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Forest
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Record of Decision

Como Forest Health Project

**Darby Ranger District, Bitterroot National Forest
Ravalli County, Montana**

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RECORD OF DECISION COMO FOREST HEALTH PROJECT

**U.S. FOREST SERVICE
BITTERROOT NATIONAL FOREST
DARBY RANGER DISTRICT
RAVALLI COUNTY, MONTANA
R22W T4N SECTIONS 13, 24, 25, 36;
R21W T4N SECTIONS 17, 18, 19, 20, 21, 28, 29, 30, 31.**

DECISION

Based on my review of the Como Forest Health Environmental Impact Statement (EIS), I have decided to implement Alternative 4 modified to include Units 3, 8, 10, 26, 38, and 57 (Fig. 1). The benefits of Alternative 4 modified are:

- reduces mountain pine beetle infestation hazard in most of the high hazard ponderosa pine units
- reduces the potential for crown fire
- improves strategic opportunities for managing wildfires
- maintains wildlife habitat components by not treating or modifying treatments in areas of hiding and thermal cover.

Alternative 4 modified also develops administrative access to the southeast portion of the project area in section 28 T.3N.R.21W.

Alternative 4 was developed to study the effects of meeting the project purpose and need while conserving wildlife habitat diversity on big-game winter range and retaining Visual Quality Objectives (VQOs). Units 3, 8, 10, 26, 38, and 57 are among the units not treated under Alternative 4 because they have inclusions of ponderosa pine old growth, or big-game hiding cover or thermal cover development habitats. Upon review of the alternatives and discussions with the Interdisciplinary Team (ID Team), I determined that these units could be treated and better address the need to reduce the potential of mountain pine beetle infestation, and meet or improve wildlife habitat conditions. Following is a description of these units, their conditions, treatments, and the effects of treatment.

Unit 3: Unit 3 is made up of four stands, two of which are old growth. The non-old growth stands do not meet the minimum definition of old growth because they do not have enough trees older than 170 years (Green et al. 2005). The stand densities in this unit range between 120-160 basal area (BA, square feet per acre, ft²/ac), which puts them in the high hazard rating for mountain pine beetle infestation. The old growth stands in this unit were treated about 15 years ago and the treatments retained the old growth characteristics.

Unit 10: Unit 10 is ponderosa pine with encroaching Douglas-fir. A narrow strip of ponderosa pine old growth transects the unit along a riparian habitat conservation area (RHCA). Both

Units 3 and 10 are ponderosa pine with encroaching Douglas-fir. Without treatment, we would expect old growth characteristics to continue developing with increasing competition from Douglas-fir. Mountain pine beetle hazard would continue to increase, as would the potential for stand replacing fire.

We would reduce stand density in both units to between 60 and 80 BA and would not harvest trees 20 inches diameter at breast height (DBH) or larger. One of the old growth criteria in Green et al (2005) is a minimum of eight trees 21 inches or larger. By retaining trees 20 inches or larger, we will retain all the trees that qualify as old growth and provide replacement trees as the older, larger trees age and die. We also meet the minimum stand density characteristic for old growth by maintaining stands above 60-80 BA (Green et al. 2005).

These treatments would affect about 13 acres of old growth. However, the old growth characteristics would be retained. The Douglas-fir would be favored for removal, which would enhance the development of ponderosa pine. The non-old growth stands in both units would develop towards old growth and eventually create larger areas of old growth, especially Unit 3 because it is adjacent to old growth Units 4, 5, and 6. The larger old growth areas would provide more interior and ecologically functional habitat for wildlife species that use it such as fisher, marten, and pileated woodpeckers.

Unit 8: Tree species in Unit 8 is ponderosa pine with an inclusion of denser Douglas-fir. The unit was not proposed for harvest in Alternative 4 because it is in an area with a Visual Quality Objective (VQO) of retention and is visible from Lake Como and Three Frogs campground. However, it is at high hazard for mountain pine beetle infestation (FEIS 3.1-26, 3.1-62). Unit 8 is proposed for non-commercial thinning from below in Alternative 4 to remove some of the ladder fuels that predispose it to crown fire. However, thinning Unit 8 would not create enough space between trees to reduce mountain pine beetle hazard. If the unit becomes infested, mountain pine beetle has the potential to infest the adjacent, previously thinned Three Frogs campground. Though non-commercial thinning of this unit does not detract from the retention VQO, it also does not reduce the mountain pine beetle hazard. An intermediate harvest does reduce the mountain pine beetle hazard but will reduce the VQO to modification. Removing commercial volume from this unit requires the use of skyline equipment and tracked line-machine (TLM) trail. Linear features created by the skyline corridors and TLM trail would be visible for some time after the treatment (3.4-13, 3.4-14). If the unit is not treated and becomes infested with mountain pine beetle, the VQO would also be reduced, especially if the infestation is followed by a fire.

Unit 8 will have an intermediate harvest to 40 – 60 BA, favoring the retention of mature ponderosa pine and Douglas-fir. There is a high likelihood that this level of thinning will leave enough trees to obscure the skyline corridor and reduce the visibility of the TLM trail. I agree this treatment will reduce the VQO below retention initially after harvest but believe the VQO will recover faster than anticipated based on similar treatments on the Bitterroot National Forest. The application of design features and mitigation measures will reduce the degree of visual impact and expedite VQO recovery. The harvest will reduce mountain pine beetle hazard, decrease in potential fire severity, and maintain large ponderosa pine and Douglas-fir

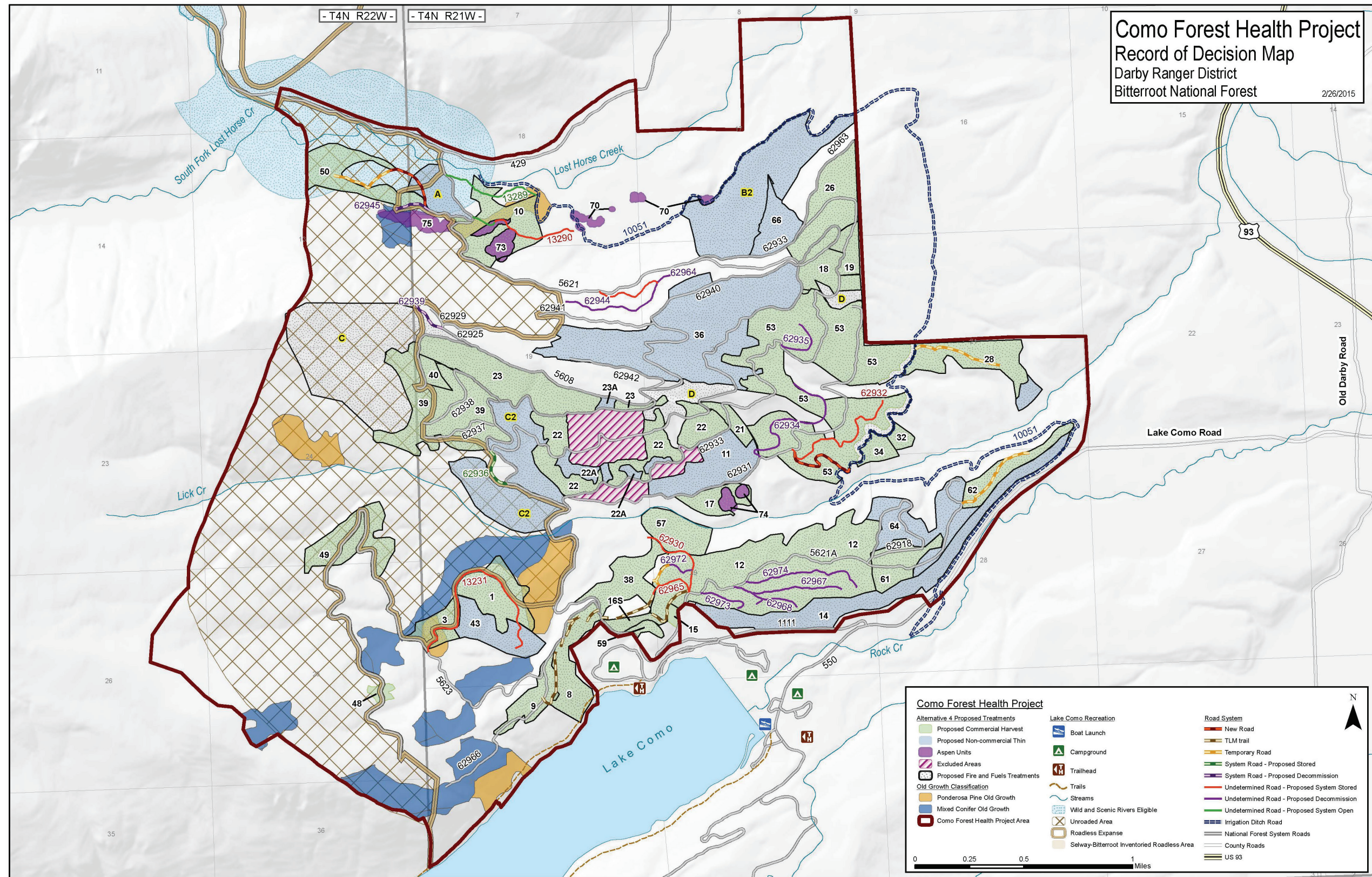


Figure 1: Activities Occurring in the Como Forest Health Project Area

on the site. It will reduce the VQO in the short-term but preserve it in the long-term. The likely outcome in the absence of treatment and with beetle infestation would be the loss of large pine adjacent to and in the campground, reduced campground aesthetics, and more than 100 years before large ponderosa pine would re-establish on the site.

Unit 26: Unit 26 is ponderosa pine with encroaching Douglas-fir. Douglas-fir is the dominant tree cover on the ridge and provides elk thermal cover. This unit was not treated in Alternative 4 because it provides developing thermal cover and hiding cover adjacent to private land. The mountain pine beetle infestation hazard is high in the ponderosa pine component. An infestation in this unit would prevent the development of 60% canopy cover needed for thermal cover and create an area of high crown fire potential adjacent to the Bitterroot National Forest boundary with private land.

The unit would be thinned to 40-60 BA, favoring ponderosa pine on the slopes and lower portion of the unit. This treatment will reduce the mountain pine beetle infestation hazard from high to low. The Douglas-fir stand on the ridge and sub-merchantable trees will not be treated. The sub-merchantable trees will retain some pockets of hiding cover and the Douglas-fir dominated portion of the unit will develop into thermal cover.

Units 38 and 57: Units 38 and 57 are north and northwest facing slopes adjacent to the mineral lick above Lick Creek. Units 38 and 57 are an even-age mix of ponderosa pine and Douglas-fir. They provide hiding and thermal cover next to the mineral lick, which is heavily used by wildlife. Because these units are even-age, they tend to have a single canopy with very little structural development in the understory.

Treatments in both units would be on the upper slopes away from the mineral lick. Unit 38 would have three group selections of two to four acres. The density of the group selection areas after harvest would be 40-60 BA with the removal of encroaching, shade-tolerant tree species around mature ponderosa pine. Treatment in Unit 57 would be similar, except there would be two openings and tree removal would focus on dwarf mistletoe-infested Douglas-fir.

These treatments would improve the structural variability on the ridge adjacent to a closed system road. They would reduce dwarf mistletoe-infested Douglas-fir and create openings for ponderosa pine regeneration, which would develop into hiding cover. The treatments would create breaks in the canopy fuels and reduce torching potential in a wildland fire. Thermal cover recruitment would also be reduced between 10 – 20 acres on the upper slopes but would be retained in the rest of the units. Hiding cover and thermal recruitment cover would be retained adjacent to the mineral lick.

My decision includes the application of design features, mitigation measures, and monitoring as described in the Como Forest Health final EIS and listed in Appendix A

Under Alternative 4 modified, approximately 2,254 acres would be treated using a combination of commercial harvest, non-commercial thinning, and prescribed fire. Approximately 1,640 acres of ponderosa pine forest would be treated to reduce their susceptibility to mountain pine beetle infestation. Another 591 acres are treated to reduce dwarf mistletoe and Douglas-fir beetle hazard. In addition, conifers would be girdled, slashed, or removed from about 39 acres

of aspen to rejuvenate the aspen clones. In aspen Unit 70 and most of Unit 75, felled conifers would be left on site because equipment to remove the logs could not access the wetlands (Figure 1). Logs would be removed from the northeast portion of Unit 75, adjacent to NFSR 5621 and 62945. Aspen units 73 and 74 are within Units 10 and 17, respectively, so felled conifers would be cabled to adjacent areas outside of the RHCA. Commercial timber harvest would occur on 1,300 acres and non-commercial thinning would occur on 731 acres. All treated units would be followed with a post-harvest review to determine the need for additional non-commercial thinning, slash piling, and the type of slash treatment or prescribed fire.

Low severity prescribed fire would follow most of the treatments in commercial harvest units. In addition, low severity fires would be prescribed for Unit D (31 acres) and moderate severity fire would be prescribed for Unit C (171 acres) outside of harvest or thinning treatment units. Fuels would be reduced on 2,004 acres using mechanical treatments and prescribed fire, on 48 acres using harvest treatments only, and on 202 acres using prescribe fire only. Approximately 1,636 (73%) treated acres are in the WUI (Table 1).

Approximately 0.7 miles of new system road, 1.4 miles of temporary road, and 1.0 mile of tracked line-machine (TLM) trail would be constructed to access timber (Figure 1). Individual lengths of road or trail vary between 69 and 2,933 feet (Table 1).

Table 1: Proposed Treatments for Each Unit in Alternative 4

UNIT No.	TREATMENT*	AREA (ACRE)	WUI AREA (ACRE)	YARDING METHOD		ROAD & TRAIL CONSTRUCTION		
				GROUND (ACRE)	CABLE (ACRE)	SYSTEM (FT)	TEMP. (FT)	TLM ¹ / EXCAVATED SKID (FT)
1	Uneven-age, single tree selection	42	5	33	0	0	0	497
3	Intermediate harvest (<20" DBH)	20	0	20	0	0	0	0
4	Group Selection	NO TREATMENT						
5	Group Selection	NO TREATMENT						
6	Group Selection	NO TREATMENT						
8	Intermediate Harvest	38	38	38	N/A	0	0	2933
9	Intermediate Harvest	23	23	21	0	0	0	0
10	Intermediate Harvest	59	59	35	0	0	0	0
11	Non-commercial Thin	50	50	N/A	N/A	N/A	N/A	N/A
12	Uneven-age, single tree selection	199	199	166	0	0	0	0
13	Non-commercial Thin	NO TREATMENT						
14	Non-commercial Thin	88	88	N/A	N/A	N/A	N/A	N/A
15	Intermediate Harvest	3	3	0	3	0	0	360
16N	Group Selection	NO TREATMENT						
16S	Intermediate Harvest	8	8	1	7	0	0	1,361
17	Intermediate Harvest	21	21	13	0	0	0	0
18	Intermediate Harvest	31	31	29	0	0	0	0
19	Intermediate Harvest	14	14	0	14	0	0	0
20	Intermediate Harvest	NO TREATMENT						

UNIT No.	TREATMENT*	AREA (ACRE)	WUI AREA (ACRE)	YARDING METHOD		ROAD & TRAIL CONSTRUCTION		
				GROUND (ACRE)	CABLE (ACRE)	SYSTEM (FT)	TEMP. (FT)	TLM ¹ / EXCAVATED SKID (FT)
21	Intermediate Harvest	10	10	0	10	0	0	0
22	Intermediate Harvest	76	48	74	0	0	0	0
22A	Non-commercial Thin	16	11	N/A	N/A	N/A	N/A	N/A
23	Intermediate Harvest	79	30	58	5	0	0	0
23A	Non-commercial Thin	3	3	N/A	N/A	N/A	N/A	N/A
24	Non-commercial Thin	NO TREATMENT						
25	Intermediate Harvest	NO TREATMENT						
26	Intermediate Harvest	52	52	52	0	0	0	0
27	Intermediate Harvest	NO TREATMENT						
28	Intermediate Harvest	50	50	44	0	0	2184	0
32	Intermediate Harvest	6	6	6	0	0	0	73
34	Intermediate Harvest	11	11	5	0	0	0	69
36	Non-commercial Thin	204	204	N/A	N/A	N/A	N/A	N/A
38	Group Selection	34	34	12	0	0	1446	0
39	Uneven-age, single tree selection	101	0	75	0	0	0	0
40	Intermediate Harvest	7	0	0	7	0	0	0
41	Group Selection	NO TREATMENT						
42	Group Selection	NO TREATMENT						
43	Non-commercial thin	34	4	N/A	N/A	N/A	N/A	N/A
45	Group Selection	NO TREATMENT						
46	Intermediate Harvest	NO TREATMENT						
47	Intermediate Harvest	NO TREATMENT						
48	Intermediate Harvest	5	0	5	0	0	0	0
49	Intermediate Harvest	45	0	31	0	0	0	0
50	Intermediate Harvest	41	25	25	0	1449	1597	0
51	Non-commercial thin	NO TREATMENT						
52	Non-commercial thin	NO TREATMENT						
53	Intermediate Harvest	239	239	212	0	2079	0	0
57	Group Selection	29	29	6	0	0	0	0
58	Group Selection	NO TREATMENT						
59	Intermediate Harvest	5	5	5	0	0	0	0
60	Group Selection	NO TREATMENT						
61	Intermediate Harvest	27	27	35	0	0	0	0
62	Intermediate Harvest	25	25	21	0	0	2226	0
64	Non-commercial thin	57	57	N/A	N/A	N/A	N/A	N/A
65	Intermediate Harvest	NO TREATMENT						
66	Non-commercial thin, No Prescribed Fire	27	27	N/A	N/A	N/A	N/A	N/A
66A	Non-commercial thin, No Prescribed Fire	NO TREATMENT						
70	Aspen treatment	8	8	N/A	N/A	N/A	N/A	N/A
73	Aspen treatment	(12)	(12)	5	N/A	N/A	N/A	N/A
74	Aspen treatment	(6)	(6)	6	N/A	N/A	N/A	N/A
75	Aspen treatment	13	13	3	N/A	N/A	N/A	N/A

UNIT No.	TREATMENT*	AREA (ACRE)	WUI AREA (ACRE)	YARDING METHOD		ROAD & TRAIL CONSTRUCTION		
				GROUND (ACRE)	CABLE (ACRE)	SYSTEM (FT)	TEMP. (FT)	TLM ¹ / EXCAVATED SKID (FT)
A	Prescribed Fire	24	24	N/A	N/A	N/A	N/A	N/A
B	Prescribed Fire	NO TREATMENT						
B2	Prescribed Fire with non-commercial thin	124	124	N/A	N/A	N/A	N/A	N/A
C	Prescribed Fire	171	0	N/A	N/A	N/A	N/A	N/A
C2	Prescribed Fire with non-commercial thin	104	0	N/A	N/A	N/A	N/A	N/A
D	Prescribed Fire	31	31	N/A	N/A	N/A	N/A	N/A
E	Prescribed Fire	NO TREATMENT						
E2	Prescribed Fire	NO TREATMENT						
G	Prescribed Fire	NO TREATMENT						
H	Prescribed Fire	NO TREATMENT						
TOTALS		2254	1636	1036	46	3528	7453	5293
PERCENTAGES		39	73	95.7 ²	4.3	(0.67mi)	(1.41 mi)	(1.0 mi)

¹ TLM: Tracked line-machine; a cable yarding system

² Percent of ground and cable harvest are based on harvested area only; prescribed fire and non-commercial thin areas are not included in the calculation.

FEATURES COMMON TO ALL ACTION ALTERNATIVES

Design Features and Mitigation Measures

My decision includes the application of design features and mitigation measures described in the FEIS and summarized in Chapter 2 (FEIS pgs. 2-19 – 2-25) and Appendix A of this Record of Decision. Best Management Practices and Soil and Water Conservation Practices are incorporated in the Design Features and are described in detail, as applicable to the Como Forest Health project, in Appendix A of the FEIS.

Roads Management

There are just over 7 miles of undetermined roads in the Como Forest Health project area. Undetermined roads are old roads whose future needs have not been determined. The Interdisciplinary Team (ID Team) assessed these roads during field reviews and determined which roads were needed for current and future management. Most of these roads are connected to road systems that are currently closed. In all the action alternatives approximately 0.6 miles of road would remain open, 3.1 miles of road would be stored, and the remaining 3.5 miles would be decommissioned (Figure 1). No additional rehabilitation work or soil disturbance is needed to decommission the roads because they are stable and grown in with large trees.

Approximately 0.5 mile of national forest system road (NFSR) would be decommissioned, NFSR 62939 and 62945 (FEIS pg. 3.11-5). The end of NFSR 62939 is a redundant road that is no longer needed to access timber. The first 100 feet of this road would be recontoured. The end of NFSR 62945 is a steep section of road that is downcutting and eroding. The road would be

obliterated from the junction with the new proposed road. Obliteration would require improving drainage to prevent erosion, decompacting the road surface, and recontouring where material is available. The road would be fertilized, seeded, and mulched. Slash and rock would be used to reinforce the closure.

Stored roads, specifically NFSR 62937, 62938, and 62963 (FEIS pg. 3.11-5), will have the culverts removed, drainage re-established in place of the culvert, the surfaces scarified and seeded, and the entrance recontoured for the first 100 feet.

Watershed Improvement Treatments

All action alternatives would implement watershed improvement activities to reduce sediment (FEIS 3.7-22, 3.7-23). The activities would be funded by stewardship funds or other funding sources. The activities would be implemented when funding allows, but most likely between the start of the timber sale and 1-2 years after the timber sale closure. The watershed improvement activities are:

- Stabilize NFSR 62936 borrow pit and road: the road and borrow pit would be closed to motorized vehicles, lightly scarified, water barred where needed, seeded and mulched.
- Replace culvert on NFSR 5621, at the first intermittent stream crossing north of junction with NFSR 5608, to stabilize the channel.
- Replace culvert on NFSR 62931 at junction with NFSR 5621.
- Close an unauthorized OHV trail at the junction of NFSR 5608 and NFSR 5621.
- Decommission NFSR 62934 (about 0.7 mile), which has a stream crossing and about 250 feet of road within potential sediment contributing distance of the stream channel (FEIS pgs. 3.7-23, 3.11-5)

BACKGROUND

The Como Forest Health project area is directly north of the Lake Como Recreation Area (R22W T4N Sec. 13, 24, 25, 36; R21W T4N Sec. 17, 18, 19, 20, 21, 28, 29, 30, 31) (Fig. 2). The recreation area provides a full complement of recreation opportunities and receives about 200,000 visitors annually. Recreation opportunities include: developed campgrounds, day use picnic areas, fishing, boating, and swimming in Lake Como, a horse camp area, rental cabin and pavilion, accessible nature trails, and access to the Selway-Bitterroot Wilderness. Mountain pine beetle populations were growing in the Lake Como Recreation Area and surrounding forest and could potentially kill large numbers of ponderosa pine trees, especially the larger ones. The recreation area was thinned in 2012 and 2013 to improve ponderosa pine resilience to mountain pine beetle infestation, maintain campground aesthetics, and remove the hazards of dead and dying trees from the most heavily used areas. Recent surveys (May 2013) in the Como Forest Health project area indicate the mountain pine beetle population may be stabilizing or declining. However, many ponderosa pine stands have densities above 80 BA (basal area, measured in square feet (ft²)/acre). Forests above this density are still at risk of mountain pine beetle infestation and would support a population rebound (PF-SILV-003).



Tree growth since the last harvest treatments, 20 - 40 years ago, has increased forest densities so they are susceptible to mountain pine beetle infestation. Treating the larger area around the Lake Como Recreation Area will enhance the success of the 2012 and 2013 treatments because mountain pine beetle infestations would not be developing adjacent to them. The larger area of treated forest would improve forest resistance and resilience on a broader, landscape scale.

The current level of mountain pine beetle in the project area is a result of the uniformity and density of mature ponderosa pine. The lack of structural diversity in the project area affects all cover types. Field observations indicate high departures from reference conditions in the smaller size classes, especially in ponderosa pine. The seedling/sapling and pole size classes are less common and almost nonexistent. There is a definite loss of multi-aged stands of seral tree species.

The mature ponderosa pine structure class is well represented in the project area relative to historic condition (FEIS Table 3.1-2). Though ponderosa pine remains a dominant cover type on the landscape, Douglas-fir is increasingly represented. Many of these stands are vulnerable to increasing insect infestations and disease rates because of high forest densities.

THE PURPOSE AND NEED FOR ACTION

The purpose of the Como Forest Health project is to:

- Reduce potential mountain pine beetle-caused mortality in large diameter ponderosa pine
- Reduce fuel loads and maintain historical fire return intervals in the project area
- Improve forest resilience to mountain pine beetle, Douglas-fir beetle, and dwarf mistletoe
- Maintain the visual integrity of the larger Lake Como Recreation Area

This project is needed to inhibit the growth of mountain pine beetle populations by reducing the density of ponderosa pine forests. Reducing ponderosa pine forest density interferes with the mountain pine beetles' pheromone system that aggregates attacks and overcomes the trees' defense systems (Amman, G.D. and J.A. Logan 1998). Reducing forest density also reduces competition between trees for nutrients and water. More nutrients and water are available to the remaining trees, which improves their growth and the maintenance of their defense systems, and reduces the quality of mountain pine beetle brood rearing habitat (Oester, Paul T. et al. 2005, Vite and Wood 1962). It is harder for mountain pine beetle to attack and produce successful broods in trees that have adequate nutrients and water to maintain their physiological systems.

Another benefit of thinning the forest is the Forest Service selects the trees that remain in the forest. The Forest Service can retain the larger diameter pine by removing the smaller diameter trees that support the developing mountain pine beetle population, shade the stems of the larger pine trees, and compete with the larger trees for nutrients and water. Mountain pine

beetle populations develop in the smaller diameter trees until there are enough beetles to overcome the defense systems of the larger diameter stems (Carroll, A.L. et al. 2006).

Increasing the space around trees interferes with the mountain pine beetles' communication system and reduces their ability to aggregate attacks and overcome the trees defense systems. The microclimate of the thinned forest tends to be less moderate than the closed forest and developing broods are subject to more extreme temperature fluctuations. These conditions reduce brood development and rearing success (Bentz et al. 1991, Powell 1967).

Insects and diseases such as dwarf mistletoe and Douglas-fir bark beetle are active in the moister, mixed conifer stands. In some stands, these insect and disease complexes are within natural parameters and help regulate stand conditions. In other stands, they reduce stand vigor or inhibit achieving management objectives. Reducing stand density by removing susceptible trees or stand components that promote disease inoculum or insect population growth would improve forest resilience.

The historic fire return interval in the Como Forest Health project area is 5-25 years at the low elevations and 35-200 years at the mid- to upper elevations. The areas that burn more frequently typically burn at low severity and create open ponderosa pine and Douglas-fir forests with small openings of regeneration. The areas that burn less frequently have mixed to high severity fires depending on the time between fires. The forests tend to be moister and cooler and support mosaics of tree species and stand structures. Mixed tree species of grand fir, spruce, subalpine fir, lodgepole pine, and Douglas- fir occur in these forest types depending on site conditions.

Most of the Como Forest Health project area was historically exposed to frequent, low severity fire. Currently, 30% of the project area would burn at low severity and 60% would burn at moderate severity (torching trees) (FEIS Figure 3.2-3). The remainder of the area would be susceptible to high severity fire (fire moving through the tree canopy). The area of high severity fire is likely within its historic fire return interval as it is at the higher elevations of the project area or along riparian areas in the moister habitats. The large area of moderate severity fire in the project area would become high severity crown fire under the appropriate conditions. Reducing fuels in the project area would reduce the potential fire severity to levels appropriate to the historic fire return interval. More area of low severity fire would maintain fire management options and public and firefighter safety.

The Visual Quality Objectives (VQOs) in the project area range from maximum modification to retention. The areas of retention are adjacent to Lake Como, Lake Como Road, and Lost Horse Road (NFSR 429) (FEIS Figure 1.3-2). Under the retention VQO, human activities are not evident to the casual forest visitor. Most of the project area has a VQO of modification where human activity may dominate the characteristic landscape but must utilize naturally established form, line, color, and texture. It should appear as natural when viewed in middle ground or background. The need to improve forest resilience and maintain historic fire intervals needs to be balanced with maintaining the visual quality of the project area.

DECISION RATIONALE

Alternative 4 modified best meets the Purpose and Need because it reduces the most area (1,434 acres) of ponderosa pine below the mountain pine beetle infestation threshold of 80 basal area (BA, measured as 80 ft²/acre) (Table 2). Ponderosa pine is the high priority cover type to improve forest resilience to mountain pine beetle. In addition to treating the units identified in Alternative 4 of the FEIS, Alternative 4 modified treats six additional units as described earlier in this decision document.

I considered significant issues and environmental impacts in my decision. The ID Team and public identified old growth and visual quality as two issues of greater concern. Analysis shows that Alternative 4 modified enhances old growth conditions while treating the highest area of ponderosa pine.

The scenery analysis predicts a departure from the retention VQO if Unit 8 is treated. Other areas of the Bitterroot National Forest have had similar treatments and the visual effects of the treatments were reduced for 3-5 years (Trapper-Bunkhouse photo monitoring). The treatment in this unit is an intermediate harvest that would leave enough trees in the unit to obscure skyline corridors and reduce visibility of the TLM trails. I believe the effects of a mountain pine beetle infestation on this south and southeast facing slope would have longer-term impacts than harvest of this 38-acre unit. Should fire follow a mountain pine beetle infestation, the potential for crown fire would be high given the close canopy of the unit. Treatment of this unit reduces the potential for a mountain pine beetle infestation, maintains the treatment effectiveness in the adjoining campground, and maintains the large, live ponderosa pine and Douglas-fir trees in the unit.

Under Alternative 4 modified, a slightly higher percentage of the treated units are also in the WUI, which would improve options for managing fires in the project area, especially adjacent to the National Forest boundary. Two ponderosa pine old growth units are treated in Alternative 4 modified but these units have a high potential of retaining old growth characteristics under the proposed prescriptions. These treatments would protect the old growth from mountain pine beetle infestation and improve their resilience to fire. As the units develop, there is a high potential to create larger areas of old growth. Alternative 4 modified does not burn in Unit E, which would maintain Selway-Bitterroot Roadless Area attributes and Canada lynx potential habitat.

The Como Forest Health Project FEIS documents the analysis and conclusions upon which this decision is based. The FEIS lists extensive, effective, and realistic design criteria and mitigation measures that are included in Alternative 4 Modified and will minimize potential environmental harm (FEIS pgs. 2-19 2-25).

The issue indicators in Alternative 4 would not change with the modifications made to the alternative in this decision (FEIS Table 2.4-3).

Table 2: Comparison of Areas Treated by Alternative to Meet the Como Forest Health Project Purpose and Need. Interpretations of these results are discussed in Chapter 3.

MEASURE	ALT 1	ALT. 2	ALT.3	ALT.4	ALT 4 MODIFIED
REDUCE POTENTIAL MOUNTAIN PINE BEETLE-CAUSE MORTALITY IN PONDEROSA PINE					
Ponderosa pine forest with basal area less than 80 ft ² /acre (area)	3011	1,393	1,373	1,352	1,434
IMPROVE FOREST RESILIENCE TO INSECT AND DISEASE COMPLEXES, MOUNTAIN PINE BEETLE, DOUGLAS-FIR BEETLE, DWARF MISTLETOE, ROOT ROT					
Cover Types treated (% area)	existing	treated			
Ponderosa pine	3,346 (59)	1,962 (58)	1,987 (59)	1,570 (47)	1640 (49)
Douglas-fir	1,994 (35)	1,125 (56)	957 (48)	546 (27)	591 (30)
Lodgepole pine	227 (4)	189 (83)	189 (83)	0	0
Sub-alpine fir	55 (1)	31 (56)	30 (54)	2 (4)	2 (4)
Aspen	21 (0.4)	0	0	39	39
REDUCE FUEL LOADS TO RETURN OR MAINTAIN HISTORIC FIRE RETURN INTERVALS IN THE PROJECT AREA AS MEASURED BY POTENTIAL FIRE SEVERITY					
Area by Fire Type (acres)					
Surface fire	1,729	3,611	2,914	2,828	2,894
Torching fire	3,420	1,921	2,467	2,406	2,346
Crown Fire	497	165	315	462	456
MAINTAIN THE VISUAL INTEGRITY OF THE LARGER LAKE COMO RECREATION AREA					
Commercial harvest units visible from viewsheds with retention VQO (unit #)	none	8, 9, 15, 16, 45, 46, 47	Part 9, 45, 47	none	8, 9
Area that meets visual quality objectives	All viewpoints meet VQOs at this time	Some views from Lake Como, Lake Como Recreation area, Lake Como Road do not meet VQOs	Some views from Lake Como, Lake Como Recreation area, Lake Como Road do not meet VQOs	All viewpoints meet VQOs	38 acres from Lake Como would not meet VQO
ECONOMICS AND PROJECT FEASIBILITY					
Volume Harvested (CCF)	0	11,845	10,745	9,838	11,339
Stumpage (\$/CCF)	0	21.77	44.09	38.16	46.76
Is Alternative feasible	yes	yes	yes	yes	yes
Present Net Value (PNV), Mandatory expenditures only (\$)	NA	47,000	255,000	181,000	344,000
PNV, all expenditures (\$)	NA	-208,578	-258,692	-268,417	-105,000
Total jobs contributed	0	82	78	72	81
Total labor income (\$)	0	3,809,000	3,595,000	3,307,000	3,740,000

PUBLIC INVOLVEMENT

A notice of intent to prepare an EIS was published in the Federal Register on June 17, 2013 (Vol. 78, No. 116 FR 36163, Vol. 78, No. 123 FR 38287). In addition, the proposed action was listed in the Bitterroot National Forest Schedule of Proposed Actions and updated periodically during

the environmental analysis. People were invited to review and comment on the proposal through letters, e-mails, and news releases in February 2013. .

The scoping process and public comments identified the following issues and were used to refine the scope of the analysis. A full description of issues significant to the proposed action appears in chapter 1 of the FEIS.

- Do not construct any new roads: The Forest Service received comments suggesting the project be designed such that new roads would not be constructed. The ID Team developed Alternative 3 in which only areas that did not require the construction of new national forest system roads, tracked line-machine trails, or temporary roads would be treated.
- Forest treatments should sustain big-game winter range and other wildlife habitat needs: More than 50 percent of the Como Forest Health project area is MA 2, which has a goal of optimizing elk winter range habitat. Another almost 40 percent of the project area is in MA 3a, 3b, or 3c which have similar direction to manage big-game winter range within the context of meeting visual quality objectives. Elk (big-game) winter range is described by the following habitat components: forage quality, forage/cover ratio, security, hiding cover, and thermal cover. Many public comments were directed at the effects the proposed project would have on big-game habitat components. The ID Team developed Alternative 4 to address this issue.
- Old-Growth Forest: Forest Plan standards require old-growth forest occur in three percent of Management Area (MA) 1 and eight percent of MAs 2 and 3a, within each 3rd order drainage. In MA 3c the standard is that 8 percent of each separate piece of MA 3c be old growth forest. Each of these MA standards specifies that the area of old growth forest should be 40 acres or larger. Though there are many large diameter trees in the Como Forest Health project area, there are very few units that qualify as old growth forest as defined by Green et al. (1992, errata 2005). Most ponderosa pine units that appear to qualify as old growth forest do not have enough trees older than 170 years or DBH of 21 inches or larger. The Forest Plan allows the regeneration of old growth stands when other stands achieve old growth status and sanitation and salvage harvests in old growth forests if old growth characteristics are retained after logging (FP II-20). The Forest Service does not propose to regenerate existing old growth stands in the Como Forest Health project. However, the Forest Service does propose intermediate harvests to conserve old growth characteristics from disturbances such as fire and mountain pine beetle infestations, and create stand conditions that develop old growth attributes. An example of this type of treatment would be thinning around the larger diameter trees to reduce ladder fuels and provide more growing space to enhance tree growth rate and mountain pine beetle resistance. We developed an alternative that does not treat within old growth forest because of the risk that proposed treatments might not preserve all existing old growth characteristics when implemented (FEIS pgs. 3.1-47 and 3.1-49). Old growth forest was not treated in Alternative 4.

- Maintain Visual Quality: The full range of visual quality objectives (VQO) is present in the Como Forest Health project area from Maximum Modification (MA 1) to Retention (MA 3c). MA 3c is adjacent to the Lake Como road (NFSR 550 and 1111), Lake Como, and Lost Horse road (NFSR 429). Treatments proposed in MAs with retention and partial retention VQOs may not meet the objectives so treatments were either modified or dropped in alternatives to the proposed action. Commercial harvest units in MAs with retention VQO were not considered in Alternative 4. Some of these same units were not considered in Alternative 3 because they required road or trail construction to access them.

Sediment production was another issue in the analysis because Lick Creek is on the Clean Water Act 303d list as a sediment-impaired stream. This issue did not determine the scope of analysis because it would be addressed in the same way under each action alternative. The only differences in effects would be between the action alternatives and Alternative 1, no action alternative.

A draft environmental impact statement (DEIS) was published for review and comment in the Federal Register on Sept 26, 2014 (Vol. 79, No. 187 FR 57929). Letters and e-mails providing notice that the DEIS was available were sent on Sept. 16, 2014 to people who had commented on the proposal, tribal governments, and other governmental agencies. Additional notice was provided in the Oct. 1, 2014 legal notices of the Ravalli Republic, and through news releases on Sept. 29, 2014 and Nov. 12, 2014.

The FEIS and draft ROD were released March 14, 2015, which started the pre-decisional administrative review process, objection process, (PF-PUBLIC-037). Two objections were received. The FEIS was published in the Federal Register June 12, 2015.

ALTERNATIVES CONSIDERED

In addition to the selected alternative, I considered four other alternatives in detail, which are discussed below. Alternative 4 is the environmentally preferred alternative. Though system roads are built in Alternative 4, one road segment provides legal access to acquired lands and the other reduces the impacts of an old road on an adjacent riparian corridor. The proposed road segments would be located for the shortest distance considering landform and avoid construction adjacent to riparian areas and of a new ditch crossing.

Alternative 4 retains the most thermal cover, does not treat old growth or areas in sensitive viewsheds, and avoids impacts on Canada lynx potential habitat and on Roadless Area attributes. Old growth forest and thermal cover habitat components are very limited in the project area though the potential to support their development through management exists. The prescribed fire proposed in Unit E has the potential to burn hotter than expected and have larger effects on the potential lynx habitat and Roadless Area attributes.

Alternative 3 may be considered the environmentally preferred alternative because no new roads would be constructed. However, no road access would be provided across the Bitterroot Irrigation District ditch to the acquired lands. The lack of legal road access would reduce

management options on the acquired lands for the next 10 to 20 years and mountain pine beetle populations would continue to develop in this low elevation, ponderosa pine sites. Lack of legal access may reduce response times if a fire ignites or burns onto this parcel. A more detailed comparison of these alternatives can be found in the FEIS in Chapter 2 on pages 2.28-2.32.

Alternative 1 – No Action alternative; current management plans would continue to guide management of the project area (FEIS Figure 2.2-1). No timber harvest, thinning, road construction or reconstruction, or prescribed fire would be implemented to accomplish the Como Forest Health project objectives.

Alternative 2 – Proposed Action, approximately 1,962 acres of ponderosa pine and 189 acres of lodgepole pine forest would be treated to reduce their susceptibility to mountain pine beetle infestation under Alternative 2. Another 288 acres would be treated to reduce dwarf mistletoe and Douglas-fir beetle hazard. Commercial timber harvest would occur on 1,962 acres and another 531 acres would be non-commercially thinned. All treated units would be followed with a post-harvest review that would evaluate the need for additional non-commercial thinning, slash piling, and the type of slash treatment.

Low severity prescribed fire would follow most of the treatments in commercial harvest units. In addition, low severity fires would be prescribed on 765 acres (Units A, B, C2, D, E2, and H) and moderate severity fire would be prescribed on 542 acres (Units C and E) outside of harvest or thinning treatment units. Fuels would be reduced on 1999 acres using mechanical treatments and prescribed fire, on 1,307 acres using prescribe fire only, and on eight acres using harvest treatment only. Approximately 67% (2,236 acres) of the treated area is in the wildland-urban interface (WUI) (FEIS Table 2.2-2).

Approximately 1.7 miles of new system road, 1.98 miles of temporary road, and 2.6 miles of tracked line-machine (TLM) trail would be constructed to access timber (FEIS Figure 2.2 2). Individual lengths of road or trail vary between 69 and 5,667 feet (FEIS Table 2.2-2). New system roads would be stored following timber harvest and temporary road, and tracked line-machine trails would be rehabilitated (FEIS Table 2.2 5).

Alternative 3 – No new roads would be constructed in this alternative including temporary roads, tracked line-machine trails, or excavated skid trails. Approximately 1,987 acres of ponderosa pine and 189 acres of lodgepole pine forest would be treated to reduce their susceptibility to mountain pine beetle infestation. Another 162 acres would be treated to reduce dwarf mistletoe and Douglas-fir beetle hazard. Commercial timber harvest would occur on 1,292 acres and another 924 acres would be non-commercially thinned. All treated units would be followed with a post-harvest review that would evaluate the need for additional non-commercial thinning, slash piling, and the type of slash treatment.

Low severity prescribed fire would follow most of the treatments in commercial harvest units. In addition, low severity fires would be prescribed on 401 acres (Units B, D, and G) and moderate severity fire would be prescribed on 542 acres (Units C and E) outside of harvest or thinning treatment units. Fuels would be reduced on 2,163 acres using

mechanical treatments and prescribed fire, on 53 acres using harvest treatments only, and on 943 acres using prescribe fire only. Approximately 65% (2,059 acres) of the treated area is in the WUI (Table 2.2-2).

Alternative 4 –Approximately 1,570 acres of ponderosa pine and no lodgepole pine forest would be treated to reduce their susceptibility to mountain pine beetle infestation. No Douglas-fir cover types would be treated to reduce dwarf mistletoe and Douglas-fir beetle hazard. Commercial timber harvest would occur on 1,115 acres and another 769 acres would be non-commercially thinned. All treated units would be followed with a post-harvest review that would evaluate the need for additional non-commercial thinning, slash piling, and the type of slash treatment.

A low severity prescribed fire would follow most of the treatments in commercial harvest units. In addition, low severity fire would be prescribed on 31 acres (Unit D) and moderate severity fire would be prescribed on 171 acres (Unit C) outside of harvest or thinning treatment units. Fuels would be reduced on 1,857 acres using mechanical treatments and prescribed fire, on 48 acres using harvest treatments only, and on 202 acres using prescribe fire only. Approximately 72% (1,509 acres) of the treated area is in the WUI (Table 2.2-2).

Approximately 0.7 miles of new system road, 1.2 miles of temporary road, and 0.4 mile of tracked line-machine (TLM) trail would be constructed to access timber (FEIS Figure 2.2 4). Individual lengths of road or trail vary between 69 and 2,226 feet (FEIS Table 2.2-4). New system roads would be stored following timber harvest and temporary road, and tracked line-machine trails would be rehabilitated (FEIS Table 2.2 5).

Table 3: Proposed Activities in the Alternatives (Alt.) for the Como Forest Health Project.

ACTIVITY	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT 4 MODIFIED
PROJECT OVERVIEW					
Project Area Treated (acres)	No New Treatments	3,314	3,159	2,107	2254
Area of prescribed fire only (acres)	0	1307	943	202	202
Area of timber management without prescribed fire (acres)	0	8	53	48	48
Area of timber management with prescribed fire (acres)	0	1999	2163	1857	2004
TYPE OF TIMBER MANAGEMENT (ACRES)					
Clearcut	0	0	0	0	0
Commercial thin (40-80 ft ² /ac BA)	0	838	804	773	895
Group selection	0	288	162	0	63
Uneven-aged (individual tree selection)	0	342	326	342	342
Total Commercial Harvest (acres)	0	1,476	1,292	1,115	1,300
Non-commercial Thinning	0	531	924	769	731
FIRE AND FIRE MANAGEMENT					
Prescribe Fire (acres)	NA	3,320	3,105	2,075	2,206
Broadcast burn Low	NA	2,766	2,551	1,904	2,035
Broadcast burn Mod.	NA	542	542	171	171

ACTIVITY	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT 4 MODIFIED
Area treated in Wildland-Urban Interface (acres)	NA	2,236	2,059	1,509	1,636
% of treatments in the wildland-urban interface	NA	67	65	72	73
TYPE OF YARDING (ACRES) AND ASSOCIATED DEVELOPMENTS					
Tractor	NA	909	935	903	1,036
Skyline	NA	179	75	46	46
Landing piles (number)	0	193	104	93	119
Landing area (acres)	NA	27.4	19.3	17.4	20.9
ROADS AND ROAD MANAGEMENT					
System road construction (mile)	0	1.7	0	0.7	0.7
Temporary road development (mile)	0	2.0	0	1.2	1.4
Tracked Line-Machine Trail (mile)	0	2.6	0	0.4	1.0
Undetermined Roads to Retain (mile)	7.17	3.35	3.35	3.35	3.35
Undetermined Roads to decommission (mile)	0	3.82	3.82	3.82	3.82
Watershed Improvement (sites)	0	10	10	10	10
Roads stored (miles)	5.09	6.19	6.19	6.19	6.19

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

To the best of my knowledge, my decision is consistent with all laws, regulations, and agency policy relevant to this project. The following discussion, though not all-inclusive, provides information on topics raised by the public or other agencies.

NATIONAL FOREST MANAGEMENT ACT

The selected alternative is consistent with the National Forest Management Act (NFMA) requirements under 16 USC 1604 (g) (3) (E), which concerns even-aged management and clearcutting. The cutting of live trees to create even-aged systems is not proposed.

1. No soil, slope, or other watershed conditions will be irreversibly damaged (FEIS pgs. 3.6-36, Appendix A). 0.67 mile of system road will be built during this project removing approximately 2.4 acres from the productive land base (FEIS 3.6-20). Alternative 4-modified maintains organic matter, soil porosity, and topsoil by the application of Best Management Practices (BMPs), Soil and Water Conservation Practices (SWCPs), and mitigation measures (FEIS pg. 3.6-38). Localized and limited detrimental soil disturbance will occur on landings, skid trails, temporary roads, or where soils are intensely heated, for example under logs or around roots. Detrimental soil disturbances will be managed according to Region 1 Soil Quality Guidelines to ensure soil productivity is maintained in activity areas. Compacted soils from terracing, historic logging activities, and re-used skid trails will be rehabilitated and trend soil productivity towards a net improvement (FEIS pgs. 3.6-25 – 3.6-34)
2. The units will be fully stocked following the commercial thin and prescribed fire treatments. Stands within the project area that have had regeneration harvests from

the 1950s to the present have been certified and are adequately stocked. In this project, we are proposing stand regeneration harvest in group selection units. Stands that are designed for group selection would either regenerate naturally or be artificially regenerated by planting trees to appropriate stocking levels within 5 years (FEIS pg. 3.1-1).

3. The application of Inland Native Fish Strategy standards and guidelines, programmatic agreements with the U.S. Fish and Wildlife Service, BMPs, project design features, and mitigation measures in Alternative 4-modified will protect streams, stream banks, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment (FEIS pp. 3.7-8, 3.7-28, 3.7-29, 2-21 – 2-22, Appendix A).
4. In Alternative 4-modified, the harvesting systems were selected based on site-specific resource requirements and not primarily to generate the greatest dollar return or the greatest unit output of timber (FEIS pg. 3.1-2).

SITE-SPECIFIC BITTERROOT NATIONAL FOREST PLAN AMENDMENT

Implementation of Alternative 4-modified will require a site-specific amendment to the Bitterroot Forest Plan (1987) (FEIS p. 1-14 to 1-16 Appendix F). Therefore, my decision includes an amendment that will modify the following Forest Plan standards specifically as they relate to the Como Forest Health Project decision:

- Visual Quality Standards for Unit 8
- Winter range thermal cover
- Coarse woody debris

Appendix F of the Como Forest Health FEIS contains detailed information about this amendment. The Visual Quality Objective amendment would apply only to Unit 8, 38 acres west of Three Frogs campground above Lake Como. Visual Quality Objectives have not been modified in any other project on the Bitterroot National Forest. Modifying the Visual Quality Objective for Unit 8 will not have a significant effect because of the small area (38 acres) and the relatively short duration of effect.

Section 1926.51 of the Forest Service Directives (www.fs.fed.us/emc/nfma/index5.html) gives guidance for determining what constitutes a “significant amendment” under NFMA. I have determined, based on this guidance, that this site-specific forest plan amendment is not significant. It is not significant because it will not significantly alter the long-term relationship between levels of multiple-use goods and services originally projected; and, it will not have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period. The amendment modifies standards and guidelines in the Como Forest Health project area. Therefore, it is not a long-term change in the Forest Plan. The public has been notified of this amendment throughout the NEPA process.

FOREST PLAN CONSISTENCY

The Bitterroot National Forest Plan (Forest Plan) provides general management direction for the Forest, and establishes Forest-wide and management area standards and guidelines (USDA Forest Service 1987, Chapter II). Management activities are to be consistent with the Forest Plan (16 USC 1604 (i)).

I have evaluated the consistency of the alternatives with Forest Plan standards. Alternative 4-modified is consistent with the Forest Plan, meets Forest Plan standards, as amended, and will contribute toward reaching Forest Plan goals and objectives. Consistency with these standards can be found throughout the FEIS (pgs. 3.1-1 to 3.1-4, 3.4-8-3.4-9, 3.5-3 – 3.5-5, 3.6-2 - 3.6-4-38-3.6-41, 3.7-10-3.7-12, 3.8-3 – 3.8-4, 3.9-2, 3.10-2 to 3.10-4, 3.11-2, 3.12-1-3.12-5, 3.13-2-3.13-3, 3.13-7, 3.14-10, 3.15-2). The Biological Evaluations and Biological Assessments confirm that this project will not impact the viability of sensitive, or threatened and endangered species (FEIS Section 3.3-190, 3.8-31, 3.8-32, 3.9-8, 3.9-9).

NATIONAL ENVIRONMENTAL POLICY ACT

NEPA requires Federal agencies to:

- a) use a systematic, interdisciplinary approach in planning and decision making
- b) consider the environmental impact of proposed actions
- c) identify adverse environmental effects which cannot be avoided should the proposal be implemented
- d) consider alternatives to the proposed action
- e) consider relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity
- f) identify any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

I find the Como Forest Health Project analysis process and documentation is consistent with NEPA. The CEQ provides NEPA guidance for government agencies, and interprets regulations on cumulative effects. A cumulative effects analysis requires a concise description of identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonable foreseeable effects of agency proposal for action and its alternatives may have a continuing, additive, and significant relationship to those effects. The CEQ regulations do not require agencies to catalog and analyze all individual past actions. Information about past actions that may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decision-making (CEQ 2005). However, I directed the Como Forest Health Project interdisciplinary team to describe past forest management activities and their effects as relevant to the cumulative effects analysis (FEIS, Appendix B).

CLEAN WATER ACT

The Como Forest Health Project complies with the Clean Water Act (FEIS pgs. 3.7-1 to 3.7-2). Soil and water resources are protected through the application of design features and mitigation measures (FEIS 2-19-2-23) and soil and water conservation practices listed in the

FEIS, Appendix A. Lick Creek is listed on the Montana 2014 impaired waters list. Reducing sediment levels in this tributary will improve one aspect of its impairment. The soil and water mitigation measures and rehabilitation projects will reduce potential long-term sediment contributions in this stream and contribute to water quality improvement.

CLEAN AIR ACT

The basic framework for controlling air pollutants in the United States is the 1970 Clean Air Act, as amended in 1990 and 1999 (42 USC 7401 et seq.). The main air quality concern associated with this project is the amount and duration of particulate matter produced by prescribed burning. All prescribed burning will be in full compliance with Montana Department of Environmental Quality air programs through cooperation with the Montana Idaho Airshed Group (FEIS p. 3.4-13). I have concluded that Alternative 4-modified meets the Clean Air Act and the Montana Clean Air Act (FEIS p. 3.14-5 to 3.4-10).

ENDANGERED SPECIES ACT

The Bitterroot National Forest Fisheries Biologist, Wildlife Biologist, and Botanist evaluated the effects of the alternatives on threatened and endangered fish, wildlife, and plant, species, respectively (Section 3.3 FEIS). The Fisheries Biologist prepared a Biological Assessment of bull trout (PF-FISH-012) and the U.S. Fish and Wildlife Service (USFWS) concurred with the Forest Service determination "that the proposed project is not likely to adversely affect bull trout, bull trout critical habitat, and proposed bull trout critical habitat." As there are no threatened and endangered plant species known to occur in the Como Forest Health project area, consultation with the USFWS was not required, and Biological Assessments were not prepared.

The Bitterroot National Forest is designated as secondary/peripheral Canada lynx habitat (FEIS 3.3-9). The project effects on Canada lynx habitat were evaluated as described in the NRLMD ROD (FEIS pg. 3.3-30) and the analysis showed there would be "No Effect" (FEIS pg. 3.3-43). Consultation with the USFWS is not required because Canada lynx are not listed as threatened on the Bitterroot NF and the determination was "No Effect."

Forest Service resource specialists prepared Biological Evaluations or Biological Assessments for sensitive fish, wildlife, and plants and summarized the conclusions in the FEIS (FEIS pgs. 3.3-190, 3.8-32, 3.9-9, 3.9-10-33, respectively). The conclusions were either "No Impact" or "May Impact Individuals or Habitat but not likely to contribute to a trend towards Federal listing or loss of viability to the population or species."

Alternative 4-modified would have effects similar to Alternative 4 because the soil and water rehabilitation projects would be the same and the timber harvest would be similar. The determinations of effect for threatened, endangered, and sensitive species were the same as Alternatives 2 and 3. Therefore, the determinations would be the same for Alternative 4-modified.

ENVIRONMENTAL JUSTICE ACT

Executive Order 12898, issued in 1994, orders federal agencies to identify and address any adverse human health and environmental effects that disproportionately impact minority and

low-income populations. Based on the composition of the affected communities and the cultural and economic factors, Alternative 4-modified will have no adverse effects on human health and safety or environmental effects on minority, low-income, or any other segments of the population (FEIS pg. 3.15-10).

MIGRATORY BIRD TREATY ACT

The design features and mitigation measures in Alternative 4-modified provide adequate conservation measures for migratory birds. Overall, impacts on forest land birds are expected to be minimal and are not expected to affect species viability (FEIS pg. 3.3-182-184).

NATIONAL HISTORIC PRESERVATION ACT

Alternative 4-modified would not affect any cultural resources. Recognizing the potential exists to encounter and disturb unidentified sites during project activity, mitigation practices require halting activities and notifying the Forest Archaeologist, if cultural resources are encountered during project implementation. Formal consultation has been completed with the Confederated Salish and Kootenai Tribes and the State Historic Preservation Office in accordance with the Memorandum of Understanding (PF-HERT-001). Heritage and Tribal interests are regulated by federal laws that direct and guide the Forest Service in identifying, evaluating, and protecting cultural resources. Alternative 4-modified will comply with these federal laws because all of the analyzed Alternatives comply (FEIS pg. 3.11-5) and Alternative 4-modified is within the parameters of these alternatives.

PERMITS REQUIRED

Removing or replacing culverts within an active stream channel requires a 124 permit from the Montana Department of Fish, Wildlife, and Parks. In certain instances, a 404 permit from the Army Corps of Engineers or 318 permit from Montana Department of Environmental Quality may also be required. The applicable permits must be obtained prior to conducting the work. The permits sometimes contain additional site-specific mitigations to minimize damage to the aquatic ecosystem. Appropriated dollars from the Forest Service annual budget is also required for implementation of the culvert work. No other permits, licenses, grants, or authorizations are needed to implement the decision.

2001 ROADLESS RULE

The 2001 Roadless Rule was the subject of litigation in multiple jurisdictions. Ultimately, the Rule was judicially upheld and it is in effect, with the exceptions of the States of Idaho and Colorado where separate rules apply. See *Wyoming v. U.S.D.A.*, 661 F.3d 1209 (10th Cir. 2011) (upholding 2001 Roadless Rule); *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094 (9th Cir. 2002) (reinstating Roadless Rule); *Jayne v. Sherman*, No. 11-35269 (9th Cir. Jan. 7, 2013) (upholding Idaho Roadless Rule).

The Como Forest Health Project Alternatives 2 and 3 proposed a prescribed fire in Unit E that would overlap into the Selway-Bitterroot Roadless Area and analyzed the effects of treatment in the FEIS 3.12. The prescribed fire would require hand digging a fire line along the west side of the unit in the Roadless Area. There is no prohibition on prescribed fire in Roadless Areas (36



CFR 294). However, I have chosen an alternative that does not prescribe burn Unit E. The location of this unit at higher elevations of the project area, its distance from the WUI, and wildlife habitat values outweigh the value of burning this unit at this time. The forest in this unit is within its historical range and though a fire may be probable, treatments at lower elevations in the project area would assist with developing appropriate management strategies to prevent the fire from burning onto private lands.

PRE-DECISIONAL ADMINISTRATIVE REVIEW

The Como Forest Health project was subject to the Project-Level Predecisional Administrative Review Process, "Objection Process," pursuant to 36 CFR 218 Subparts A and B. The Objection Process started March 14, 2015 with a legal notice published in the Ravalli Republic, newspaper of record. The Forest received two objections. The Objection Reviewing Officer reviewed the project in consideration of the objections and suggested remedies. He responded to the Objectors with letters signed June 4, 2015 and found the project complied with all applicable laws and the Forest Plan. On one objection, he issued instructions to the Forest to provide clarifying information to better demonstrate compliance with law, regulation, and policy. One instruction was to remove the reference to 219.19 in the FEIS section headed "3.8.4.6 compliance with Forest Plan and Other Relevant Laws, Regulations, Policies, and Plans" and replace it with appropriate text. The other instruction was to review the recommended literature and document its relevance to the project, if any. The Record of Decision can be signed once the instructions are fulfilled and the FEIS is published in the Federal Register for 30 days. The instructions are completed (PF-OBJ-003, 004) and the FEIS was published in the Federal Register June 12, 2015.

IMPLEMENTATION DATE

The Como Forest Health project can be implemented immediately after the decision is signed.

CONTACT

For additional information about this decision contact Mike Ward, acting Darby District Ranger, Bitterroot National Forest, 712 N. Main, Darby, MT 59829, (406) 821-4244. You may also contact Julie King, Forest Supervisor, Bitterroot National Forest, 1801 N. First, Hamilton, MT., (406) 363-7121. Information is also available at <http://www.fs.fed.us/r1/bitterroot/planning/decisiondocs/decisiondocs.html>



Julie K. King

Forest Supervisor
Bitterroot National Forest

7-14-15

Date

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Appendix A: Design Features and Mitigation Measures

Table's A-1 and A-2 lists the design features and mitigation measures, respectively, that will be applied during the implementation of the Como Forest Health Record of Decision. Design features are standard practices applied during project implementation. Mitigation measures are practices applied in addition to design features to prevent or reduce potentially negative effects. The tables list the practices to be applied to specific units, locations, or conditions to achieve the objective.

Table A- 1: Design Features that will be applied during implementation of the Como Forest Health Project.

OBJECTIVE	DESIGN FEATURE										
SOILS											
Minimize soil erosion and compaction	Activities will comply with Best Management Practices (BMPs) to minimize effects on soil resources. Not all BMPs are listed in this table of Design Features. A complete list of BMPs is in Appendix A of the Como Forest Health FEIS and complete descriptions are available in the Project File.										
Minimize soil compaction	<p>Winter ground-based yarding operations will maintain the following combination of snow depth and frozen soil conditions</p> <table> <tr> <th>Depth of compacted (by equipment) snow under wheels or track tread</th><th>Minimum thickness of solidly frozen soil needed below compacted snow layer</th></tr> <tr> <td>10 or more inches</td><td>0 inches</td></tr> <tr> <td>7 to 10 inches</td><td>1 inch</td></tr> <tr> <td>4 to 7 inches</td><td>2 inches</td></tr> <tr> <td>less than 4 inches</td><td>4 inches</td></tr> </table> <p>*Pre-trailing. Pre-trailing selected skid trails a day or so prior to skidding or other heavy trail use is a way to achieve this objective. If average, pre-compacted snow depth along the proposed trail is more than 15 inches, pre-trailing can be done whether or not the soil is frozen. If pre-compacted snow depth is 8 to 15 inches; pre-trailing should be done only if the soil is solidly frozen in the top one inch or more. Otherwise, pre-trailing should be delayed until more snow falls to accumulate to the 15 inch or more depth. To further aid soil protection, pre-trailing should be done using an "easy-does-it" approach, including slow ground speeds and steady movements. Avoid spinning tires and bouncing equipment around on trails as much as possible. Adequate pre-trailing air temperatures generally are in the low 20's Fahrenheit or lower. For more information about pre-trailing conditions, consult with the Forest soil scientist.</p> <p>Skid trails will be designated and historic trails and road prisms will be used as skid trails to the extent feasible</p> <p>Summer ground-based yarding will occur when soils are dry (soil moisture is near or below the permanent wilting point)</p>	Depth of compacted (by equipment) snow under wheels or track tread	Minimum thickness of solidly frozen soil needed below compacted snow layer	10 or more inches	0 inches	7 to 10 inches	1 inch	4 to 7 inches	2 inches	less than 4 inches	4 inches
Depth of compacted (by equipment) snow under wheels or track tread	Minimum thickness of solidly frozen soil needed below compacted snow layer										
10 or more inches	0 inches										
7 to 10 inches	1 inch										
4 to 7 inches	2 inches										
less than 4 inches	4 inches										
Reduce detrimental soil disturbance (DSD)	<p>Track-line machine units will have constructed trail. All log decking and skidding of volume/trees from track-line machine units will occur on the constructed trails in order to minimize soil disturbance. Similar to temporary roads, all track-line machine trails will be obliterated and rehabilitated upon completion of harvest activities.</p> <p>Rehabilitation activities on temporary road construction would include recontouring, slashing, mulching, seeding with an approved native seed</p>										

OBJECTIVE	DESIGN FEATURE		
	mixture, and fertilizing with an approved organic fertilizer.		
	Pile burning should occur during moist conditions to minimize duff consumption and high severity burn impacts on soils.		
	Hand pile sizes inside units will average 6-8 feet in diameter so localized areas of soil disturbance will be less than about 50 square feet. This does not pertain to slash created on landings during yarding operations. (Individual hand piles will generally not exceed 50 ft2 (pile size approximately 6 to 8 ft in diameter		
	Where feasible, pile and burn slash where detrimental soil disturbance already exists, such as on old log landings and skid trails		
Reduce DSD and prevent the spread of noxious weeds	Undetermined roads used for hauling will be stabilized by removing drainage structures; ripping, seeding, and fertilizing the road bed; and closing the road entrance.		
Maintain soil productivity	Upon completion of commercial harvest and prescribed fire activities, the following levels of coarse woody material (greater than 3 inches diameter) shall be left. This material will include the combination of standing dead as well as down woody fuels.		
	Units	Fire Group	Coarse Woody Debris
		Warm, Dry Ponderosa Pine and Douglas-fir (FG-2 & 4)	5-10 tons/acre
		Cool, Dry or Moist Douglas-fir (FG-5, 6)	10-20 tons/acre
		Cool Sites Usually Dominated by Lodgepole Pine (FG-7) Dry, Lower Subalpine (FG-7) Moist, Lower Subalpine (FG-9)	8-24 tons/acre
	Wood larger than 15 inches in diameter will not be intentionally ignited during hand lighting. It is understood that once hand crews light the fire, fire may burn into and combust some large CWD.		
	Allow time for nutrients to leach from slash prior to burning. The slash will be left through one winter after cutting to allow for initial decomposition and nutrient leaching.		
	Upon completion of prescribed fire or maintenance burning, at least 70 percent ground cover is necessary to prevent detrimental accelerated erosion and loss of soil productivity. In those cases where ground cover is less than 70 percent prior to burning, consumption and loss of ground cover should not exceed 15 percent. Ground cover includes duff, organic soil horizons, basal area of vegetation, fine woody debris, coarse woody debris, and surface coarse fragments. In those cases where ground cover is less than 70 percent prior to burning, fuel consumption and ground cover loss should not exceed 15 percent. Fire prescriptions will be designed to meet these soil protection requirements.		
	The silvicultural prescriptions will be designed to account for future large CWD (>15 inches diameter) recruitment that will meet acceptable levels in stands where CWD is less than minimum levels before treatment. CWD will be left in these stands to the extent feasible to meet minimum requirements that do not pose a fuels hazard. High amounts of small CWD (3-15 inches diameter) may present wildfire risks.		
	CWD will generally be evenly distributed on each acre, unless otherwise agreed to by the Contracting Officer or their designee		

OBJECTIVE	DESIGN FEATURE
WATERSHED AND FISHERIES	
<p>Ensure that within the Riparian Habitat Conservation Areas (RHCAs) the riparian dependent resources receive primary emphasis.</p> <p>And,</p> <p>Ensure that the Montana Streamside Management Zone Laws and INFISH requirements are met.</p>	<p>The standard INFISH (USDA Forest Service 1995) RHCAs will be applied. A map of these areas is located in PF-Fish-001. They are:</p> <ul style="list-style-type: none"> 300 feet on each side of fish-bearing streams 150 feet on each side of permanently flowing, non-fish bearing streams 100 feet on each side of seasonally flowing or intermittent streams 150 feet on each side of ponds, lakes or wetlands > 1 acre in area 100 feet on each side of ponds, lakes or wetlands < 1 acre in area 100 feet of landslide prone areas.
	<p>RHCA boundaries will be designated and marked on the ground in consultation with the fish biologist or hydrologist.</p>
	<p>In RHCAs, trees can be felled when they pose a safety risk. Felled hazard trees will be left on-site (INFISH standard RA-2), unless their removal is deemed necessary for safety reasons by the TSA.</p>
	<p>Generally, trees will not be harvested from Riparian Habitat Conservation Areas (RHCAs). Exceptions are:</p> <ul style="list-style-type: none"> Unit 73: conifers would be removed from the intermittent stream and outer fringe of the wetland RHCA, Units 74: conifers would be removed from the small wetland RHCA, and Unit 70 and 75: cut trees would be left in the RHCA.
	<p>The purpose of these proposed treatments in RHCAs are based on the treatments contribution to promote the long-term ecological integrity of the deciduous species and associated wildlife, while having no effect on native fish (INFISH Standard and Guideline for Watershed Restoration and Habitat WR-1). Note: not all units are in all the alternatives.</p>
	<p>Ground-based equipment will be prohibited from entering SMZs without the appropriate variance from Montana DNRC.</p>
	<p>Log landings, temporary roads, and tracked line machine trails will not be located in the RHCAs. Exceptions include areas where existing log landings occur: near the mapped wetland at Unit 45 and road 62966, Unit 39 along NFSR 5608 and Unit 23 along NFSR 62938.</p>
	<p>Generally, there will be no fuel storage, mixing of fuels, or refueling equipment in RHCAs. If there are no alternatives, refueling in RHCAs may occur, but must be pre-approved by the fish biologist or hydrologist and have an approved spill containment plan. Small pumps (for example, Mark III) and chainsaws can be refueled within the RHCA as long as proper spill containment actions are implemented (USDA Forest Service 1995).</p>
<p>Provide stable roads and conduct road maintenance to minimize sediment.</p>	<p>The TSA or resource specialists will monitor road conditions to ensure they do not contribute sediment to streams. Road maintenance activities (including snowplowing and dust abatement) will follow the requirements specified in the Programmatic Biological Assessment for Road-Related Activities (2008, & 2014) and BNF BMPs (Appendix A).</p>
	<p>Weed -seed-free straw bale check dams or similar treatment will be installed as needed in the inside ditch on NFSR 5621. The check dams will be installed prior to hauling, and maintained for the duration of hauling.</p>
	<p>Project related traffic will be regulated during wet periods to minimize erosion and sediment delivery to streams (INFISH RF-2)</p>
	<p>Side-casting of road material (during road maintenance and snowplowing) into streams, wetland, and RHCAs is prohibited (SMZ Rule #8; INFISH RF-2(f)).</p> <p>Seed, fertilize, and slash decompacted or recontoured roads with a native seed mix and organic fertilizer. Weed-free mulch is required on sites located</p>

OBJECTIVE	DESIGN FEATURE
Provide for diverse and productive native and desirable non-native plant communities in riparian zones.	within sediment contributing distance of streams (about 300 feet).
	Protect and retain sub-merchantable trees and shrubs within 50 feet of streams and wetlands (SMZ Rule #5). If required, an application for Alternative Practice (SMZ Rule #10) would be submitted for manual thinning within the SMZ to include areas that are proposed to benefit aspen and associated species.
	Slash piles will not be created within 50 feet of streams and wetlands.
	Commercial and non-commercial aspen treatment is proposed within 100 feet of streams or wetlands in Units 70-75. The fisheries biologist or hydrologist reviewed the sites to ensure they met the riparian management objectives.
	Prescribed burning is proposed within 100 feet of streams. During development of the burn plan, the sites would be reviewed by the fisheries biologist or hydrologist to ensure they met the riparian management objectives.
	Hand ignition would be allowed within the RHCA, but not within 50 feet of streams or within wetlands (SMZ Rule #3). Fire may be allowed to back into wetlands. Helicopter ignition would not occur within RHCA's. The need for an SMZ Law Alternative Practice would also be assessed when unit-specific burn plans are developed.
Avoid direct effects to native fish and risks associated with aquatic invasive species.	Generally, hand fireline will not be dug in the RHCA's. If needed, hand fireline can be dug in the RHCA's and must 1) avoid wetlands, 2) contain proper drainage structures, and 3) be recontoured and covered with slash upon completion of the burn. Machine fireline is prohibited in RHCA's. Allowing prescribed fire to back into RHCA's and wetlands negates the need for firelines near these areas.
	If drafting from streams occurs, intake hoses will be fitted with a screen mesh equal to or smaller than 3/32 inch.
Ensure that water-related beneficial uses are protected and that State water quality standards are met	Prior to entering the project area all equipment that has the potential to come into contact with water must be inspected, clean and dry. Do not transfer any water, sediment, or vegetation when moving between drafting sites
	Protect the BRID irrigation ditches during harvest including: Lost Horse Feeder Canal and the main BRID Canal from Lake Como.
	The contract administrator will apply and monitor Best Management Practices during timber sale implementation. Applicable BMPs are in the Project File and summarized in Appendix A.
	The design and replacement of the Lick Creek culvert in road 10051 would accommodate a 100 year flood, including associated bedload and debris, and provide passage for aquatic species (INFISH RF-4 & RF-5). This is a low priority crossing for aquatic species because non-native brook trout are very abundant above and below the culvert. The culvert should be replaced in context of the higher priority crossings on the Forest.
	WILDLIFE
Protect aspen clones during burning	After slashing conifers within the aspen clones, drag slash 50 feet away from the clones to prevent high fire severity within and on top of the clone. In Unit 73 and 74, whole tree yard conifers from the aspen clone.
Provide snag habitat for wildlife	Stand level prescriptions by a certified silviculturist and wildlife biologist will provide unit-specific snag retention requirements including spatial distribution, species, and snag sizes.

OBJECTIVE	DESIGN FEATURE								
	<p>Prescriptions will meet the proposed snag standards including the following number of snags over 9" DBH retained by Fire Groups if they exist in the unit prior to treatment.</p> <table border="1"> <tr> <th>Fire Group</th><th>Snags (average number of trees per acre)</th></tr> <tr> <td>2,4</td><td>2-5</td></tr> <tr> <td>6</td><td>4-12</td></tr> <tr> <td>7, 8, 9</td><td>10-15</td></tr> </table> <p>Irregular distribution and small clumps are desirable. Snags retained will include some from the largest diameter size class available within that unit.</p>	Fire Group	Snags (average number of trees per acre)	2,4	2-5	6	4-12	7, 8, 9	10-15
Fire Group	Snags (average number of trees per acre)								
2,4	2-5								
6	4-12								
7, 8, 9	10-15								
THREATENED, ENDANGERED, AND SENSITIVE PLANTS									
Promote revegetation with native plant species	Use local seeding guidelines for detailed procedures and appropriate mixes. Refer to the Forest Seed Mix to determine which species to use (FSM 2070.3)								
Protect sensitive plant populations during harvest operations	<p>Sensitive plant populations would be identified and buffered from project activities. Buffer widths are based on habitat requirements of the specific plant populations. Buffered sensitive plant populations will be mapped and identified in the field</p> <p>Machinery, fire ignition, tree felling, anchor trees, and slash piling would not occur within a sensitive plant buffer. Fire can creep into sensitive plant sites.</p> <p>Proposed alterations to locations of temp roads, TLM trails and landings will follow standard contact provisions for the protection of sensitive plants along with the timely involvement of the Forest Botanist or alternate specialist designated by the Forest Botanist. Sensitive plant populations would be protected by a minimum 100' buffer. Use of existing roads within 100' of sensitive plant populations is allowed.</p>								
Promote revegetation with native plant species	<p>Treat areas with high-risk invasive plant infestations (as defined in Regional Risk Assessment Factors and Rating protocol) before burning. Monitor treatment success after burning and retreat if necessary.</p> <p>Treat invasive plants before obliterating decommissioned roads; re-vegetate after obliteration.</p>								
INVASIVE PLANTS									
Reduce the risk of invasive plant spread	<p>Integrate invasive plant prevention and management in all prescribed burning (FSM 2080).</p> <p>Remove all mud, dirt, and plant parts from off-road logging equipment before moving into the project area. Cleaning must occur off National Forest lands (this does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area).</p> <p>All gravel and borrow sources would be inspected and approved, by the Forest Noxious Weed Coordinator/Forest Botanist, before use and transport. The source will not be used if invasive plants present at the pit are not found at the site of intended use. If invasive plants are present, they must be treated before transport and use.</p> <p>Do not operate equipment or treat areas with leafy spurge (Unit 14). These areas will be identified on a map and in the field.</p>								
HERBICIDE USE									
Protect water quality	<p>Herbicides will not be used to control weeds within a 100-foot radius of any potable water spring development or diversion within the project area.</p> <p>Mixing and loading tanks will occur more than 300 feet from live water where possible. No mixing will occur within 100 feet of live water.</p> <p>Use of herbicides and surfactants adhere to mitigation measures and design criteria in the Weed EIS (2003)</p>								

OBJECTIVE	DESIGN FEATURE
	http://www.fs.usda.gov/detail/bitterroot/landmanagement/projects
TIMBER MANAGEMENT	
Prevent the spread of annosus root disease	Apply borate to freshly cut ponderosa pine stumps greater than 12 inches in diameter (inside bark). Minimize damage to residual trees during harvest
Prevent pine engraver (Ips spp.) population increases	All non-commercial thinning in units with ponderosa pine and lodgepole pine must be performed between the months of July 1 thru December 31. Slash must be properly disposed of, i.e., piled and burned or lopped and scattered. Where limbs and tops exceed three inches in diameter, they need to be bucked in four-foot lengths and scattered to allow time for larger boles to dry out and not become Ips beetle host sites the following year.
RECREATION MANAGEMENT	
Protect recreation facilities	Protect all signs along roads.
Protect public safety	Place area closure signs on roads and trails during harvest and rehabilitation operations, as needed.
RANGE MANAGEMENT	
Protection of Trapper Peak grazing allotment improvements	Trapper Peak grazing allotment improvements will be mapped and protected from damage during logging operations.
HERITAGE RESOURCE MANAGEMENT	
Protect archaeological sites surrounding Lick Creek mineral lick	No ground disturbing activity in the meadow surrounding the lick or on the old logging railroad grade leading from Lick Creek to the lick.
Protect historic logging railroad grades currently in use as FS Roads.	Improvements and maintenance will be confined to existing road prism.
Protect cultural sites within the project area	No ground disturbance or pile burning to occur within 75 feet of known archaeological sites or historic structures. No excavation of historic railroad grades. Report new discoveries of cultural material to the Forest's Heritage specialists.
Protect cambium-peeled trees.	No removal of cambium-peeled ponderosa pine trees. No ground disturbance or herbicide use within the dripline of cambium-peeled trees. Employ directional falling of trees within one-and-a-half tree lengths of cambium-peeled trees. Employ hand removal of shrubs, ladder fuels and surface duff layers prior to use of underburning. Report new discoveries of cambium-peeled trees to the Forest's Heritage specialists.

Table A- 2: Mitigation measures that will be applied during implementation of the Como Forest Health Project.

OBJECTIVE	MITIGATION MEASURE
WATERSHED AND FISHERIES	
Provide stable roads, conduct road maintenance and improve cross-drainage to minimize sediment and meet TMDL objectives for Lick Creek	Install new ditch drain pipe or rock-line ditch at (6) sites on NFSR 5621 and NFSR 5623. Shape road surface to facilitate drainage and apply aggregate surface to road through stream crossing and adjacent upgrade area. Clean existing ditches and pipes where needed.

OBJECTIVE	MITIGATION MEASURE
SCENERY	
Subordinate management activities to the natural character of the landscape on NFSR 5621, 1111, and 429	Where feasible, minimize log landings, roads, and bladed skid trails within sensitive viewsheds (along Lake Como and Lick Cr roads); Units 8, 14, 16, 38, 45, 46, and 59
	Cut stumps to 8 inches or less that are within 125 feet of NFSR 5621 in Units 8, 14, 16, 38, and 59
	Slash piles visible from NFSR 5621, Lake Como, or campground (in Units 8, 14, 16, 38, 45, 46, and 59, would be burned within two years (or one year if feasible) of unit completion. Landing piles should be burned so that most of the debris is consumed, re-piling and re-burning as needed. Landings within sensitive viewsheds will be rehabilitated after the piles are burned by hand or machine scarification to a depth of 6-12 inches deep. Landings will be seeded in the fall, or as practicable, with native seed similar to species found in the surrounding area.
	Within 50 feet of Trail 502 in Unit 8, remove slash, flush cut stumps to 8 inches or less, and burn slash within one year.
Reduce visual contrast	In aspen units, transition ponderosa pine density on the edges of the aspen units to avoid straight lines, right angles, or otherwise create 'unnatural' edges between the two stand types.
	Avoid straight lines and right angles in units adjacent to the forest boundary (Units 19, 26, 27, 28, 53). Vary the residual stand density to blend with adjacent forests. Treatments should follow natural topographic breaks and changes in vegetation.
	In Units 8, 14, 16, 38, 45, 46, 50, and 59 reduce the contrast between treated and untreated forest by softening the edges, retaining some understory trees, and retaining a higher density of trees on the unit borders.
	Reduce visual contrast of skyline corridors in Units 8, 15, 16, 46, and 47 to the greatest extent possible. Where feasible, avoid aligning skyline corridors so they are perpendicular to sensitive views. Vary the distances between cable corridors or establish corridors to minimize residual damage and reduce corridor visibility. Retain irregular clumps of leave trees...
RECREATION MANAGEMENT	
Reduce disruptions of public use in recreation sites	Log hauling may be restricted as agreed to by the District Ranger and Contracting Officer. Otherwise, log hauling will not occur on weekends or holidays The District Ranger may use flaggers during log haul operations on NFSR 5621.
Prevent motorized access through freshly logged units	Use signage, slash, downed logs, earthen humps or berms, or boulders as well as increased agency presence in the area