

Montana Fish, Wildlife & Parks Region 2 Wildlife Quarterly June 2021



Wild turkeys in pine forest near Missoula in April 2021.



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Montana Fish, Wildlife & Parks Region 2 Wildlife Quarterly

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

Canada Geese at Tower Street Conservation Area on February 22, 2021.



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.

Burning Love

Elvis and the Dusky Grouse have this much in common: burning love.

Perched on a fallen snag, the Dusky Grouse is a picture of focus (below).

It's mating season in the Rockies, and this male has but one thing on its mind.

*I feel my temperature rising
Help me, I'm flaming
I don't know which way to go.*

We'd like to imagine that Dave Nikonow, the wildlife biologist behind the camera lens, was humming along to *Burning Love* while composing this unique photograph, which captures the intersection of crucial ecological processes in the natural history of Dusky Grouse.

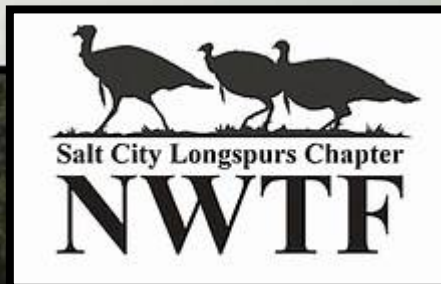
In the foreground (below), a male grouse adopts its typical springtime position on a fallen log, where it

hoots and displays to attract potential mates.

In the background (below), one of the essential natural agents of habitat maintenance and enhancement is at work. Fire, in this case prescribed fire, opens the understory in a patchy mosaic pattern that provides a desired interspersed pattern of openings and cover, which Dusky Grouse have evolved to exploit.

Since 2015, Dave has been in a partnership position with the National Wild Turkey Federation (NWTf), working with Montana Fish, Wildlife & Parks (FWP) and Region 1 of the U.S. Forest Service, based in Missoula. The primary functions of his position are to promote, design, and implement management activities that enhance wildlife habitats and promote healthy forest ecosystems in the Bitterroot National Forest and surrounding western Montana National Forest complexes that will benefit wild turkey and forest grouse populations.

In this issue of the *Quarterly*, we'd like to *light* [your] *morning sky with burning love* for Dave's efforts and accomplishments in Region 2, along with other related project updates. Hoot along, if you will.



"Horseshoe West" burn treatment near Seeley Lake on May 14, 2019.

Upland Game Bird Enhancement Program



Dave Nikonow's position with the National Wild Turkey Federation is partially funded by FWP's Upland Game Bird Enhancement Program (UGBEP).



Ring-necked pheasant flushed on private land north of Helmville on January 27, 2019.

The principal outcomes of the UGBEP are:

- establishment or enhancement of game bird habitats that benefit gray partridge, forest grouse, ring-necked pheasants, sage grouse, sharp-tailed grouse and wild turkey;
- conservation of valuable game bird habitats;
- enhanced public game bird hunting opportunities;
- release of pen-reared pheasants into suitable habitats to establish or enhance populations; and
- wild turkey transplants in suitable areas generally devoid of turkeys.

Resident license sales for upland game bird and combination licenses contribute \$2 per license to the UGBEP. Non-resident licenses for upland game bird and big game combination licenses contribute \$23 per license sold. Since 2013, sales of nonresident 3-day bird licenses contributed \$10 per license to the UGBEP.

Program implementation is guided by the long-term UGBEP Strategic Plan (adopted by the Fish & Wildlife Commission in 2011). The program is delivered statewide on projects located on private or public lands and includes collaborative efforts with private landowners, government agencies, and conservation partners.

Statewide, in fiscal years 2019 & 2020, the UGBEP enrolled 170 new projects and 3 new cooperative conservation contracts, enhancing and conserving 33,090 acres of upland game bird habitats and supporting 232,256 acres of free public upland game bird hunting opportunity. Types of projects included aspen regeneration, nesting cover, shelterbelts, grazing management, food plots, retention of CRP-enrolled lands through Open Fields and CRP seed cost-shares, and short-term and long-term habitat leases.



Sandhill cranes and turkeys on private land north of Helmville on March 22, 2020.

Upland Game Bird Enhancement Program *continued* . . .



Ruffed grouse along a Forest road in Mineral County on April 18, 2021.

Dave Nikonow's position is a strategy identified for Region 2 in the UGBEP Strategic Plan.

[Upland Game Bird Enhancement Program | Montana FWP \(mt.gov\)](#)

The Strategic Plan characterizes the public's opportunities to access and enjoy upland game birds in Region 2 as those involving forested public lands and mountain grouse primarily. By mountain grouse, we mean Dusky Grouse (also known as Blue Grouse), Ruffed Grouse and Spruce Grouse (also known as Franklin's Grouse).

Mountain grouse species are native to Region 2.



Dusky grouse near Mount Jumbo WMA on May 8, 2016.

Dusky Grouse migrate upward in elevation, during September, from open forests with abundant balsam-root to high ridgelines where they eat conifer needles through the winter. Ruffed and Spruce Grouse don't migrate; Ruffed Grouse are found along wooded stream courses and Spruce Grouse are strongly tied to relatively dense, conifer forests.

An estimated 1,622 hunters harvested 2,921 Dusky Grouse in Region 2 in 2020. Similarly, about 1,655 hunters took home 4,009 Ruffed Grouse and 675 hunters took 1,182 Spruce Grouse last season in Region 2.

Pheasants occur in Region 2, but mostly on small parcels of private land. Only about 240 hunters killed 607 pheasants in Region 2 in 2020. Hungarian (gray) Partridge also occur in low, scattered numbers, resulting in about 90 hunters harvesting about 176 birds last year.

While non-native Pheasants and Huns persist on the landscape, the native Sharp-tailed Grouse is thought to be extirpated from Region 2 after maintaining a tenuous existence on open shrublands for the latter half of the twentieth century. Planning continues for a reintroduction of Sharp-tailed Grouse in suitable habitat in the coming few years.

Opportunities to enhance public hunting for upland game birds in Region 2 clearly center on mountain grouse, on public lands. That's why our best use of UGBEP funds, on this landscape, is to leverage partnerships for habitat enhancements on the National Forests.

Resources Available . . .

. . . For Upland Game Bird Habitat Enhancement?



Above: “Frenchtown Face” burn treatment on the Lolo National Forest on April 23, 2018; photo by Dave Nikonow. Below: Male Dusky Grouse with diagnostic orange-to-red eye comb; photo by Cory DeStein.

They may not be wearing the emblem of a Dusky Grouse on their sleeves, but professional teams such as these wildland firefighters, implementing prescribed burns on the Lolo National Forest, await only the added perspective and expertise provided by Dave Nikonow’s partnership position to adjust their treatments of forests on the wildland/urban interface for the greater benefit of upland game birds.

Arguably, there is not a shortage of bodies to do the work. Land management teams are available to treat habitat on our National Forests, and the increasing emphasis in recent years on treating fuels and managing wildfire severity has expanded possibilities for partnership.

Imagine what could be done—what is being done—if all these people, and more, were working to benefit upland game birds.

The burden falls back on the wildlife biologist to specify what upland game birds need for habitat and for habitat treatments. That’s what partnerships and leveraging are all about.

Through the eyes of someone like Dave, who can see the landscape in somewhat the same way that a grouse or a turkey sees it, there can be a lot of compatibility between habitat enhancement for birds and the other objectives of forest management.

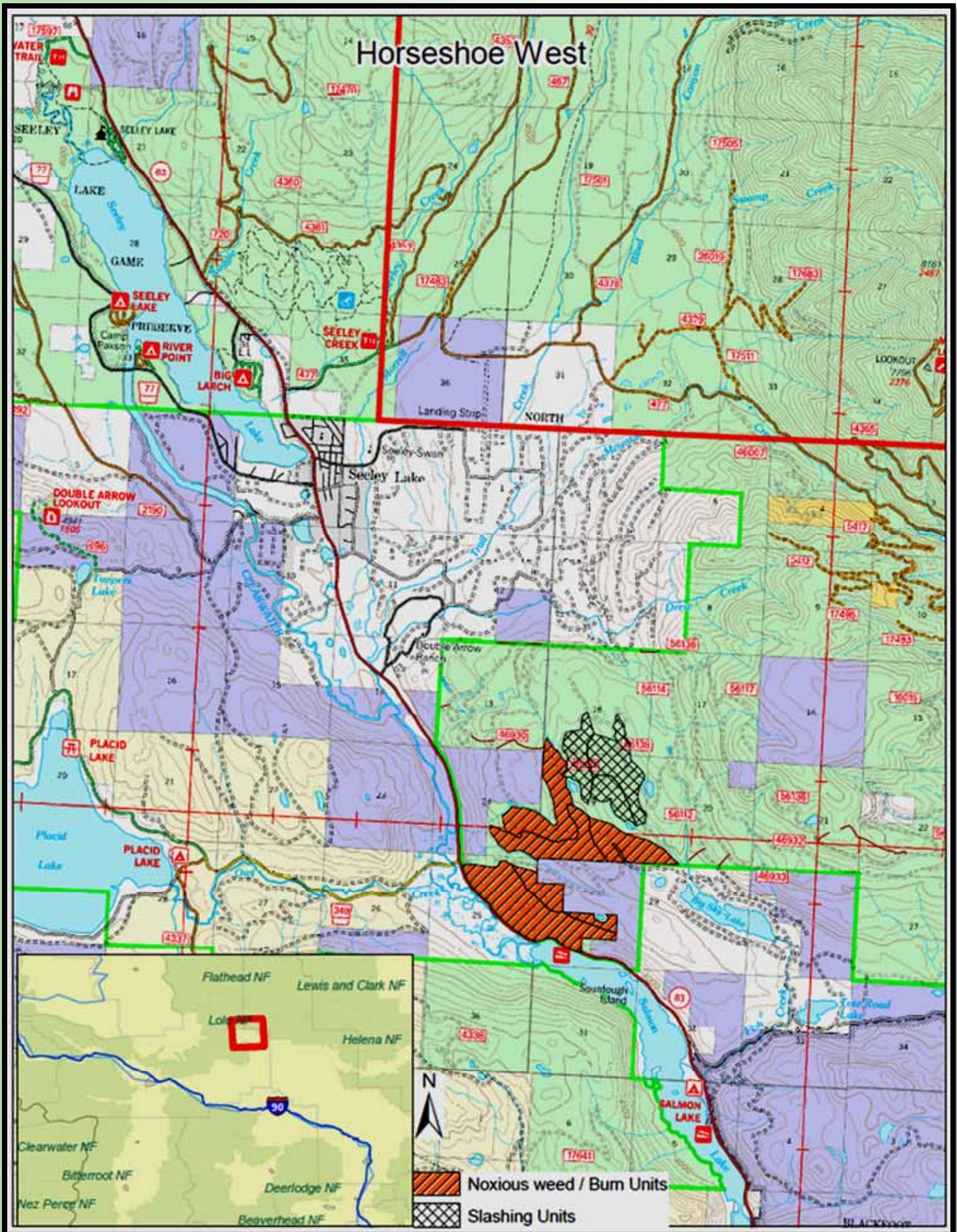
Allow us to tip our caps to Region One of the U. S. Forest Service in Missoula for sharing with the National Wild Turkey Federation and FWP to add that wild bird element to Forest management.



Male Dusky Grouse
Displaying on 31 May 2020
Photo by Cory DeStein



Horseshoe West Project (5 miles SE of Seeley Lake)



Horseshoe West Project (5 miles SE of Seeley Lake)



Above: Grass regrowth on “Horseshoe West” burn treatment on the Lolo National Forest on April 23, 2018; photo by Dave Nikonow. Right: Forbs sprouting after the burn; photo by Dave Nikonow.

- ◆ Hand thinning
- ◆ Weed management
- ◆ Prescribed fire

This project area is a pine savannah and grassland restoration project on the Seeley Lake Ranger District of the Lolo National Forest located just north of the Blackfoot-Clearwater Wildlife Management Area (WMA).

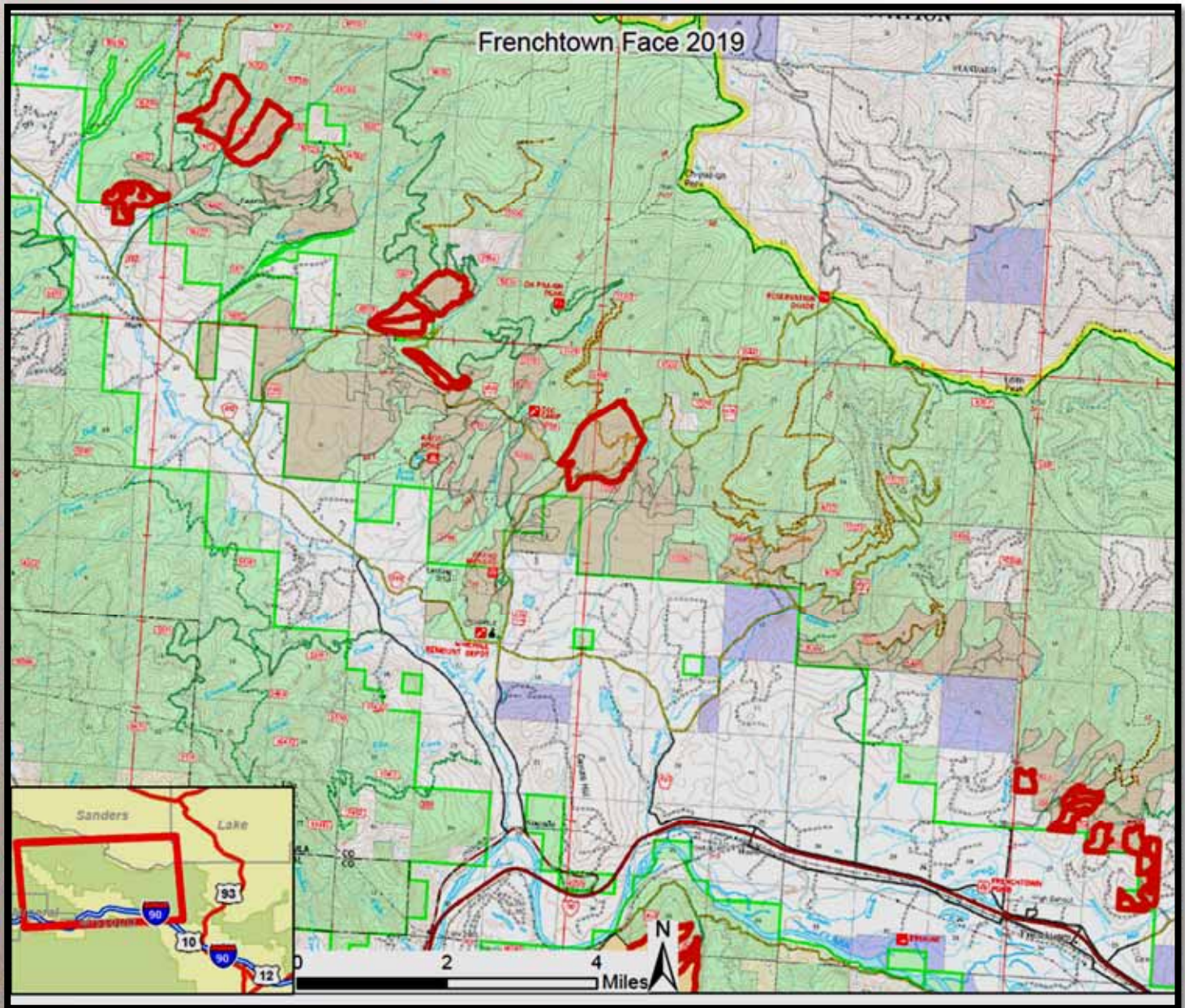
Treatments include hand thinning of small diameter conifers, prescribed fire, and weed management. These treatments will restore a more open forest type with high abundances of grasses and forbs. Herbicides will be applied throughout the project area to ensure that native browse and forage species are successful in outcompeting noxious weeds after burning.

Treatments will enhance foraging conditions for wild turkeys, dusky grouse and ruffed grouse as

well as fall and winter range for elk and mule deer using the Blackfoot Clearwater WMA complex.

Burning occurred in 2019, but no burning was accomplished in 2020 due to regional restrictions on prescribed burning. However, the district did complete 10 acres of thinning on one unit. Dave will continue working with district staff to ensure treatments are designed to promote quality game bird habitat through the reservation of leave patches.

Frenchtown Face Project (15 miles W of Missoula)



Above: The salmon-colored parcels are units to be treated on the Ninemile District. The red-outlined units are prioritized to be treated in the next couple of years. About 400 acres will be treated to enhance upland game bird habitat within the project area.

Left: Beneficiaries of the Frenchtown Face Project include these wild turkeys that were foraging alongside the road up Lower Ninemile on 4 April 2021. They seem to be pecking for green grass shoots and forb or shrub leaves.

Frenchtown Face Project (15 miles W of Missoula)



- ◆ Pre-commercial thinning
- ◆ Prescribed fire

The Frenchtown Face Ecosystem Restoration Project is an ongoing effort on the Ninemile Ranger District of the Lolo National Forest. It is intended to restore ponderosa pine and improve the health of this forest while reducing the threat of uncontained fire in the Wildland/Urban Interface (WUI).

The prescribed fire treatments will open the canopy and improve forb, grass, and shrub growth. This should increase insect density, which is important forage for wild turkey and forest grouse during brood rearing.

Small forest openings (0.5-3 acres) will promote the growth of snowberry, wild rose, and other shrubs, which provide quality forage and improved nesting habitat for wild turkey and ruffed grouse. The treatment will also benefit existing elk and deer winter range.

Burning occurred in previous years, but not in 2020 due to regional restrictions on prescribed burning. This project was awarded \$3,000/year over three years by the UGBEP. Dave plans to work with the district on unit level design to assure treatments are beneficial to upland game birds.

Above and below: Frenchtown Face prescribed fire treatment on 23 April 2018. Photos by Dave Nikonow.



Vegetation Management for Insect Production

For some of us who've made a career of managing for large mammals, the concept of managing a forest or grassland to produce insects for a wide variety of bird species has taken some getting used to. As Dave Nikonow pointed out on page 11, when explaining the

Frenchtown Face Project, insects are important for nourishing the broods of upland game birds. Come to think of it, insects are an important dietary item for more species than grouse. Increasingly, we think of purposely managing habitat to produce insects.



Above: Eastern Kingbirds near Bearmouth on 2 August 2020. Below: Tree Swallow at Brown's Lake on 4 July 2019.

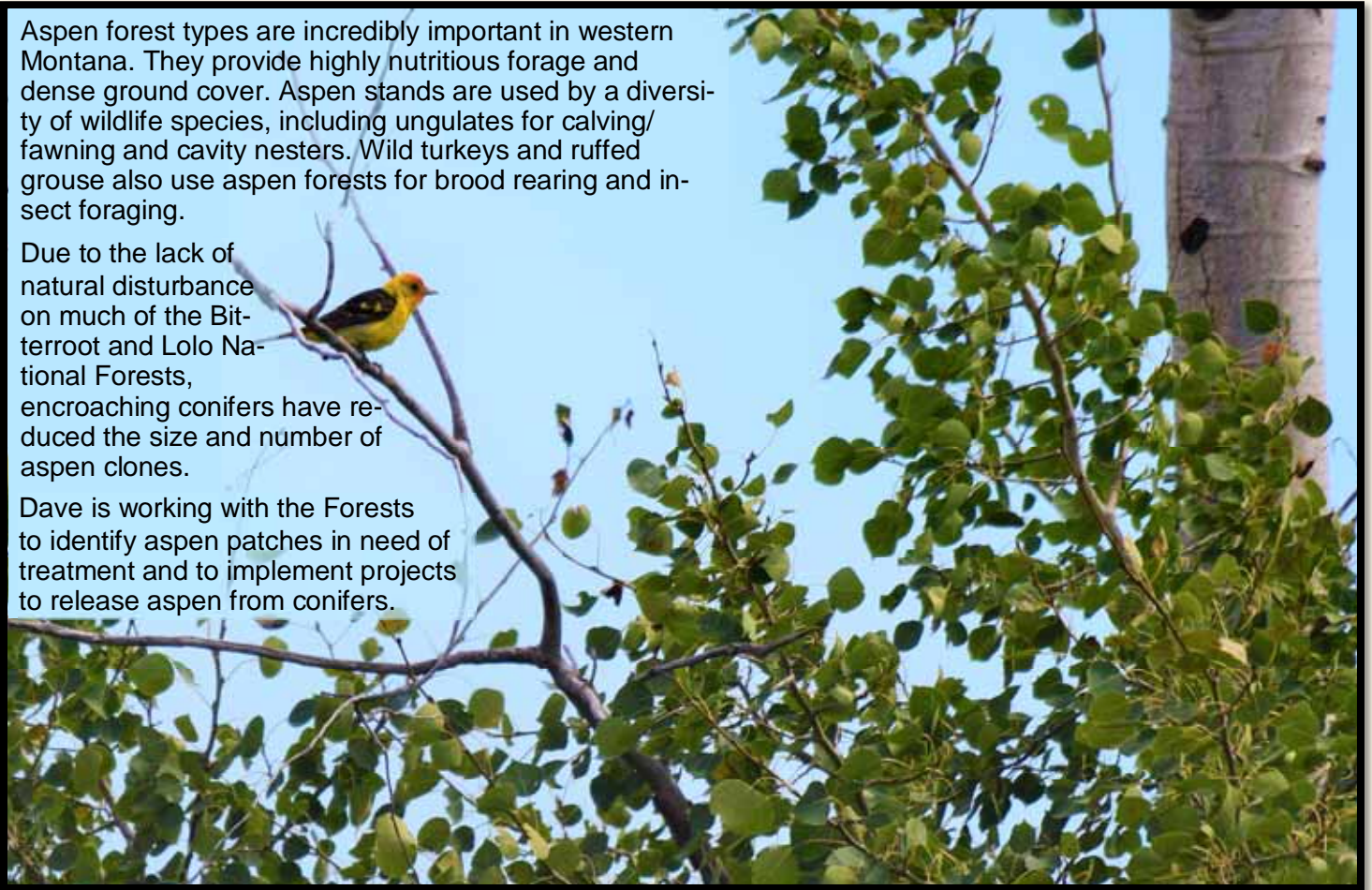


Aspen Management for Insect Production

Aspen forest types are incredibly important in western Montana. They provide highly nutritious forage and dense ground cover. Aspen stands are used by a diversity of wildlife species, including ungulates for calving/fawning and cavity nesters. Wild turkeys and ruffed grouse also use aspen forests for brood rearing and insect foraging.

Due to the lack of natural disturbance on much of the Bitterroot and Lolo National Forests, encroaching conifers have reduced the size and number of aspen clones.

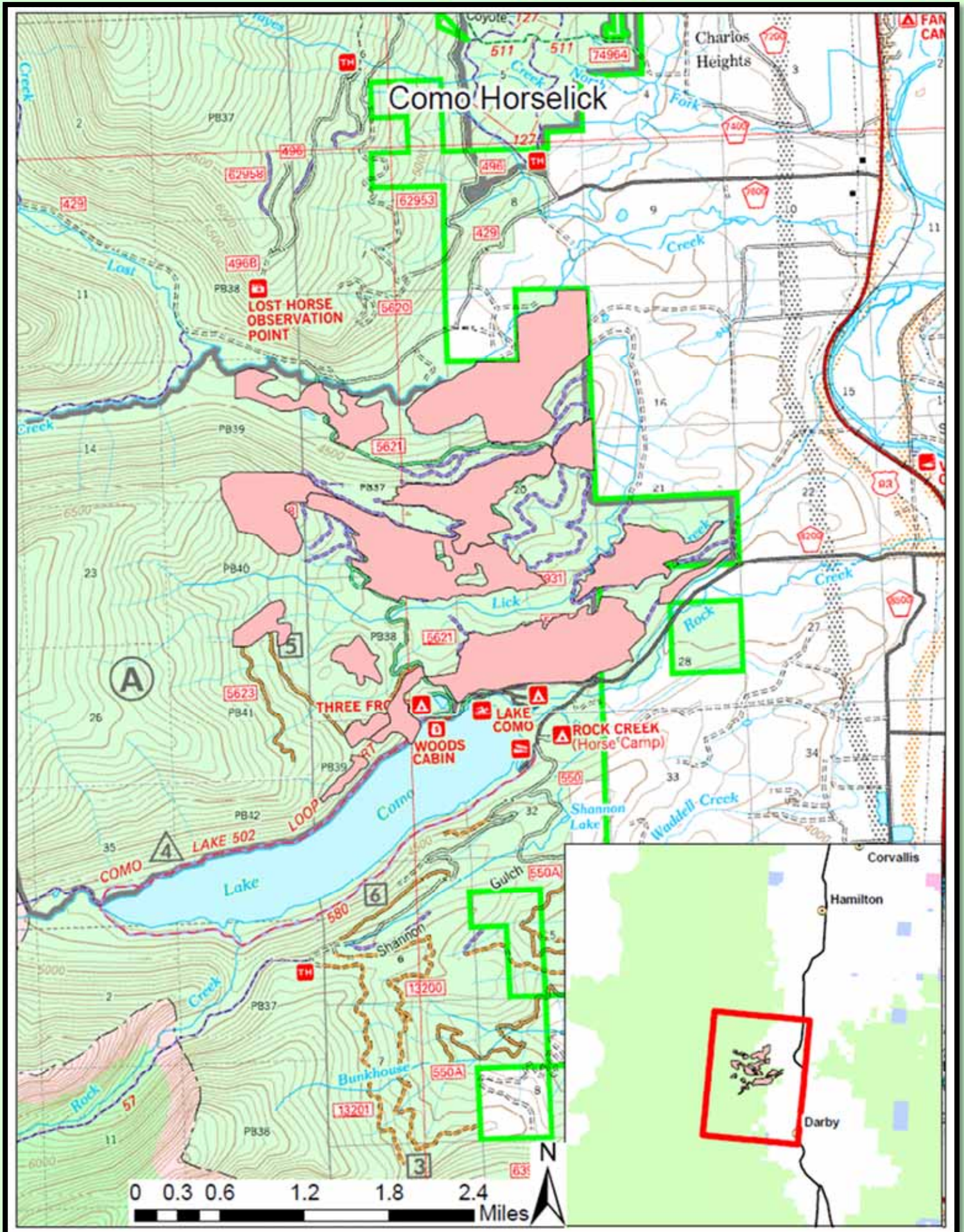
Dave is working with the Forests to identify aspen patches in need of treatment and to implement projects to release aspen from conifers.



Above: Western Tanager in aspen on the Blackfoot-Clearwater Wildlife Management Area (BCWMA) on 8 August 2020.
Below: Chipmunk (likely a yellow-pine chipmunk) in aspen on the BCWMA on 17 June 2017.



Como Horselick (4 miles NW of Darby)



Como Horselick (4 miles NW of Darby)

- ◆ Hand thinning
- ◆ Prescribed fire

This is a fuels reduction project on the Darby Ranger District of the Bitterroot National Forest. Treatments, which include hand thinning and prescribed burning, are intended to reduce the overstocked understory, increase canopy spacing and restore ponderosa pine savannah. These fuel treatments will result in improved foraging conditions for wild turkeys and ruffed grouse. Increased sunlight and water availability will enhance the growth and vigor of native forbs and shrubs. Additionally, prescribed fire will stimulate the growth of plants and recycle soil nutrients.

Dave worked with the fuels staff to integrate the retention of reserve patches throughout the project to increase unit specific diversity and provide cover for a diverse array of wildlife.

Treatments were accomplished in 2018, but none in 2020 due to regional restrictions on prescribed burning. However, the district has identified 328 acres of priority

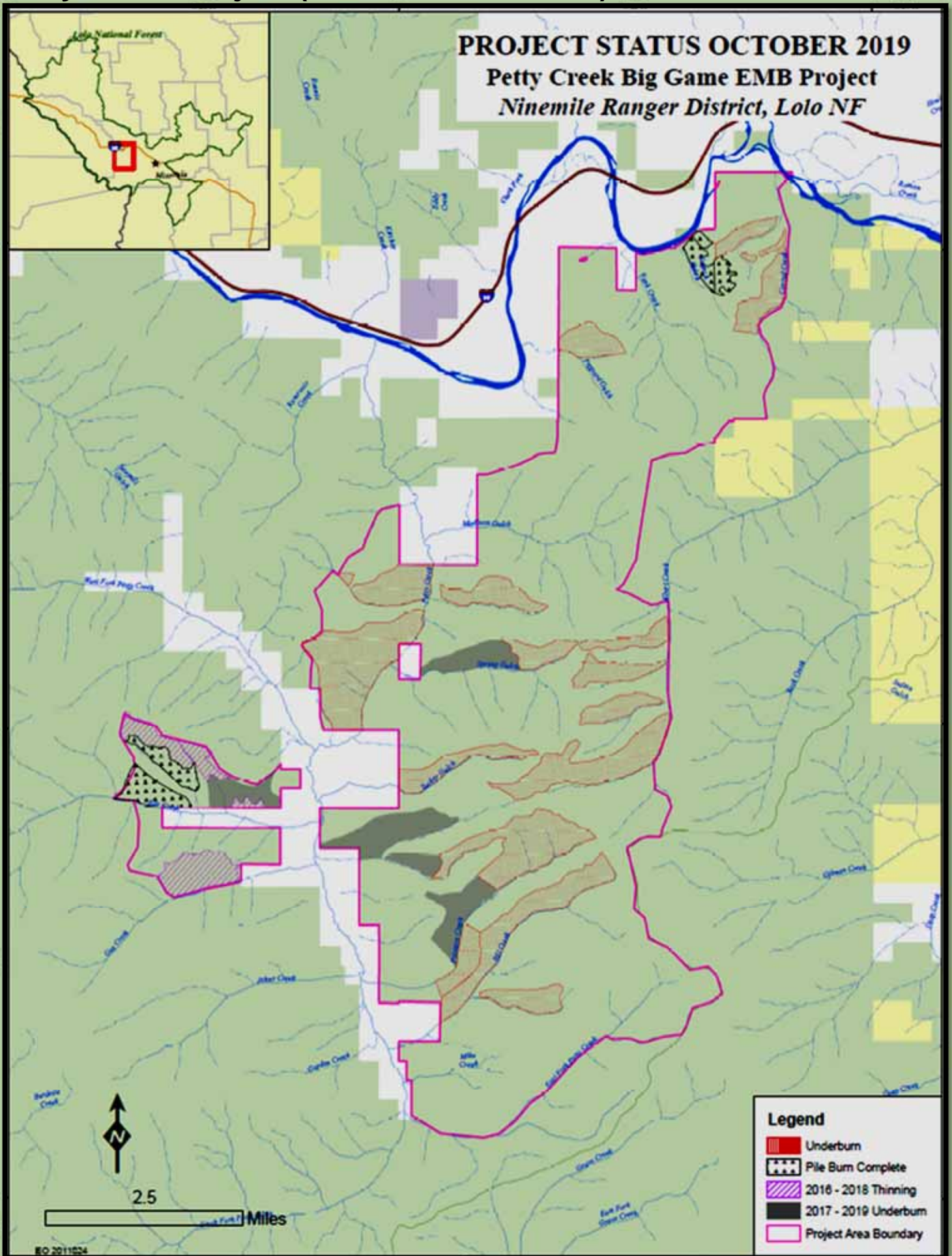


units to treat in 2021. Dave plans to continue working with district staff to develop treatment designs and assist in pursuing supplemental project funding.

Above: Ruffed grouse need winter cover close to food; photo by Cory DeStein. Below: Prescribed burn on the Como Horselick project on 26 September 2018; photo by Dave Nikonow.



Petty Creek Project (1 mile S of Alberton)



Petty Creek Project (1 mile S of Alberton)

This Ecosystem Maintenance Burning project on the Ninemile Ranger District of the Lolo National Forest will mechanically remove conifers and prescribe burn areas suffering from conifer encroachment. Additionally, units may be treated for noxious weeds to limit their spread and enhance the forage quality.

This area is critical habitat for bighorn sheep, elk, mule deer and wild turkeys. Dusky grouse will also benefit from treatments and shrub and grass development will increase along treated forest edges. Wild turkey brood rearing habitat will also improve with the increased growth of shrub and grass communities that support healthy insect populations.

Treatments were accomplished in 2016-2019, but not in 2020 due to regional restrictions on prescribed burning. This project was awarded \$4,000/year over three years by the UGBEP. The district plans to treat up to 1,000 acres in 2021 pending funding and burn windows.

Dave plans to continue working with the fuels crew to implement prescribed fire in a manner most beneficial to forest grouse and wild turkey habitat. This however will be minimal maintenance as the district staff incorporates many of these features into implementation because of past collaboration.



Above: Petty Creek prescribed treatment on 14 May 2018; photo by Dave Nikonow. Below: Bighorn rams up Petty Creek on 17 April 2020; photo by Liz Bradley.



Upland Game Bird Partnership Projects on National Forests

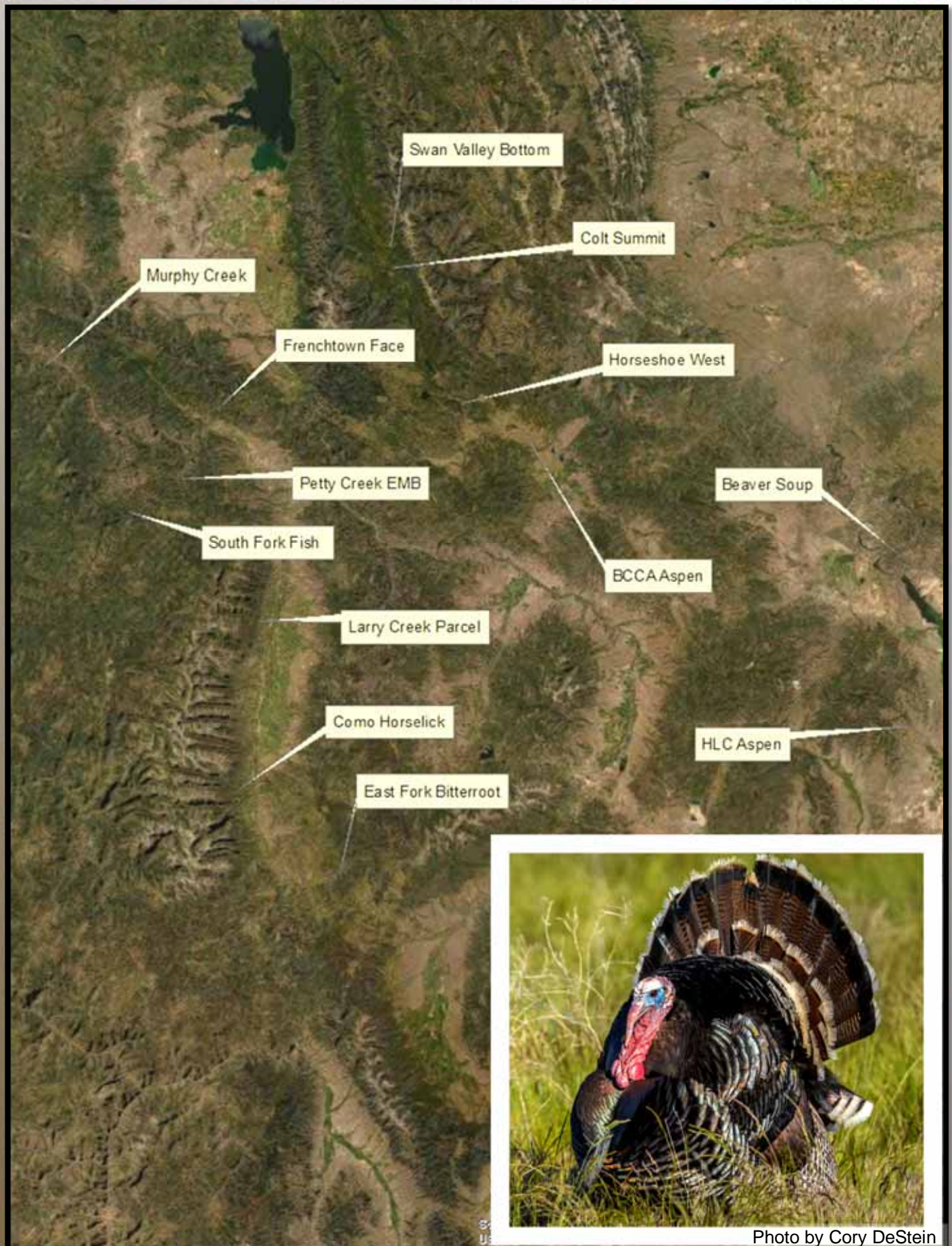


Photo by Cory DeStein

Upland Game Bird Partnership Projects on National Forests



Acres of upland game bird habitat enhanced on National Forests in FWP Regions 1, 2 & 3 since 2015.

(See map of projects on previous page.)

Project Name	Acres
Swan Valley Bottom	104
Murphy Creek	120
Colt Summit	100
Frenchtown Face	2,889
Horseshoe West	869
Petty Creek Ecosystem Management Burn (EMB)	3,698
South Fork Fish	597
BCCA Aspen	30
Beaver Soup	2,436
Larry Creek Parcel	120
Como Horselick	620
HLC Aspen	5
East Fork Bitterroot	1,177
Total Acres	12,765



Spruced-up



It's not hard to confuse a Spruce Grouse with a Dusky Grouse. Above: Spruce Grouse on 24 September 2008; photo by Liz Bradley. Below left: Dusky Grouse on Mount Jumbo on 1 May 2020; photo by Liz Bradley. Below right: Dusky Grouse on 31 May 2020; photo by Cory DeStein.

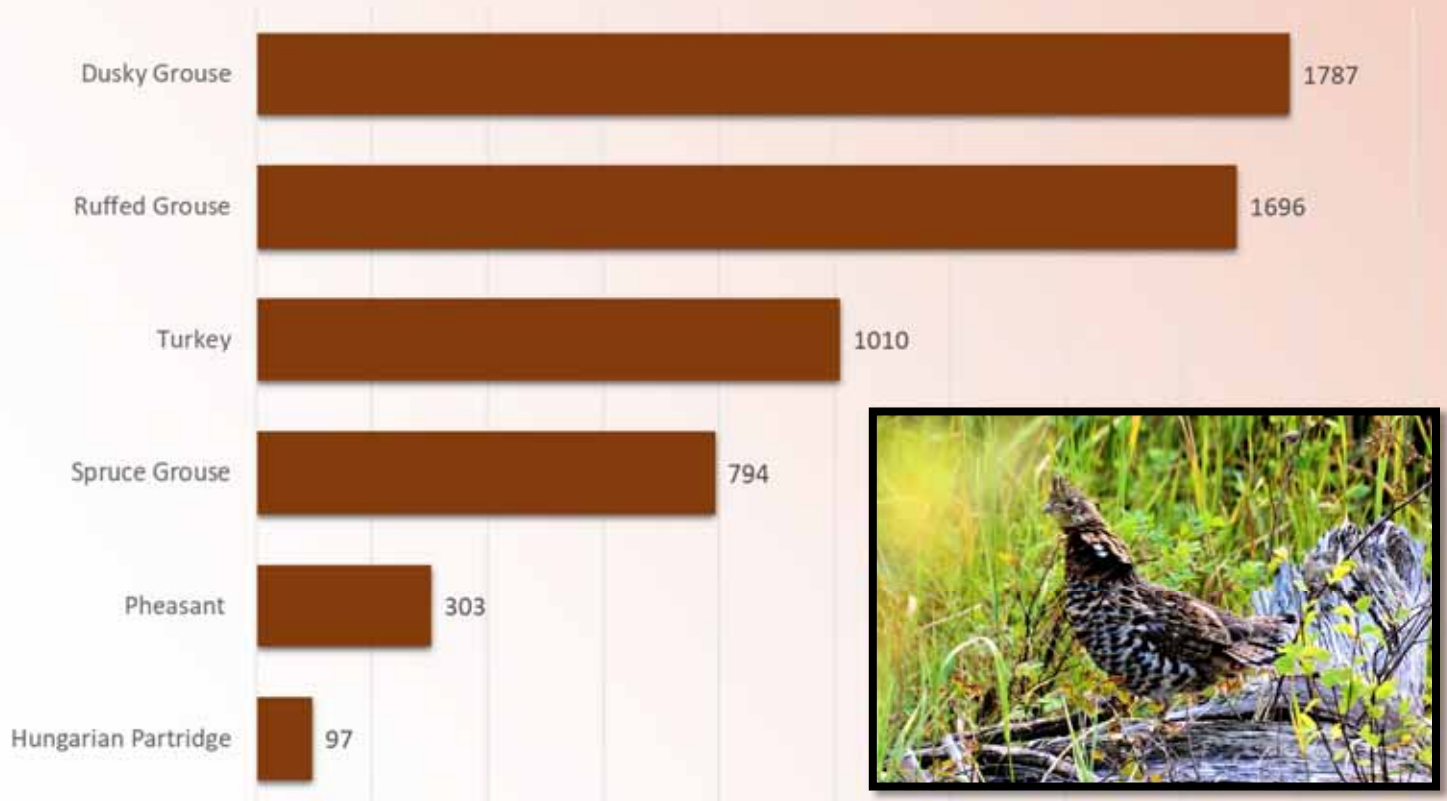




Above: Female Spruce Grouse in Bear Creek (Bitterroot) on 4 October 2016. Below: Ruffed Grouse along Hughes Creek on 14 September 2019.

Region 2 Upland Bird Harvest in 2020

*Latest available turkey harvest data is from 2019



First Light on Dusky Grouse Trends



Above: Male Dusky Grouse on Mount Jumbo on 12 May 2018. Below: Balsamroot blooms accompany grouse surveys.

Good Old Days

One hopes to be impressionable as a young wildlife biologist. And one of the things that was impressive in the 1980s was the great abundance of Dusky Grouse—then known as Blue Grouse—that hunters remembered from the 1960s and 1970s. The Sapphire crest, and ridges similar to the Sapphire crest, were said to be thick with grouse, back in the day. By the late 1980s, the apparent decline in Dusky Grouse seemed to be the conversation starter of the day.

We don't hear so much about the halcyon days of Dusky Grouse now, possibly because we've all adapted to a new normal in grouse abundance as the decades have passed. Still, some of us have been around long enough to know, or presume, that we've already lost a lot of what we inherited, and that more change on the landscape could lead to more losses.

Responsibility

As your wildlife stewards, would we be in a position to credibly detect a future loss of Dusky Grouse before it became irreversible? For the century or so that science-based wildlife management has existed, the answer to this fundamental question about Dusky Grouse has been “no.” Methodologies did not exist.

Response

Fast forward to 2021 and the ground-breaking effort by Liz Leipold to develop a method for a first-ever estimate of Dusky Grouse population densities across Montana and trend surveys for each of the seven FWP administrative regions.

It turns out that Dusky Grouse have been declaring their densities forever. At last, by way of Liz's research, we're breaking the code of the grouse's hoot.

Partnership

Liz Leipold is a doctoral candidate at the Wildlife Habitat Ecology Lab, in the Department of Animal and Range Sciences at Montana State University, working under the direction of Dr. Lance McNew. The four-year project, initiated in collaboration with FWP in 2019, involves working sequentially through a series of trials and tests, one leading to the next, with the end product becoming a tool that FWP biologists expect to apply in the field periodically for the foreseeable future.



First Light on Dusky Grouse Trends *continued . . .*



Above: Mountains of Dusky Grouse habitat surround the Missoula Valley on 9 June 2016.

Methods

Liz's Leipold's team and FWP biologists are welcoming sunrises in Dusky Grouse habitat again this spring, all around Montana.

In 2020, survey routes were visited during 10 April-30 May and consisted of 6 points spaced 400 meters apart. Biologists performed 4 point-counts per point in one morning. Biologists played electronic calls of female Dusky Grouse through a portable music player or cell phone and speaker at each point. The recordings consisted of 30 seconds of calling and 30 seconds of silence until the entire four minutes of survey time had elapsed. Biologists recorded all grouse observed during each period and measured the distance to each observed grouse with a laser rangefinder. They also recorded all dusky, ruffed, and spruce grouse observed (by sight or sound) while walking to and between survey points.

Preliminary Results

It's important to appreciate that the survey methodology is, by itself, a crucial discovery of Liz's work. Each detail of the survey protocol is the result of trial, test and adaptation, with a healthy dose of statistical modeling. If you think about it, the ability to estimate grouse population densities was always available to us, if we had unlimited time, people and funding to do the field work. The challenge has been to estimate

grouse densities within the real world constraints of limited time, personnel and funding. And, we might bear in mind that no one has been able to achieve that measure of success before now.

Using the new methods in 2020, biologists detected dusky grouse at 37 (10.4%) of 354 survey points in Region 1; 79 (20.6%) of 384 points in Region 2; 37 (9.5%) of 391 points in Region 3; 25 (6.5%) of 384 points in Region 4; and 41 (17.7%) of 231 points in Region 5. The average number of dusky grouse observed at each point was 0.12 in Region 1, 0.27 in Region 2, 0.12 in Region 3, 0.07 in Region 4, and 0.25 in Region 5.

Within Dusky Grouse habitat (as predicted by the model that Liz developed), the probability of detecting Dusky Grouse in 2020 was highest in Region 2.

Reference

ESTIMATING THE OCCUPANCY, ABUNDANCE, AND DENSITY OF DUSKY GROUSE: DEVELOPING METHODS OF UNBIASED POPULATION MONITORING IN MONTANA

PROJECT No. 18-636; 2020 ANNUAL REPORT
Wildlife Habitat Ecology Lab
Department of Animal and Range Sciences
Montana State University



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