

Purpose & Need

Based on observed existing conditions, as well as other supporting information (e.g. annual insect and disease aerial detection surveys, national insect and disease risk maps, community wildfire protection plan, input from local community members), there is a need to:

- Reduce the risk or extent of, or increase resilience to, insect and/or disease infestation;
- Reduce wildfire risk to the local communities and surrounding federal lands;

Discussion:

The Forest Plan directs the promotion of tree growth, reduction of insect and disease levels, and development of densities that sustain wood fiber production (Forest Plan pages 4-2, 4-18). For Forest Plan management areas 1, 5, 6, 7, and 8, the Forest Plan directs that insect and disease outbreaks be prevented or suppressed when management area values are threatened (Forest Plan pages 4-72, 4-96, 4-100, 4-101, 4-104, 4-108).

Section 8204 of the Agriculture Act of 2014 (Public Law 113-79) amended Title VI of the Healthy Forests Restoration Act of 2003 (HFRA) (16 U.S.C. 6591 et seq.) to add Sections 602 and 603. Section 603 establishes a categorical exclusion for qualifying insect and disease projects in designated areas on National Forest System lands. A categorical exclusion allows a proposed action to be excluded from further analysis and documentation in an Environmental Impact Statement (EIS) or Environmental Assessment (EA). An insect and disease project that may be categorically excluded under this authority is a project that is designed to reduce the risk or extent of, or increase the resilience to, insect or disease infestation in the areas (HFRA, Sections 602(d) and 603(a)).

This categorical exclusion may be used to carry out an insect and disease treatment project in a landscape-scale area designated by the Secretary under section 602. Landscape-scale areas may be designated by the Secretary if they meet at least one of the criteria found in HFRA, Sections 602(c)(1)(2) & (3).

The Limestone/Silver project area currently has acres of vegetation that are overstocked and susceptible to uncharacteristically high levels of insects and disease. Overstocking creates more inter-tree competition which in turn increases stress on individual trees. An estimated 15,929 acres in the Limestone/Silver project area has been affected by root rot, spruce budworm, Douglas-fir beetle, mountain pine beetle, and other agents over the past five years, according to annual Forest Health and Protection aerial surveys. This is approximately 30% of the total project area of 53,600 acres. Existing stand composition and structure put the project area at risk to these disturbance agents over the foreseeable future. The 2013-2027 National Insect and Disease Forest Risk Assessment maps show the Limestone/Silver project area at risk to the highest basal area (BA) losses (greater than 75 percent BA loss) in the northeast Washington area (Krist Jr. et al. 2014).

Lodgepole pine took advantage of many growing sites following disturbances from the 1920 and 1930s fires, timber harvesting, and mining. Much of the lodgepole pine is now at a density and age where it is highly susceptible to severe mountain pine beetle attack. Shade-tolerant species such as western redcedar and hemlock now grow in the shaded understories of crowded stands where historical disturbance patterns would have minimized their establishment.

There is a need to restore stands towards historic levels of stand density and species composition that would improve sustainability and resiliency in this ecosystem. Under historic fire regimes, species such as western larch, Ponderosa pine, Douglas-fir, and western white pine would have played a more dominant role on the landscape on dry to moist sites. Redcedar and hemlock would have been more dominant on wet sites, but are currently establishing on drier sites due to lack of disturbance.

Proposed Action

The Forest Service developed this proposed action to meet the purpose and need. The proposed action is consistent with all relevant laws, regulations and policies and is used to address internal and public concerns.

The 2014 Farm Bill defines declining forest health as a forest that is experiencing substantially increased tree mortality or die back due to infestation or defoliation by insect or disease. Locations for these projects must be within the wildland-urban interface (WUI) or if outside the WUI, in condition classes 2 or 3 in Fire Regime Groups I, II, or III. All proposed treatment units are located in the WUI and total proposed treatment acres do not exceed 3,000 acres. The fire regime condition class (FRCC) in the proposed harvest units is predominantly rated as a 2 with small amounts of 1 and 3. This range in FRCC is representative throughout the analysis area. The Limestone project also lies within a designated watershed, as defined by Sec. 602(b).

Proposed Vegetation Treatments

Vegetation treatment would emphasize forest health and the reduction of hazardous fuels. Forest stands within the project boundary have departed from historic conditions, and are more densely forested now than in the past. Since fire has been excluded from this landscape for so long, forest canopy is much more contiguous with fewer openings and dense understory vegetation.

To attain healthy forest objectives, the proposed action includes commercial and non-commercial treatments as the primary activities. Commercial treatments would be accomplished primarily by shelterwood harvests and commercial thinning (Table 1). However, a combination of treatments including group selection and overstory removal may be used with shelterwood and thinnings to address pockets of unsuitable trees, disease or insect infestations, or mistletoe infection.

Noncommercial treatments include, but are not limited to: grapple piling, pile burning, jackpot burning, underburning, decompaction, and felling small damaged trees. These treatments would be applied within proposed units following timber harvest to reduce fuel hazard, increase growing space for residual trees, remove small damaged trees following harvest, and to decompact soils to increase soil productivity and tree growth.

Shelterwood: It is estimated that the shelterwood silviculture method would be used on 2,100 acres within the project area. This harvest method is designed to retain a component of overstory trees while removing trees within all canopy classes to provide growing conditions for a new cohort (age class) of trees in the understory.

Commercial Thinning: Approximately 899 acres would be commercially thinned; this is an intermediate treatment designed to increase diameter growth of residual trees and provide larger trees in a shorter period of time than would occur under competition for resources. Thinning treatments typically target suppressed or intermediate trees for removal, but some dominant and co-dominant trees may be removed to decrease overall stand density or to favor healthier trees.

Combination of silviculture treatment methods: A combination of silviculture methods including, but not limited to: thinning, shelterwood, group selection, and overstory removal would occur where applicable. Many stands are not uniform and vary in species composition, size, density, and spatial pattern, so different silviculture methods may be needed to achieve desired conditions.

Table 1. Approximate area by silvicultural method to reduce mortality loss from insect and disease

Activity	Treatments (ac)
Shelterwood (HSH)	2,100
Commercial Thinning (HTH)	899

Table 2. Proposed treatment acres by logging system

Logging System	Approximate Acres	Percent
Ground based	2,383	79%
Skyline	616	21%

The historic (HRV) and future ranges of variability (FRV) for vegetation should also be considered when developing the stand prescriptions in the face of climate change. The HRV is used as a starting point for vegetation treatment objectives to mimic past disturbance patterns and tree species composition and structure. The FRV identifies alternative reference conditions that are suited to a predicted future climate and though precipitation is variable, it is expected climate will be warmer (Hessburg et al. 2015). Many of the recommendations for this analysis area address forest health issues by reducing stand densities, reducing fuels, restoring drought-tolerant and fire resistant species, which will place the forest on a trajectory to be more responsive to climate change using principles from HRV and FRV.

Other Proposed Treatments/Activities

No new roads would be constructed under this proposed action. However, two temporary road locations have been identified to access units that do not currently have road access. The total length in temporary road miles is estimated to be 0.5 miles.

Hessburg, P.F. et al. 2015. Restoring fire-prone Inland Pacific landscapes: seven core principles. *Landscape Ecology* 30:1805-1835

Krist Jr, F.J et al. 2014. National Insect and Disease Forest Risk Assessment (2013-2027). FHTET-14-01. USDA-FS Forest Health Technology Enterprise Team.