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Rocky Mountain Region, Shoshone National Forest

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Green Union Project

Draft Environmental Assessment

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limited in scale when considered at the scale of either the home range of an adult wolverine in the Greater Yellowstone Ecosystem or the action area. Further, the likelihood of such displacement effects are low because wolverines are quite rare in the analysis area.

Many of the proposed treatment units occur in high-elevation (greater than 8,000 feet) coniferous forests that are likely used by wolverines, at least occasionally. While most treatment units overlap with primary wolverine habitat (areas suitable for survival and use by resident adults), no treatments occur within maternal wolverine habitat (areas suitable for use by reproductive females) as defined by Inman et al. 2013. Wolverines do not appear to specialize on specific vegetation, but instead select areas that are cold and receive enough winter precipitation to maintain deep persistent snow late into spring (Copeland et al. 2010).

While wolverines are not thought to be dependent on specific vegetation or habitat features that might be manipulated by land management activities, some types of silvicultural treatments (for example, regeneration harvests) can temporarily modify wolverine habitat (USDI 2011, USDI 2018). Further, Krebs et al. (2007) showed that habitat use by female wolverines in summer was negatively associated with recently logged areas. These temporary effects would be minimal due to the low densities of wolverines in the area. Construction and use of project roads could reduce the quality of wolverine habitat in the action area during implementation, but effects would be short-term (fewer than 5 years).

Cumulative Effects

Cumulative effects on wolverines were considered at the scale of the action area (Green Union project area). The approximately 105,000-acre action area is dominated by National Forest System lands, with non-federal lands consisting of small private inholdings that make up less than 1,000 acres. Because activities on non-federal lands in the action area are very limited in scale relative to either the action area or to the average home range size of an adult wolverine in the Greater Yellowstone Ecosystem (approximately 128 square miles for females, approximately 311 square miles for males; Inman et al. 2007), we anticipate few, if any, cumulative effects on wolverines from activities occurring on non-federal lands. Similarly, while some past and present actions on federal lands (for example, vegetation management projects) have modified small portions of primary wolverine habitat in project area, such effects are temporary, localized, and very limited when considered at the scale of either the home range of an adult wolverine in the Greater Yellowstone Ecosystem or the action area. Further, the project area would continue to offer large tracts of unmodified wolverine habitat. As a result, few if any cumulative effects on wolverines are expected from the proposed action when coupled with past, present, and reasonably foreseeable future actions.

Whitebark Pine

U.S. Department of Interior Fish and Wildlife Service 4d. Rule

The 2022 listing rule for whitebark pine (USDI 2022) includes a 4(d) rule, which allows exceptions for forest management activities in known whitebark pine habitat where whitebark pine mortality may occur. Multiple comments from the public and state and federal agencies asked the agency to address whether timber harvest and associated activities could continue in whitebark pine. The following excerpts from the listing rule are clear about the Fish and Wildlife Service's findings that timber harvest and associated activities may affect whitebark at a local scale, but that timber or vegetation projects at the local level are unlikely to jeopardize the species. The rule also reemphasizes that federal agencies will still be required to comply with the section 7 consultation requirement to consult when a federal action may affect a listed species, thus, disclosing effects to whitebark pine.

> "The 4(d) ruled will enhance conservation of whitebark pine by prohibiting activities that would be detrimental to the species, while allowing the forest management, restoration, and research related activities that are necessary to conserve whitebark pine. We recognize that forest managers currently conduct active vegetation and forest management in areas where whitebark pine trees are present. However, we found no threats at the species level resulting from vegetation or forest management activities. In fact, forest management activities can be important maintaining the health and resiliency of forest ecosystems that include whitebark pine. The exception in our 4(d) rule for forest management activities on Federal lands, and any relevant future section 7 consultations Federal agencies would conduct on their activities, would likely facilitate the continuation of forest management activities conducted by or authorized by relevant Federal land management agencies as long as we reach the conclusion that these activities will not jeopardize the species."

And also:

> "...in choosing to except removal, damage, or destruction associated with certain activities in a 4(d) rule, we have already determined that these activities are compatible with whitebark pine's conservation at the range-wide scale (even if these activities may affect individual trees or populations), which can streamline our analysis of whether an action would jeopardize the continued existence of the species, making consultation more straightforward and predictable."

The Green Union Project treatments are consistent with both Forest Plan direction and the whitebark pine listing rule to use vegetation management in areas where whitebark pine is present.

Direct and Indirect Effects

Overstory removal, clearcut, commercial thin, hazardous fuel reduction, improvement cut, salvage/sanitation, roadside clearing, and shelterwood prescriptions would all use both heavy equipment and chainsaws to complete work. Under each prescription, whitebark pine trees would experience unintentional and intentional mortality in the understory and overstory. Intentional mortality would occur when whitebark pine trees need to be removed to address insect and disease infestations, for fuels reduction, or to modify species composition and density to meet desired stand conditions. Treatments would occur on 2,749 acres (approximately 6.5 percent of modeled whitebark pine habitat within the analysis area) (table 5). Unintentional mortality occurs when individuals are damaged or hit by large machinery moving around within units, by felling other larger trees and during skidding or yarding operations to landing locations. Seedling and sapling size classes would be most affected due to their high densities in the understory. Most of these individuals are in a suppressed state that are unlikely to mature into reproductive individuals (Keane et al. 2007).

Effects to the seed bank for whitebark pine in all units with mechanical vegetation treatments are likely to be the same across all prescription types. Seedbanks are disturbed by movement of vehicles that causes soil displacement, compaction, and rutting. Seeds within those soils would experience displacement by erosion and movement, some reduction in germination success on compacted soils, and exposure to higher levels of predation. Effects to the seed bank would be minimized through the application of standard soil design features incorporated to minimize detrimental soil conditions that persist over the long-term. The design features limit vehicle operations to dry or frozen soils which are more resistant to displacement, compaction, and erosion.

Heavy machinery used to maintain roads and construct temporary roads and landings would typically remove all vegetation within the construction footprint. Mortality in these areas would likely be 100 percent for all species, including whitebark pine. However, temporary roads and landings can be sited to avoid damage and mortality to individuals with the highest reproductive potential. Effects to the seed

bank from site access and operations would be very similar to vegetation removal. These effects would be limited to areas where disturbance is at higher intensity levels, such as temporary roads and landings. Effects to the seed bank would be minimized through the application of standard soil design features incorporated to minimize detrimental soil conditions that persist over the long-term, such as rehabilitation components and operating condition restrictions.

Prescribed burning (broadcast burning, jackpot burning, and pile burning) may result in mortality to trees and damage seed viability in seedbanks through soil heating. Burn timing and conditions, as well as project design should minimize these effects. Rehabilitation of pile burn areas (soil ripping, seeding, and planting) may create larger openings in the canopy and foster seedling establishment and caching sites.

Tree seedling planting would occur in the project areas as needed. Some units will be planted with whitebark pine seedlings where conditions are likely to support long-term survival and stand development. Seeds will be sourced from the appropriate white pine blister rust resistant genetic stock. Rust resistant seedlings will promote healthier stands and may be more resilient in the face of predicted climate change.

Over the long-term, proposed silvicultural and burning treatments would improve forest health, reduce fuel loads, and create fuelbreaks. Prescriptions for specific unit goals (desired tree spacing, composition, insect and disease prevalence, fuel loads, and whitebark pine restoration potential) dictate levels of overstory and understory removal for all species. Whitebark pine would continue to be present in all units where it currently exists. Silvicultural treatments would be designed to retain growing space for whitebark pine under all treatment types at varying levels. Mature, healthy, whitebark pine trees with the highest reproductive potential would be prioritized for retention in concert with treatment goals. Treatments around these trees would maximize full and open crown development that would result in increased tree ring growth, cone production, and reproductive capacity (Keane et al. 2007). Loss of individuals would be focused on suppressed seedlings and saplings, as well as those mature trees that are diseased, damaged, or otherwise have low reproductive capacity (table 6). Table 6 includes loss of individuals both in areas where whitebark pine is a minor part of the forested stands as well as areas where it is a more significant component of stands.

Table 5. Analysis area and acres of whitebark pine habitat affected by treatments in the analysis area. The analysis area is comprised of the entirety of the six watersheds where treatments would occur.

Analysis Area (acres)	Treatment Units (acres)	Percent of Analysis Area Being Treated	Whitebark Pine Habitat in Analysis Area (acres)	Treatment Units in Whitebark Pine Habitat (acres)	Percent of Whitebark Pine Habitat in Analysis Area Affected by Treatments
105,816	9,677	9.1	43,931	2,749	6.5

Table 6. Total number of trees and estimated loss of the number of existing whitebark pine and percent of total loss by size class as a result of project activities

Whitebark Pine Size Class	Estimates of Existing Trees in All Treatment Areas	Mortality from Temporary Roads and Landing Construction	Intentional Mortality (Tree Removal to Address Management Objectives)	Unintentional Mortality (Inadvertent Mortality as a Result of Project Activities)	Total Estimated Mortality
Seedlings	2,481,176 (74%)	92,168 (3.8%)	863,434 (36.2%)	355,480 (14.9%)	1,310,082 (54.9%)

Whitebark Pine Size Class	Estimates of Existing Trees in All Treatment Areas	Mortality from Temporary Roads and Landing Construction	Intentional Mortality (Tree Removal to Address Management Objectives)	Unintentional Mortality (Inadvertent Mortality as a Result of Project Activities)	Total Estimated Mortality
Saplings	756,793 (22.6%)	25,539 (3.5%)	230,914 (31.6%)	95,439 (13.1%)	351,892 (48.1%)
Mature trees	113,998 (3.4%)	3,518 (3.2%)	8,925 (8.1%)	0 (0.0%)	12,433 (11.3%)

Typically, effects to trees would vary from survivable damage to mortality. For this analysis, effects are all considered mortality due to the inability to estimate with any accuracy what damage rates or subsequent survival rates could be across age classes. As a result, estimated mortality is likely higher than what actual mortality may look like after project completion (table 7). Mortality estimates were developed by a forester and silviculturist and were based on literature reference and professional judgment from prior mechanical treatments on the forest. Mortality estimates were calculated based on specific prescriptions and anticipated effects. Some suitable units would be replanted with whitebark pine seedlings after treatment. Temporary roads and landings would be rehabilitated after project activities are completed through soil ripping, seeding, and planting, if required. Once rehabilitated, these areas would provide larger openings in the canopy available for seedling establishment and caching sites.

Cumulative Effects

Vegetation treatments, grazing, recreation, and invasive plant management in conjunction with the proposed action could result in cumulative effects to whitebark pine. Project design features for this and other projects are incorporated to minimize effects.

For whitebark pine, past and ongoing vegetation treatments for fuel reduction, insect and disease management, salvage, and timber management have been authorized in the last 20 years in seven separate projects across the analysis area. Activities associated with vegetation management include planting, temporary road construction, prescribed fire, and mechanical vegetation removal. The effects of these activities are the same as described above for the proposed action. Approximately 11,154 acres have been authorized for treatment in the analysis area that fall within modeled whitebark pine habitat. When combined with the proposed action, 13,903 acres of whitebark pine habitat would be authorized for treatment out of 43,931 total acres of whitebark pine habitat in the analysis area, which amounts to 31.6 percent.

The authorization to treat in whitebark pine habitat does not equate to complete whitebark pine removal. As with the proposed action, treatments in other projects will affect individual trees, but are concentrated in the seedling and sapling size class. Areas where whitebark pine has existed within these project areas continue to support whitebark pine after treatment. These treatments also include beneficial effects to whitebark pine, such as planting, as well as removal of standing dead and infected trees. Treatments in other projects avoid mature whitebark pine removal, using similar methods to the proposed action. Healthy, mature, cone-producing individuals are preferentially retained where possible. Future vegetation treatments have not been identified in the analysis outside those that are ongoing and have already been authorized.

Authorized cattle grazing does not meaningfully interact with whitebark pine habitat. While cattle grazing may affect individuals through hoof action and above ground disturbance in some areas, it would be insignificant and likely undetectable.

Authorized recreation may interact with individuals and habitat through cross country travel by foot and pack animal and over-snow motorized and non-motorized cross- country travel. The likelihood of interaction for all these activities is high but frequency and spatial extent is very limited. Over-snow activities by their nature have limited interaction with individuals and habitat due to the protective snow cover during the winter season. Cross country travel by foot and pack animal are very short duration activities with light impacts, diluted in effect over large distances. Meaningful impacts would likely be imperceptible for whitebark pine.

Proposed treatment areas will experience disturbance, which can increase the likelihood of invasive plant population establishment. This effect would not be widespread as treatment areas make up a small percentage of whitebark habitat. Consequent management for invasives species by mechanical or herbicide treatments would likely be minimal regarding injury and mortality to whitebark. Mature whitebark pine can be largely avoided in both chemical and mechanical treatments by buffers (if required by the chemical label to minimize damage to conifers). Seedlings or saplings may receive herbicide overspray or drift but are unlikely to reach mortality because most herbicide formulations used on the Shoshone National Forest have no known effects on conifers. Chemicals with the active ingredient 2-4D, can damage whitebark pine through root uptake of the chemical, but buffers can mitigate this effect. Long-term weed treatments would probably benefit whitebark pine by controlling the spread of invasive species that would further degrade habitat for whitebark pine.

- treat prevy in weeds!

Region 2 Sensitive Species

Affected Environment

Sensitive species are those for which population viability is a concern. Criteria used by regional foresters to identify sensitive species include but is not limited to 1) a significant current or predicted downward trend in population abundance or density and 2) a significant current or predicted downward trend in habitat capability that would reduce a species' existing distribution. An effects analysis was completed for those species that potentially occur within the analysis area (see lists below). Determinations for all species analyzed were "may impact individuals or habitat but would not likely contribute to a trend towards federal listing or loss of viability to the population or species."

Terrestrial wildlife species and associated habitat are:

- Pacific marten: deciduous, mixed, and coniferous forest habitat.
- Fringed myotis: varied habitat, includes high-elevation mixed conifer forest.
- Hoary bat: coniferous and deciduous forest habitat and riparian and edge habitat.
- Townsend's big-eared bat: caves, hollows in large trees, forested riparian zones.
- Water vole: subalpine and alpine riparian areas with narrow channel, gentle streams, and stream banks with deep, well-developed soils.
- Boreal owl: high-elevation mixed conifer forest, tree cavities.
- Brewer's sparrow: mountain-foothills and basin-prairie sagebrush habitat.
- Ferruginous hawk: sagebrush plains, prairies, open and dry habitats.
- Harlequin duck: swift forest rivers and streams.
- Northern goshawk: mature montane coniferous and mixed forests.
- Olive-sided flycatcher: coniferous forest.

Re: whitebark pine projects

From: Louisa Willcox (wildgriz1@gmail.com)

To: sjjohnsonkoa@yahoo.com

Date: Wednesday, April 10, 2024 at 01:11 PM MDT

Hi Sara,

This is great, many thanks! Would you mind if I sent to Diana Six, Jesse and Sean?

Also do you happen to know if the FS is consulting with the FWS on this?

Great stuff and good timing, many thanks,

Louisa

On 4/10/2024 11:54 AM, Sara Johnson wrote:

Hi Louisa,

I had a little break from all these projects, so summarized all the information on whitebark pine in the Helena-Lewis and Clark forest-wide burning proposal. I think this would be perfect for going after whitebark pine treatments. The draft decision is estimated to be next month, so we could get all the needed info into an objection that I would write.

Sara