Montana Fish, Wildlife & Parks

Region 2 Wildlife Quarterly

June 2018

Male Dusky Grouse near Mt. Jumbo Wildlife Management Area, May 12, 2018

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June 2018

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

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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, retired
Julie Golla, Wildlife Biologist, Upper Clark Fork, jgolla@mt.gov, 406-563-2531
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, tylerparks@mt.gov, 406-542-5500
Tyler Rennfield, Hunting Access Resource 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
Eli Hampson, Cougar and Bear Management Specialist, 406-542-5508

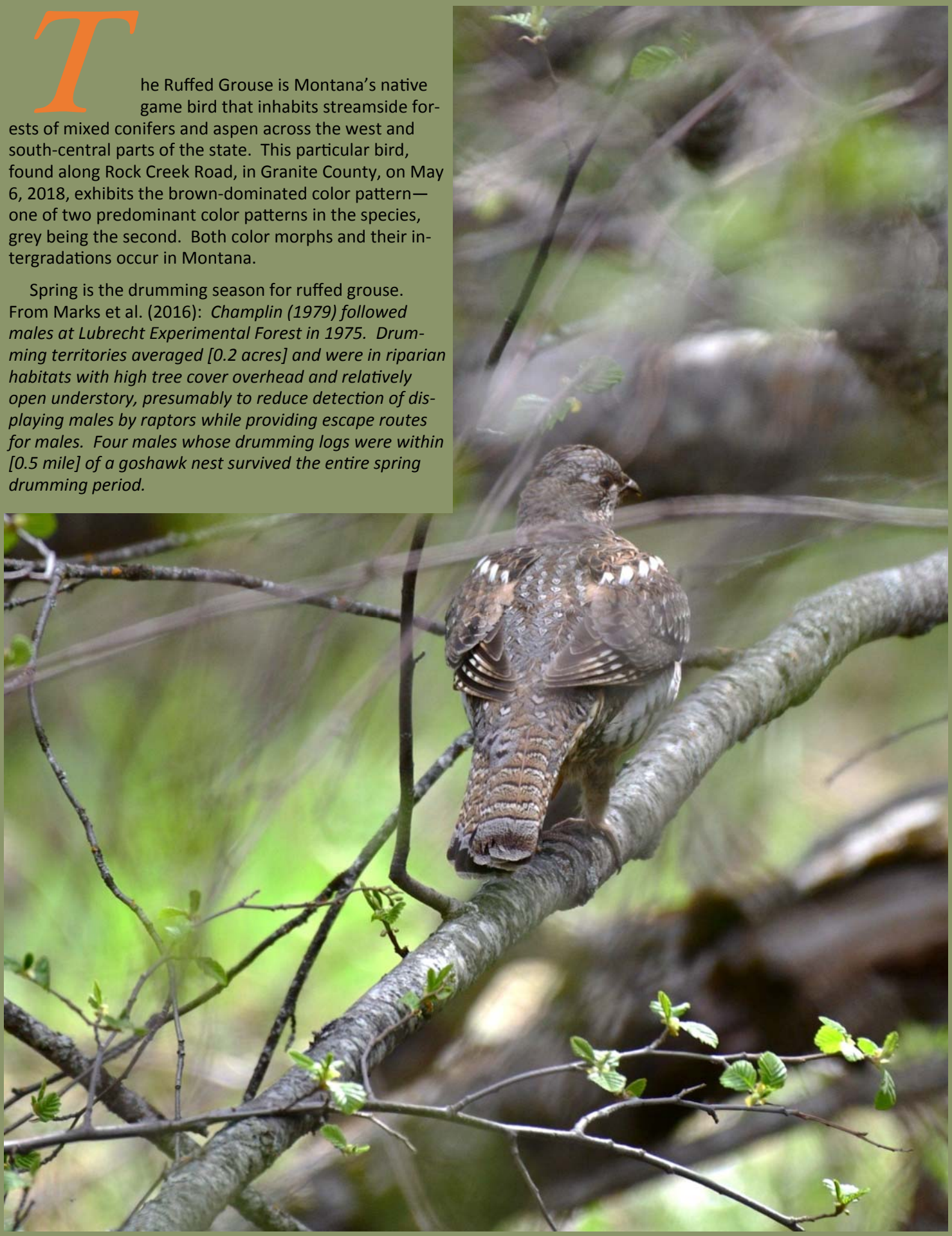
Statewide Research Staff Housed at Region 2 Headquarters:
Nick DeCesare, Wildlife Biologist, Moose Research Project, ndecesare@mt.gov, 406-542-5500
Ben Jimenez, Research Technician, bjimenez@mt.gov, 406-542-5500

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.

The Ruffed Grouse is Montana's native game bird that inhabits streamside forests of mixed conifers and aspen across the west and south-central parts of the state. This particular bird, found along Rock Creek Road, in Granite County, on May 6, 2018, exhibits the brown-dominated color pattern—one of two predominant color patterns in the species, grey being the second. Both color morphs and their intergradations occur in Montana.

Spring is the drumming season for ruffed grouse. From Marks et al. (2016): *Champlin (1979) followed males at Lubrecht Experimental Forest in 1975. Drumming territories averaged [0.2 acres] and were in riparian habitats with high tree cover overhead and relatively open understory, presumably to reduce detection of displaying males by raptors while providing escape routes for males. Four males whose drumming logs were within [0.5 mile] of a goshawk nest survived the entire spring drumming period.*



This ruffed grouse appeared on May 13, 2018, on the Blackfoot-Clearwater Wildlife Management Area. Unlike the bird pictured on the previous page, this one exhibits a grey-dominated color pattern, rather than the brown. A photo of a "winter" (March 24, 2018) bird in almost the exact same location is shown in the inset above, also predominantly grey.

While the locations of the two spring (May) observations were separated by some 40 miles as the crow flies, their habitats were much the same. Neither bird was seen or heard drumming while being photographed, and neither can be confirmed as being male, although the bird at Rock Creek (previous page) seems to have an unbroken band on its tail and more than one white spot on its rump, both characteristic but not necessarily diagnostic of males. While down logs were present in both photos, none in the photos were as large and prominent as the literature would suggest for a drumming log.

Once known as Blue Grouse, the birds pictured on this page are now classified as Dusky Grouse. Both are males (as told by the yellow-to-orange patch above the eye), both were observed in the same Douglas-fir stand near the Mount Jumbo Wildlife Management Area, and both were photographed in the month of May, two years apart: 2016 (right) and 2018 (top).

Like Ruffed Grouse, Dusky Grouse males set up territories in the spring, but instead of drumming with their wings, Dusky Grouse make a hooting call and push air through their throat sacs, revealing a purplish center and a white perimeter.

According to Marks et al. (2016): *. . . Dusky Grouse are well known for moving up in elevation in winter, where they reside for days on end in large conifers, eating needles while staying warm, dry and relatively safe from aerial predators such as the Northern Goshawk. . . Some of the best habitat is found where ridge-top stringers of Douglas firs or ponderosa pines are bordered by bunchgrasses and low shrubs (see Martinka 1972).*

Spotted Dog WMA

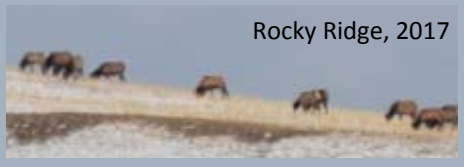
Winter 2017

Winter conditions dictate how much of the 37,877-acre Spotted Dog Wildlife Management Area (WMA) is functionally available as elk winter range. While virtually the entire WMA may be occupied by elk in mild winters, snow conditions can render large portions of the WMA useless to elk in severe winters.

In the winters of 2017 and 2018, FWP staff photographed environmental conditions in the northwest portion of the WMA, southeast of Garrison. Here, and on the following page, we present a few of those photos to illustrate the tale of two, quite different winters.

The snapshots from Winter 2017 (on this page) reveal generous swaths of brown grass throughout February. The effects of wind action are evidenced by the patches of drifted snow in the Feb. 5 and Feb. 15 pictures. While cold temperatures accompanied by strong winds can tax the energy reserves of wintering elk, the animals are able to use timber and topography to break the wind as necessary. The benefits of cold temperatures and wind include the exposure of forage on windblown slopes and ridges, and the relative ease of walking and pawing through the soft snow.

Under the conditions we witnessed in 2017, we were able to count 397 elk on that portion of the WMA from a single vantage point on February 5. Elk were readily visible in every subsequent inspection through March. As seen (bottom right), Spotted Dog WMA was virtually snow-free by March 31, 2017, and approximately 2,000 elk were counted on the WMA by aircraft.

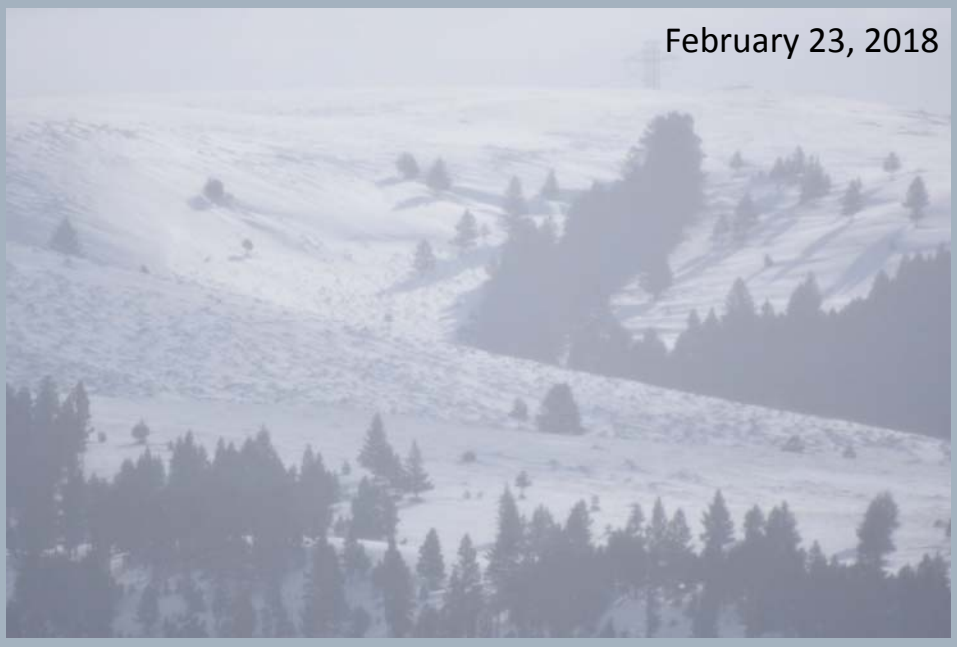


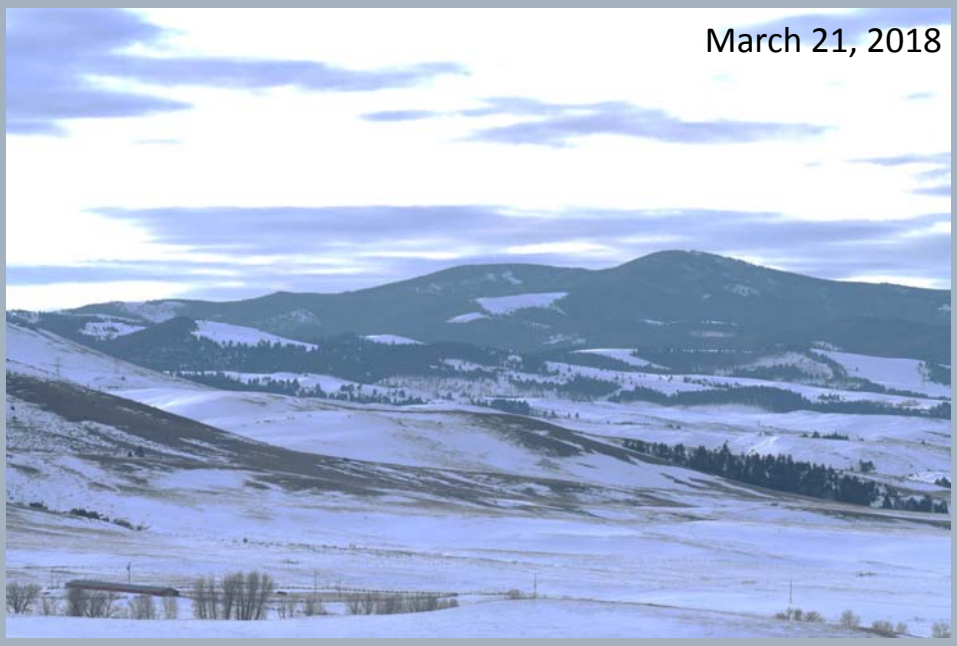
Rocky Ridge, 2017

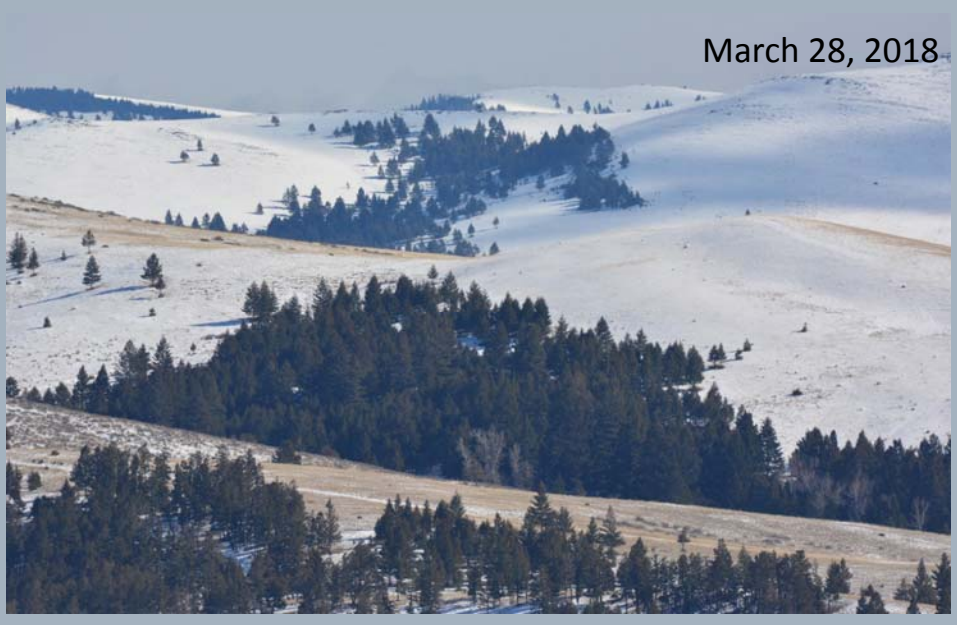
February 5, 2017

February 15, 2017

March 31, 2017


February 23, 2018


March 21, 2018


March 28, 2018

Spotted Dog WMA

Winter 2018

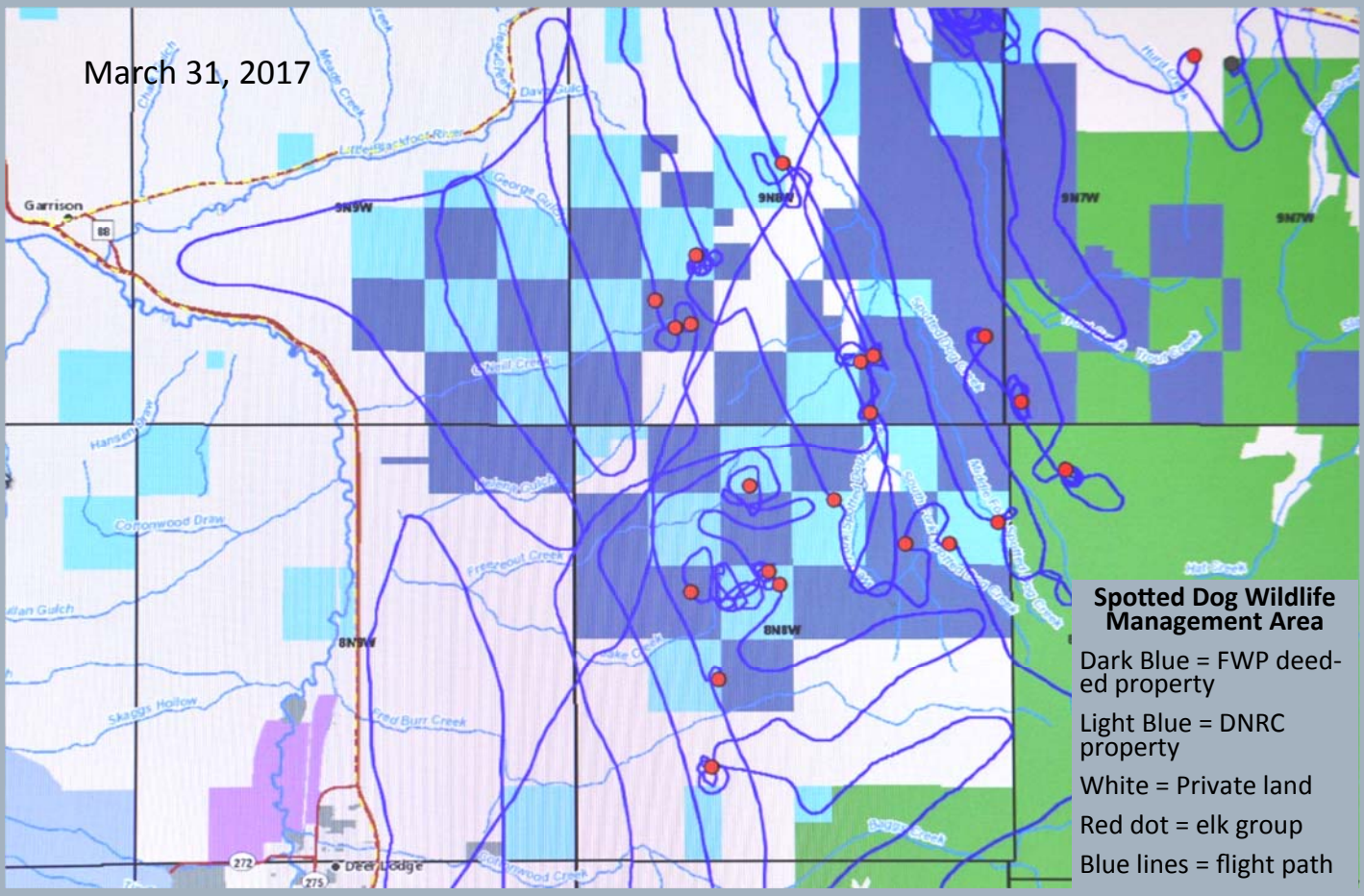
The winter of 2018 presented elk with drastically different environmental challenges than the winter of 2017.

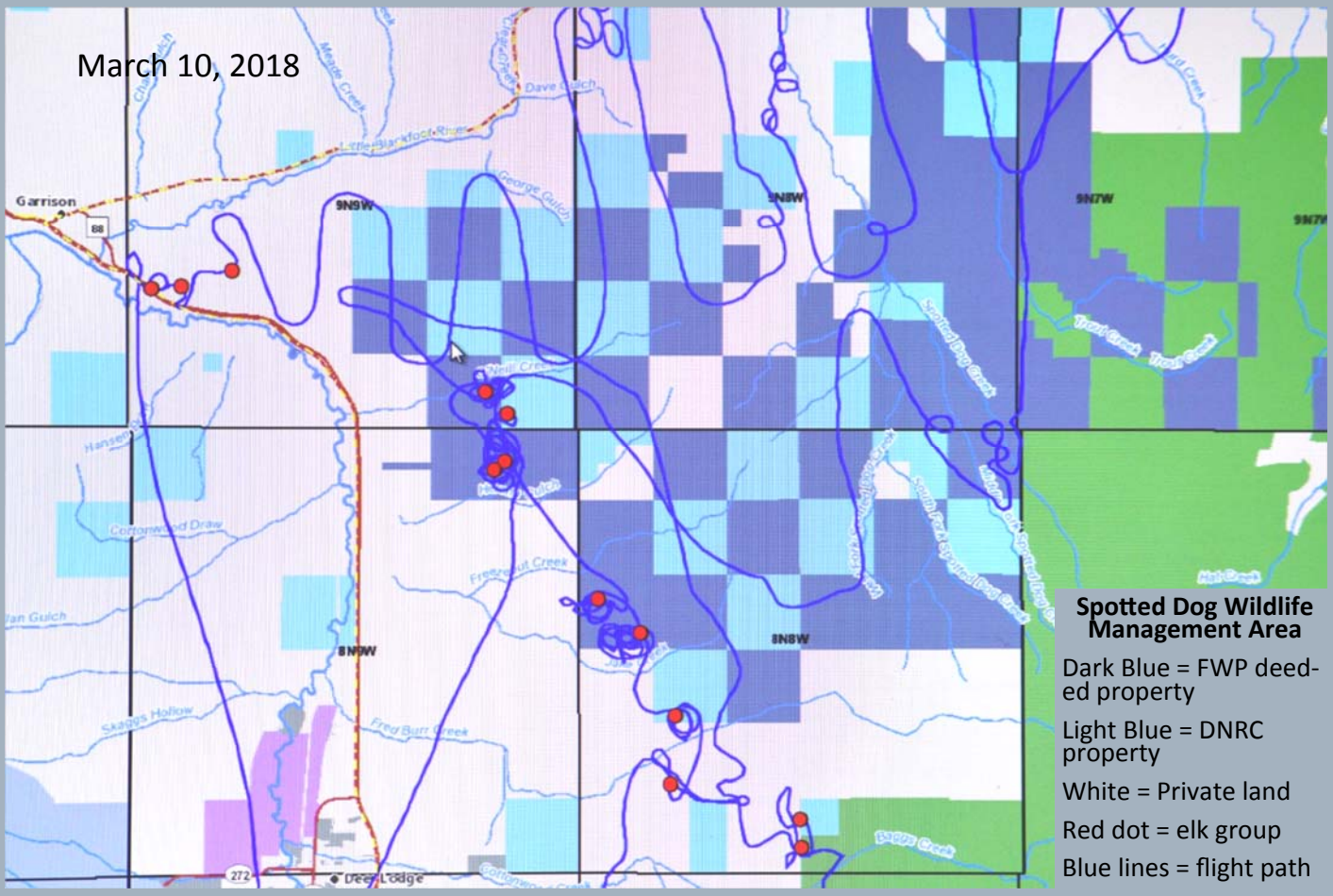
The biggest difference between the two winters was the rain-on-snow events that occurred in 2018. Motorists on Interstate 90 shared in the effects of rain on snow when the residual snow froze solid again after each rain. The result on Spotted Dog WMA was a settled, hardened snowpack that entombed elk forage and hindered elk travel. The differences between February 2017 and February 2018 are apparent when comparing the picture on this page with those on the previous page.

As February turned into March, the longer duration of Winter 2018 became apparent. Most strikingly, the snow-free conditions on March 31, 2017 (previous page) were replaced on March 28, 2018 with a still snow-covered landscape. At least by way of the photographer's lens, it appears that snow pack on the winter range on March 28, 2018 (bottom left) exceeded any snow depths that occurred in February or March 2017 (previous page).

Observations of elk on the WMA from our vantage point, south of Garrison, were far fewer in 2018 than in 2017. Only a few dozen elk were observed in 2018 where 397 elk were counted in 2017.


Garrison Jct., 2018


March 31, 2017
Garrison
Deer Lodge
Spotted Dog Wildlife Management Area
Dark Blue = FWP deeded property
Light Blue = DNRC property
White = Private land
Red dot = elk group
Blue lines = flight path


March 10, 2018
Garrison
Deer Lodge
Spotted Dog Wildlife Management Area
Dark Blue = FWP deeded property
Light Blue = DNRC property
White = Private land
Red dot = elk group
Blue lines = flight path

Effective Winter Range

We can think of elk winter range as a landscape supporting the native forages that elk prefer to eat in winter, such as rough fescue and bluebunch wheatgrass. But, all the forage in the world can't sustain wintering elk when that forage is buried beneath crusted snow, where foraging may require more energy for elk to excavate through the snow than the energy gained in that mouthful of cured vegetation.

The lay of the land is more important to elk in the winter than forage production alone.

With 27, 616 acres deeded to FWP and another 10, 261 acres leased from DNRC, the Spotted Dog Wildlife Management Area (WMA) is one of Montana's largest, representing the footprint of a largely intact, native grassland community. Although these lands are relatively low-lying foothills and certainly represent some of the best available winter range in Hunting District 215, roughly three-fourths or more of the WMA is perched at over 5,000 feet elevation, rising to more than 6,000 feet in scattered interior locations. (For reference, the elk summer range on nearby MacDonald Pass, on the Continental Divide, sits at 6,312 feet.)

Most of the higher elevations on Spotted Dog WMA are situated on a broad, undulating plateau, forming basins that shade the land from the winter's low sun angle and collect snow. The combination of the relatively level and concave terrain and higher-than-ideal elevation results in the majority of Spotted Dog WMA being unavailable as elk winter range during at least some portion of most winters. If more evidence is required to support this claim, consider the fact that USFS Road 314 supports a groomed snowmobile route in the northeast portion of the WMA, where a dependable snowpack occurs.

So, it shouldn't surprise us that elk distribution across the WMA was restricted primarily to the lowest elevations along and below the western and southern boundary of the property in the winter of 2018, as indicated by the GPS waypoints of elk distribution during FWP's mid-winter, aerial elk survey (preceding page, bottom). If an imaginary polygon connecting the elk observations from that survey represents something that we might call "effective winter range"—that is, the area that elk could effectively utilize at that time—then upwards of 80 percent of the WMA was unavailable as elk winter range, quite likely for most or all of the winter period in 2018.

By comparison, most of the WMA was occupied with elk groups as the snow melted in the spring of 2017 (previous page, top).

At some point during most winters, snow conditions render the upper elevations of the winter range as unavailable to elk, as snow depths and conditions vary. Such periods of severity may occur for a week, a month, or longer, but at some point in most winters elk are called upon to minimize energy expenditures at the expense of obtaining quality forage. And on Spotted Dog WMA, the most severe winter periods focus elk on the southwest-facing slopes and forested draws of its western and southern boundary.

With the exception of bull elk, however. Mature bulls tend to separate from the larger cow-calf groups in winter and may consistently be found at higher elevations in relatively deep snow under a forest canopy. The winter survival strategy of bulls is to minimize energy loss through avoidance of social interaction and excessive foraging effort. Awaiting spring, the larger bulls tend to forage on the tips of Douglas-fir twigs, deciduous browse, grasses in tree wells, and tree lichens, while moving the shortest possible distances between bites.

During the challenging winter of 2018, elk made extensive use of private ranches (previous page, bottom). As soon as the extended hunting seasons (shoulder seasons) on private lands closed (February 15), hundreds of elk moved onto the feedlines where ranchers spread hay for their livestock. In some cases, large numbers of elk displaced cattle from their feed, threatening to affect the health of domestic calves in their critical last days and weeks before birth. Conflicts between elk and ranching operations were significantly greater in the winter of 2018 than in 2017. Interestingly, elk abandoned the cattle feedlines almost immediately when surrounding rangelands first began to open up in the early spring, which may be seen as an indication of how desperate elk were to access forage at almost any energetic cost when they came to the feedlines in February.

The elk survey of March 10, 2018 offers a glimpse of an answer to a key question: how many elk can Spotted Dog WMA hold during a severe winter. FWP counted a total of 646 elk in 7 groups on FWP deeded or leased lands located north of Fred Burr Creek (previous page, bottom). Additional elk were distributed mostly on private land. This is just one data point among other considerations when envisioning an elk carrying capacity for the Spotted Dog WMA. During milder periods of the winter season, the WMA can support 2-3 times the elk that we saw there in 2018, at least temporarily (previous page, top). But now we have documented a bottleneck: severe winter weather conditions and a limited amount of terrain that will support elk under such conditions.

Public Wildlife . . .
. . on Private Habitat

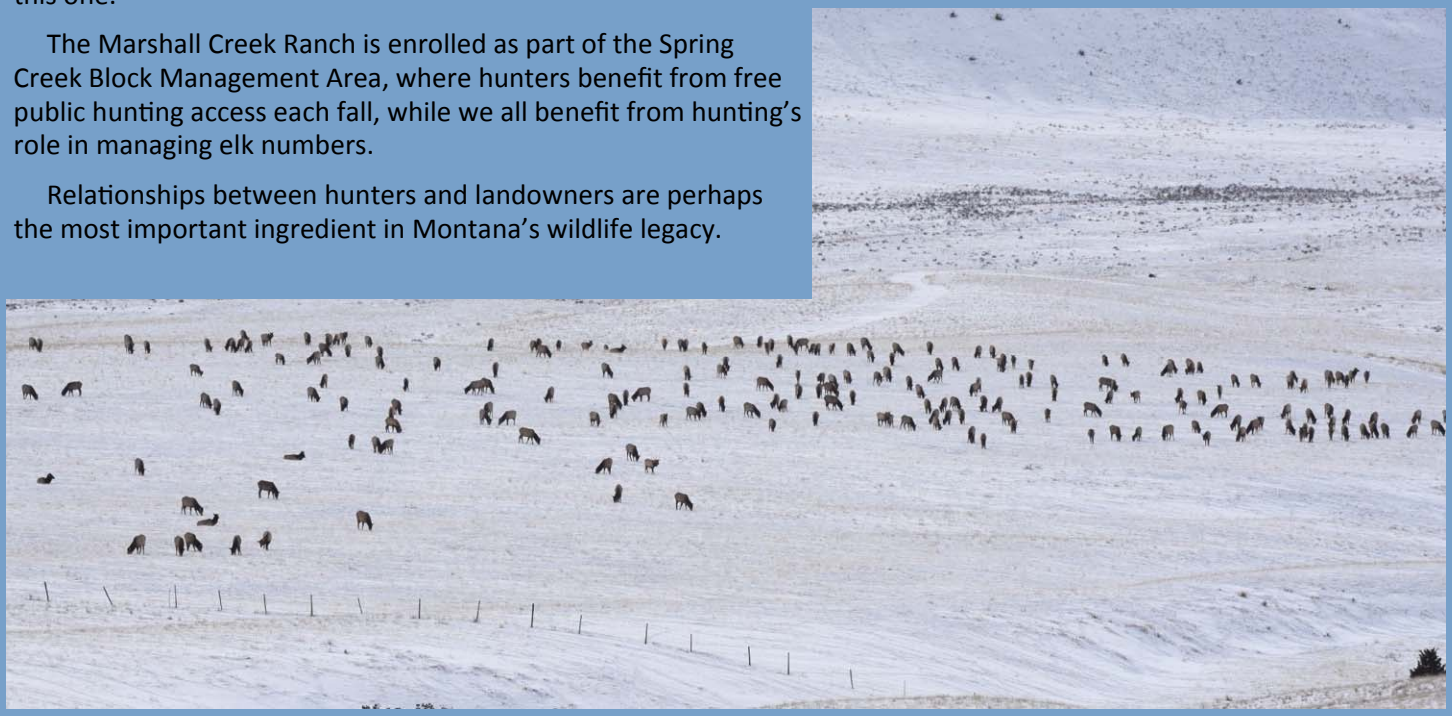
While Montana's Wildlife Management Areas play a crucial role in the effort to make places for wildlife, our WMAs and wildlife alike are supported upon a largely privately owned landscape.

It's hard to imagine a more impressive example of the contributions made by countless private landowners toward Montana's wildlife legacy than that of the Marshall Creek Ranch, west of Philipsburg. During a cold spell from mid-February to early March, 2018, we observed roughly 700 elk on or near the Ranch, just by driving Highway 348.

The fence damage caused by elk is significant in a winter like this one.

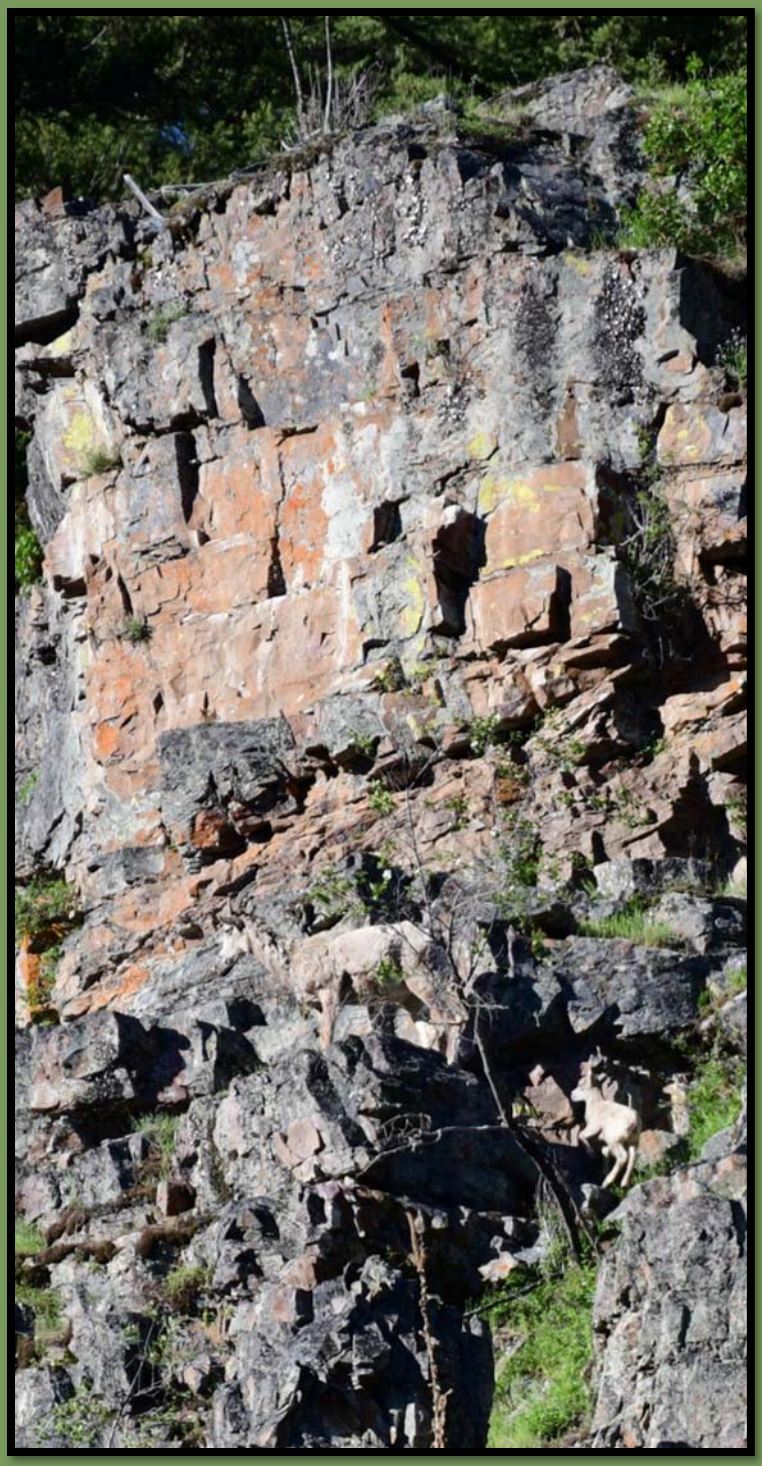
The Marshall Creek Ranch is enrolled as part of the Spring Creek Block Management Area, where hunters benefit from free public hunting access each fall, while we all benefit from hunting's role in managing elk numbers.

Relationships between hunters and landowners are perhaps the most important ingredient in Montana's wildlife legacy.



May 19, 2018

First Lambs



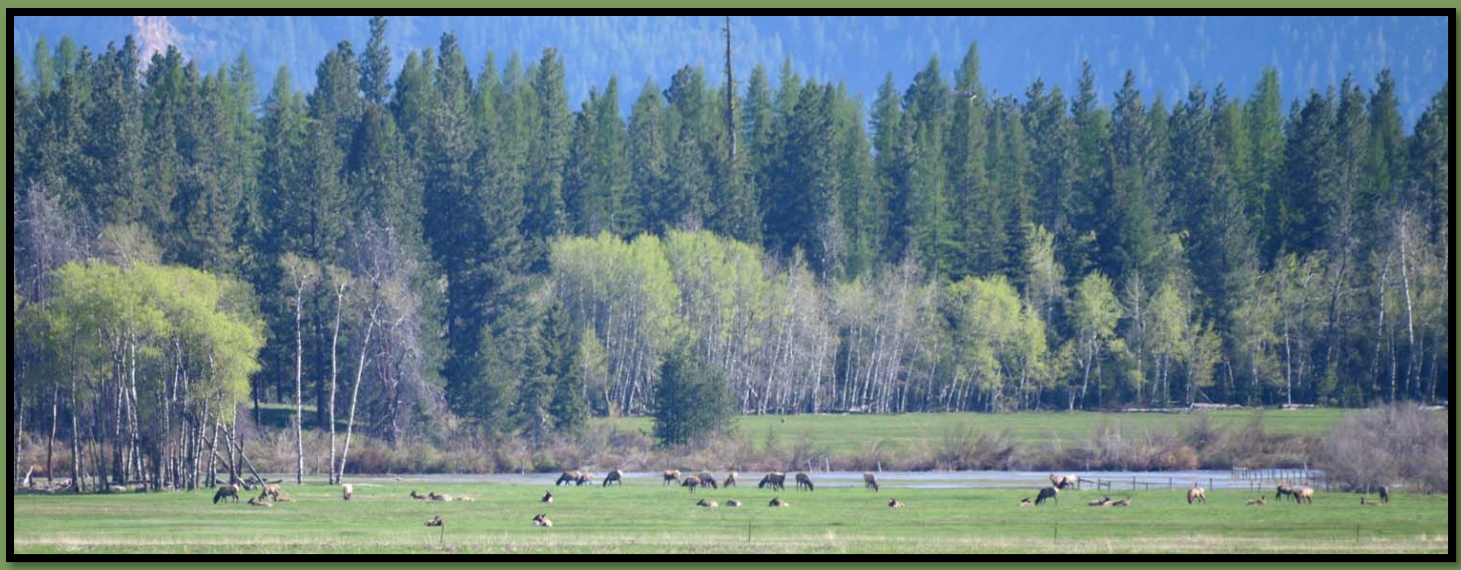
We'd become fairly well acquainted with the bighorn sheep of Lower Rock Creek over the previous several weekends—those visible from the Rock Creek Road, that is. The highlight of our most recent prior visit—May 12, the Saturday before Mother's Day—had been a scattering of heavy ewes sleeping in the sun on a sliderock slope. By all appearances, they were more than ready to give birth, and had we returned the next day, we might have documented a Mother's Day parturition. Instead, we let a week lapse before checking-in again on May 19th.

Our visit was rewarded by observations of at least 4 newborn lambs. We can't be sure that none were born earlier, but evidence suggests that they were born between our visits on May 12 and May 19.

With the aid of a helicopter, Anaconda-based wildlife biologist, Julie Golla, and pilot Joe Rahn counted 85 sheep in Lower Rock Creek (Hunting District 210) on April 25, 2018, up from 56 counted by FWP on April 27, 2016. Included in the 2018 count were 15 lambs that had survived their first winter. Given the trials and tribulations endured by this sheep population, including a pneumonia die-off in 2009-10, road-kills of multiple lambs during some summers, and the Goat Creek Fire's temporary consumption of fall and winter forage, the recruitment of 15 young animals into this population is a very hopeful sign.

Julie and Joe also found 11 rams with 3/4-curl or longer horns.

While the ewes will bring their lambs to the lawns and green fields in the valley bottom before long, they hang high on the rocky cliffs during and shortly after giving birth. A bald eagle landing on a snag overlooking the sheep range brought predation to mind (bottom center). Although bighorns share their lambing habitat with eagles and mountain lions, which are more than capable of taking sheep, the opportunities for a successful strike are few in this particular environment, requiring the element of surprise on firm footing at extremely close quarters. Predation occurs here, but less often than one might imagine.



May 13 & 20, 2018

Wet Spring

FWP added the Dreyer Ranch to the Blackfoot-Clearwater Wildlife Management Area in November 1989. The purpose of the Dreyer Ranch was to continue providing spring habitat for large groups of elk that remain congregated while in early migration from the winter range on the original WMA, on their way toward summer range, extending into the Bob Marshall Wilderness Area.

On May 13, we saw "a hundred" or more elk feeding within the willows and aspen at the far south end of the Dreyer meadows. Normally, the WMA—including the Dreyer meadows—would open to the public at noon on May 15th, but this year the spring opening was delayed until noon on June 1, due to the lingering effects of a long winter and slow spring. The delay will give wildlife's summer habitats more time to shed snow before public activities begin on the winter-spring range, and it will give the land and roads more time to absorb the rivers and ponds of water that formed in May.

On both May 13 and May 20, we noted that the Woodworth Road was closed by Powell County along the north boundary of the old Dreyer Ranch, where rivers and rivulets of runoff carved channels across the county road surface.

On May 13, a small group of elk—separate from the "hundred" at the south end of the meadows—splashed through pools and a full ditch on the north meadow. On our return trip on May 20, bald eagles were seen feeding upon a cow elk carcass beside the same ditch. We suspected that other scavengers, or possibly predators, shared in the removal of meat and bones from this site.

Spring Cleaning

Recently, FWP helped the Lolo National Forest, Montana Department of Natural Resources and Conservation and the Missoula Chamber of Commerce with an outdoor education activity for kids, called Forest Discovery Days. We were hoping to draw the students' attention to songs being sung by wild birds in their native habitat when a boy sidled up to the instructor and commented, "Why bother? When I want to see birds, I fill our feeder."

Before there were bird feeders, there were Black-capped Chickadees. This spring, a pair of Black-capped Chickadees seemed to offer an outdoor education activity of their own to noon-hour hikers beside a local trail. For 2-3 weeks in April, until the trail flooded and became impassible to humans without hip boots, the birds held court, though few humans noticed.

The ritual would begin from one of several possible perches (this page, bottom left) that were located generally 20-30 feet from a broken-top snag. From the discretely positioned perch, a Chickadee could spend a few moments looking for potential nest predators before proceeding to the snag. When a person or dog would venture too close to the snag, the bird would not approach until the coast was clear again. In this way, the birds avoided attracting notice of their nest.

The nesting habitat, in this case, was the cavity exposed by the broken-top of a pole-sized cottonwood. The snag stood about 4 to 5 feet tall and a Chickadee's-length broad (this page, bottom center).

When a Chickadee would fly from its surveillance perch and enter the top of the snag, another Chickadee would fly out of the snag, sometimes synchronously. From this, we deduced that a pair was at work. Both sexes, again presumably, shared in the excavation of decayed wood from the interior of the snag top. The bird entering the snag would disappear completely from view, and only a fast shutter finger on a fast camera could capture a tail feather before it vanished (this page, bottom right).

Perhaps 1-2 minutes later, the bird would emerge with a heaping mouthful of wood chips for disposal (next page, top left). While it might have been more efficient to let loose of the chips, like confetti, from the edge of the snag, the Chickadees would have none of it. Similar to their behavior when approaching the nest, the birds would survey their surroundings for interlopers, and if they detected any disturbance they would retreat back into their mine.

When the coast was clear , they would fly away beyond the observer's sight to let loose of their loads, and then return to a surveillance perch to repeat the whole process, over and over again (next page, top right and bottom).

These behaviors are well known and documented by ornithologists and naturalists. So, while our observations have been interesting and gratifying to collect, they have contributed nothing new to our knowledge of the Black-capped Chickadee. Nothing—except the appreciation and satisfaction of seeing, learning and experiencing.

White-tailed Deer Recruitment

Recruitment in white-tailed deer simply means the number of fawns that survive to their first birthday. Upon reaching that one-year milestone, fawns graduate into the yearling age class.

Becoming a yearling white-tailed deer is biologically significant. Yearling and older deer—until old age—enjoy a higher probability of survival than that of fawns. As yearlings, they are no longer the most vulnerable deer in the forest and may begin contributing as part of the reproductive segment of the population.

FWP biologists sample recruitment in white-tailed deer by counting ~10-month old fawns in early spring, usually by driving forest roads at dawn or dusk. While it would be ideal to wait another month before estimating recruitment, biologists have to take advantage of deer congregations on winter ranges in order to count adequate numbers of deer in a limited amount of time. By May, the deer are often dispersed and counts are more likely to be biased toward deer that live yearlong and readily observed in agricultural fields, when biologists' interests include the deer that may have dispersed onto public lands.

Missoula-based wildlife biologist, Liz Bradley, successfully classified a sample of 435 white-tailed deer as either fawns or adults in April 2018. Her surveys led her west from Missoula to forest roads in Hunting Districts 201, 202 and 203.

For every 100 adults that Liz observed in the 2018 survey, she saw 29 fawns that had survived their first winter. This compares with 45 fawns per hundred adults, which she sampled in similar locations during the same season in 2017.

What caused the apparent decline in white-tailed deer recruitment in 2018?

Winter is a likely answer, but which one? Winter 2018 was severe in terms of snow condition, and it was prolonged. For the winter of 2018 to be the cause of lower recruitment, quite a few fawns must have died during this winter. FWP did encounter quite a bit of deer winterkill across parts of west-central Montana in this past winter.

It's harder to assess what role the winter of 2017 might have played in reduced fawn production and survival going into the winter of 2018.

For wildlife management purposes, the result of lower recruitment is the same, regardless of the immediate causes. Recruitment surveys demonstrate that white-tailed deer endured a population stress in the Lower Clark Fork recently that should be weighed as we think about habitat and hunting regulations in the future. And we might hope for an easier winter upcoming.

On the bright side, we did not see effects on white-tailed deer like those that were triggered by the severe winter of 1996-97, which some of us remember well, and which will always serve as a benchmark for what winter can be. In that winter, roughly half of the white-tailed deer population was lost to winterkill of fawns and adults, as well as reduced fawn production the following spring, across a good part of Region 2.

Pictured on preceding page:

White-tailed deer out and about during a break in the weather near the Aunt Molly Wildlife Management Area in March 2018.

This page, top right:

Deer following single file on trails through deep snow on the Blackfoot-Clearwater WMA in February 2018. FWP would classify the last deer in line as a fawn, and the others are adults for the purposes of assessing recruitment.

This page, center:

During periods of deep and crusted snow, we noticed white-tailed deer using stream bottoms for travel routes and as locations for accessing forage along the edges without having to expend energy pawing through the snow.

This page, bottom right:

White-tailed deer (fawn and adult) on a livestock feeding ground in the Blackfoot in March 2018, along with Canada Geese.

Western Meadowlark near Woodworth, Montana, on May 13, 2018.

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