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Attachments 3 N. Schultz 1, 2, 3

Schultz 3 is duplicate of 8335.

As biologists, wildlife advocates, and members of the scientific community, we are writing to express our strong support for maintaining the ecological integrity of the Gallatin Range by establishing a 230,000-acre or larger wilderness under the 1964 Wilderness Act. Wilderness designation is recognized as the "Gold Standard" for preserving wildlands and ecological values.

The scientific community recognizes that large protected areas with connectivity to other large protected patches is the best way to preserve high-quality wildlife habitat and permit the continued influence of ecological processes like wildfire, predation, migration, and other natural influences.

The Gallatin Range is the most significant unprotected wildlands in the northern Greater Yellowstone Ecosystem. In particular, the Buffalo Horn and Porcupine (BHP) drainages that lie immediately north of Yellowstone National Park are critical to the biotic fidelity of the Yellowstone Ecosystem.

The Buffalo Horn-Porcupine was recognized early on for its wildlife values. In 1910 Forest Service Chief Gifford Pinchot advocated protecting the southern Gallatin Range as a wildlife refuge. A year later, the state of Montana created a wildlife refuge in the Buffalo Horn and Porcupine portion of the Gallatin Range. In recognition of the inherent wildlands values of the range, in 1977, some 155,000 acres, including the BHP drainages, were designated the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area by Congress.

The Buffalo Horn Porcupine area has some of the best grizzly bear habitat outside of Yellowstone National Park. It is also vital elk winter range and a migration corridor. These drainages also support bighorn sheep, moose, mountain goat, wolverine, cougar, wolf, and mule deer. It is also one of the best areas outside of Yellowstone NP for the restoration of wild bison herds. Both of these drainages also possess native Westslope cutthroat trout, a species once proposed for listing under the ESA. According to the Montana Heritage Program, 18 birds, eight mammals, three fish, three amphibians, and one reptile as "at risk" or declining in numbers, demonstrating the need to provide the most durable protection possible for this area.

It has long been recognized by the scientific community that protected areas in isolation fail to preserve species and ecosystem processes adequately. Wildlife corridors provide connectivity, sustaining vital natural processes, wildlife populations, and biodiversity while allowing species to move in response to climate change. The Gallatin Range is a recognized wildlife corridor linking YNP to the Northern Continental Ecosystem.

A biological assessment of the range by Lance Craighead also demonstrated the biological significance of the range.

_1:}!!_p://www.craigheadresearch.org/uploadsLZ./_[sect]_/9/0/7690832/executive summary hpbhwsa.pdf

Another study by Steve Gehman lists the wildlife values of the range. <http://www.wildthingsultd.org/wp-content/uploads/2012/08/Gallatin-Range-fullreport-with-photos.pdf>

A comprehensive analysis of conservation values across the entire Greater Yellowstone Ecosystem identified the Gallatin Range as a critical area for protection. Noss RF, Carroll C., Vance-Borland K. and Wuerthner G. 2002. A multicriteria assessment of the irreplaceability and vulnerability of sites in the Greater Yellowstone Ecosystem. *Conservation Biology* 16: 895-908

<http://onlinelibrary.wiley.com/doi/abs/10.1046/j.1523-1739.2002.01405.x>

With its high wildlands and ecological values, we the undersigned request that approximately 230,000 roadless acres of the Gallatin Range be given the full protection of the Wilderness Act by Congress to ensure the continued ecological integrity of these public lands.

To learn more about the Gallatin Range's wildlands values, see this link:

<http://mountainjournal.org/gallatin-mountains-in-mountain-lands-deserve-wilderness-protection>

A map showing the Gallatin Range roadless lands can be found here:

http://www.fws.usda.gov/Internet/FSE_DOCUMENTS/fs_eprd577294.pdf

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The 2012 Planning Rule requires the revised plan to address connectivity; this topic was also a subject of public comments. All revised plan alternatives have forestwide plan components to address connectivity, and in addition, revised plan alternatives vary by inclusion of "key linkage areas."

Plan direction would be consistent with the 2012 Planning Rule and associated directives, and emphasize adaptive management and consider the best available scientific information;

Habitat connectivity would be improved under the revised plan alternatives by the prioritization of certain areas on the Custer Gallatin National Forest to maintain uninterrupted habitat corridors. These areas would limit activities and would limit disturbance in certain years.

Only alt D can maintain an uninterrupted habitat corridor

There could be a trend to non-forests after wildfires due to regeneration failure (Stevens-Rumann et al. 2018). This trend is likely to continue in the future across all forest types as large wildfires remove local seed source and suitable climate space for tree regeneration becomes increasingly rare Monitoring tree regeneration will provide critical information on possible

climate change effects to this vulnerable life stage (Stevens-Rumann et al. 2018).

monitoring tree regeneration is not enough. Soil moisture measurements need to be ongoing. This can be done using LIDAR, and is available to the forest service.

The 2012 Planning Rule requires the forest plan to provide the ecological conditions to maintain the diversity of plant and animal communities and support the persistence of native species over time.

Alt D provides the best conditions to maintain native animal communities persistence over time and habitat

2012 Planning Rule: Relative to wildlife species and habitats, this rule directs national forest planners to consider

1 .habitat conditions for at-risk species,

Alt D best protects habitat for at-risk species like the wolverine, lynx and grizzly. Judge Christensen ruled in September 2018 that Yellowstone bears

need more genetic interchange from other populations. Modeling shows one corridor from the Gallatin-Bridger-Little Belts, and that corridor needs protection that only wilderness can provide.

2.habitat conditions for wildlife commonly enjoyed and used by the public for hunting, trapping, gathering, observing

Alt D best provides these valuable conditions, dominant ecological processes, disturbance regimes, and stressors such as natural succession, wildland fire, invasive species, and climate change

Alt D best protects habitats and the wildlife that depend on healthy ecosystems from climate change

1. the ability of the terrestrial and aquatic ecosystems in the plan area to adapt to change

Alt D best give terrestrial species the ability to move and adapt to changing conditions

1. habitat connectivity

. Alt D provides the best habitat connectivity

1. riparian areas.Alt D has the greatest contribution to the key social benefit from the forest for clean water, aquatic ecosystems and flood control

Backcountry areas provide a higher degree of protection from human disturbance than non-designated areas, but potentially allow for more proactive management to improve lynx habitat than recommended wilderness areas. Alternative D is the most protective for lynx. To ensure that wildlife have sufficient habitat for population persistence into the future, and to confer resilience in the face of climate change and land use change, there must be an adequate amount of protected habitat available among the spectrum of lands that are accessible to those wildlife. The more permanent that protected habitat is, and the larger the area is, the more certainty there is that wildlife populations can persist.

Recreation emphasis area forest plan allocations vary by alternative. All potential recreation emphasis areas are located in the montane geographic areas that contain mapped lynx habitat. Recreation emphasis areas currently have, and are expected to continue to receive, relatively high levels of motorized and nonmotorized recreation use, and may have a high density of recreation-related infrastructure relative to other parts of the national forest. Effects of recreation on lynx and lynx habitat are not well understood, but potential mechanisms through which recreation may affect lynx include disturbance from noise or human presence associated with recreation use, habitat loss resulting from removal of forest cover for development of permanent facilities such as ski runs, roads, campgrounds, reservoirs, or other facilities, and snow compaction, which may reduce the competitive advantage lynx have in deep snow conditions. Disturbance effects were addressed above under backcountry areas. Habitat loss can reduce prey availability, as well as produce more fragmented landscapes that could affect lynx movement patterns within or between home ranges (Interagency Lynx Biology Team 2013).

None of these forest plan allocations would occur under alternative D.

Alternative D also has no backcountry areas, but has recommended wilderness areas in most areas where backcountry areas are proposed in other alternatives; so it would provide the greatest level of restrictions that would benefit bears outside the recovery zone.

Since wolverines select habitat that is remote, and therefore generally uninviting for human use and occupation, there has been limited overlap between permanent human developments and high human use areas with primary wolverine habitat.

Inman and others (2013) modeled wolverine habitat selection based on known locations of radio-collared wolverines, and concluded the entire Central Linkage Region, which includes the Bridger and Bangtail ranges as well as the Crazy Mountains, is important for habitat connectivity and wolverine dispersal.

Under the current plans, forest management would continue with no specific forest plan direction for wolverines,

Alternative D best protects wolverines. I disagree that it is so uninviting that humans won't go there. Wolverines have probably used the HPBH WSA

continuously. Because they travel so extensively they could have been

extirpated briefly but then recolonized the area. Wolverines that were radio-collared in the Madison Range were found to often visit the HPBH WSA and at least one den site has been recorded there. All of the HPBH WSA is considered either primary or maternal wolverine habitat and it is critical for connectivity.

Much of the available scientific information on habitat connectivity embraces a concept of connecting core habitats, wherein core habitats are often identified as areas that have a high degree of "naturalness" and corresponding low level of human modification (

The locations identified as key linkage areas include the north end of the Gallatin Range in the Madison, Henrys Lake, and Gallatin Mountains Geographic Area and the west side of the Bridger Range in the Bridger, Bangtail, and Crazy Mountains Geographic Area. Refer to the Designations Map in Appendix A. These areas

were identified for fine-filter plan components for a number of reasons. They are within the top one percentile of habitat connectivity value for forest associates, and vegetation management actions have the greatest potential for impacts on forested habitats.

Interstate 90 and nearby development presents a major impediment or barrier to north-south movement for most land-dwelling wildlife species that occur on the Custer Gallatin. Those capable of getting across the highway face high mortality risk to do so. The key linkage areas in alternatives B, C,

and D encapsulate the portions of the Custer Gallatin that are in closest proximity to Interstate 90, and occur as relatively narrow bands that create a natural ecological flow pattern funneling wildlife movement to a point where crossing the Interstate may be attempted to reach a destination. The key linkage areas represent the shortest

distance between Custer Gallatin administrative units that would involve a crossing of Interstate 90

Organizations are working with DOT to get a safe wildlife passage over 190. Dr Lance Craighead is on the steering committee as is Gallatin Wildlife. We encourage the Forest Service to work with us to get a passage.

In alternative D, portions of both the north (Bridger Range) and south (Gallatin Range) key linkage areas would also have land allocations as recommended wilderness. Since the more restrictive direction would apply, some vegetation management actions that would otherwise be allowed in the key linkage areas would not be allowed in the recommended wilderness area portions

Alt D best protects this important link in the Gallatin-Bridger-Big Belt corridor.