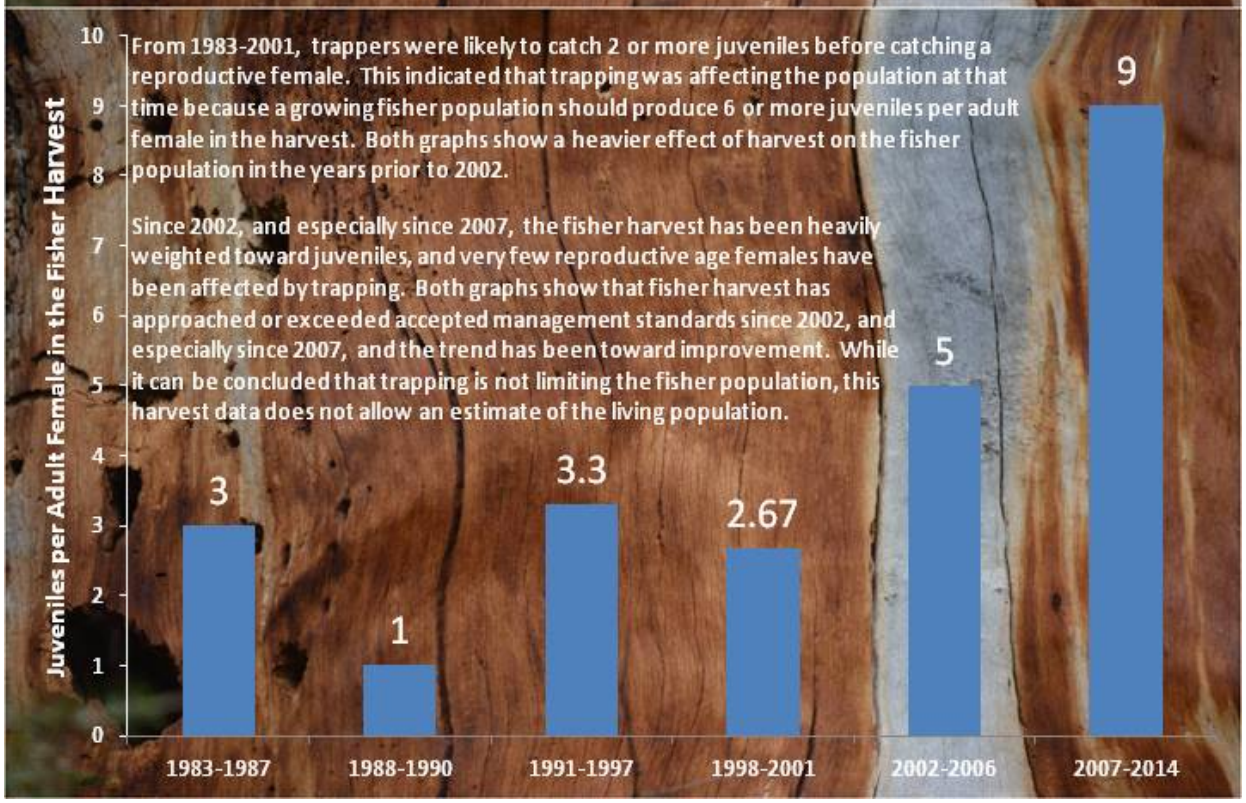
This finding is testament to the quality and effective expanse of fisher habitat across the Selway-Bitterroot and Frank Church River of No Return Wilderness Areas, covering some 5 million roadless acres in Montana and Idaho, and to the impermeability of that landscape to fisher extirpation by historic trapping, not to mention the trapping recreation that is closely managed for a token harvest today.



View from Highway 93 up Big Creek and into the Selway-Bitterroot Wilderness Area.

INFERENCES FROM FISHER HARVEST DATA





Mule Deer Survival in the Bitterroot Valley—*Progress Report*

by Ben Jimenez, Craig Jourdonnais (MPG Ranch), Rebecca Mowry and Kelly Proffitt

In winter 2015-2016, Montana Fish, Wildlife and Parks (MFWP), in collaboration with MPG Ranch, initiated a pilot study to estimate adult female mule deer survival and to identify the sources of mortality in the northern and southern Bitterroot Valley. Additionally, this work will provide baseline information on mule deer diet, mule deer health and condition, and spatial overlap with elk.

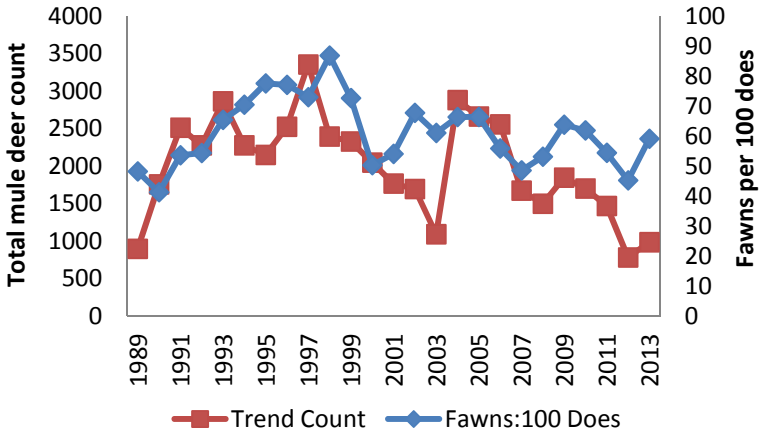


Figure 1. The number of mule deer counted and the number of fawns per 100 does counted in the southern Bitterroot survey area (HD 270) from 1989 - 2014.

Project Background

Mule deer populations have recently declined in parts of Montana and portions of the northwestern United States. Biologists observed similar broad, regional declines in mule deer populations in the late 1960s, the late 1970s, and again in the early and mid 1990s, yet the complex combination of factors that drive these regional mule deer population fluctuations is not well understood. Potential causes include habitat loss or degradation, intraspecific competition, predation, disease, and/or interspecific competition (i.e. with elk and livestock). Recent intensive research efforts in Colorado and Idaho have broadly concluded that mule deer populations are limited by habitat, specifically by winter range habitat and weather that may limit the overwinter survival of fawns (Hurley et al. 2014, Monteith et al. 2014, Bergman et al. 2015). How these results translate to western Montana is unknown however, as variations weather and predator communities may have variable effects on mule deer populations. For example, mule deer numbers have declined in the Bitterroot Valley of western Montana, but survey data do not support the hypothesis that reduced fawn survival is a driving factor (Figure 1). The cause of mule deer declines in the Bitterroot Valley is unknown and the purpose of this project is to evaluate adult female survival and better understand the factors that may be contributing to population declines.

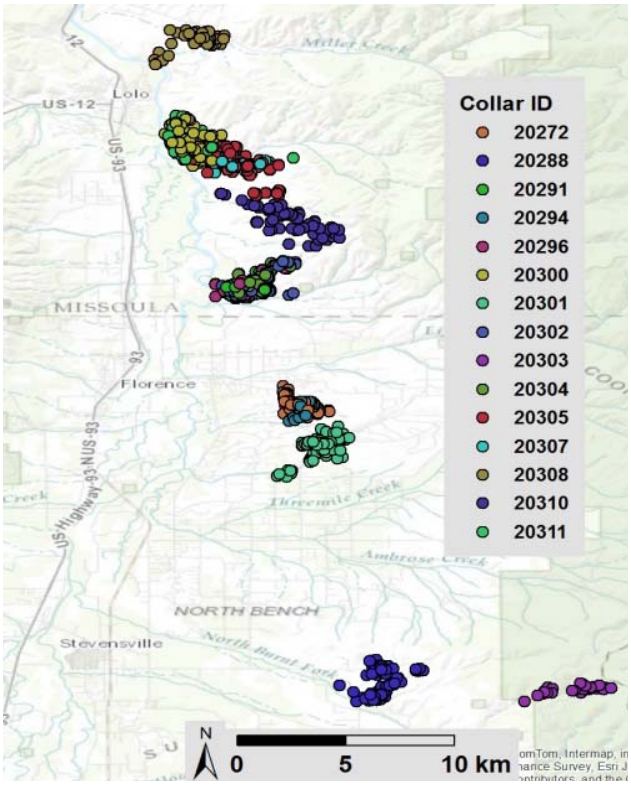


Figure 2. Locations from adult female mule deer in the Sapphire area of the Bitterroot Valley from March 1 through March 16, 2016.

Deer Monitoring and Survival

During winter 2015-2016 we ground darted 33 adult female mule deer. We collected blood and fecal samples, measured chest girth, estimated age based on tooth wear patterns, assessed body condition by palpation of the ilium, ischium, sacral ridge and sacro-sciatic ligament, and noted the presence of fawns (Cook et al. 2007). We instrumented each doe with a radiocollar programmed to collect a GPS location every 4 hours and send a mortality signal if the collar becomes inactive for 8-hours, and applied ear tags for future identification. We captured and sampled a total of 17 mule deer on the Northern Sapphire winter range (Hunting District [HD] 204) and 16 mule deer on the East Fork winter range (HD 270).

Figure 3. FWP Area Biologist and project volunteer prepare to release an adult female deer.

As of May 10th we investigated 5 mortality events: 3 in the Northern Sapphire area and 2 in the East Fork area. Mortalities in the Northern Sapphire area and included 1 coyote depredation, 1 unknown mortality, and 1 capture related mortality. The mortalities in the East Fork area included one lion depredation and 1 natural mortality. The deer that died of natural mortality was found intact with no sign of injury, predation or scavenging, and given the time of year and condition of the carcass the deer likely died of poor condition (i.e., winter kill).

Deer Age, Body Condition, Pregnancy and Disease Exposure

We estimated captured mule deer to be from 1.5 to 10+ years of age. We estimated 16 out of 33 animals to be 1.5 – 2.5 years old, and 10 out of 32 animals to be 6.5 or older. We will send an incisor from all mortalities to Matson's Laboratory for aging by cementum analysis.

Figure 4. An adult female mule deer waking up after being immobilized and instrumented with a radiocollar.

Based on palpation, we observed deer were generally in poor condition (i.e. little to no discernible body fat at any points of palpation). Additionally, while our sample size was limited to 8 animals, we found only 2 deer to have measurable layers of rump fat when assessed using ultrasonography.

We collected blood samples to determine pregnancy and to screen for exposure to diseases (bluetongue, epizootic hemorrhagic disease, and bovine respiratory syncytial virus) as well as livestock diseases (parainfluenza 3, bovine viral diarrhea, leptospirosis, and anaplasmosis). We collected blood samples from 28 of the 33 mule deer. We also collected fecal samples from all captured mule deer to screen for parasites and to assess winter diet composition.

We found pregnancy rates of 94% in the Northern Sapphire area and 92% in the East Fork area. These rates are similar to other mule deer populations in eastern Montana, Colorado, Idaho, and Utah where pregnancy rates range from 86 – 100% (Wood et al. 1989, Andelt et al. 2004, Hurley et al. 2011, Freeman et al. 2014).
Serology and diet results are pending, and will be included in future reports.

Timeline

Radiocollars will collect location data and survival will be monitored for 3 years. During spring and summer 2016, mule deer pellet samples will be collected to assess spring and summer diet.

Acknowledgements

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