Chapter 2 Alternatives

This chapter describes and compares the range of alternatives considered for the analysis area. It includes a description and map of each action alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

2.1 Alternatives Considered but Eliminated from Detailed Study

The IDT considered two alternatives to the proposed action. The following are brief descriptions of alternatives eliminated from detailed study and the reasons for eliminating them.

Areas considered but dropped from mechanical treatment. Kitty Creek and Sweetwater drainages were considered early in the planning process for mechanical treatment for fuels and forest health objectives. These areas were not incorporated into an alternative because of grizzly bear secure habitat (Kitty Creek), transportation planning concerns and the amount of roads that would need constructed or reconstructed for minimal returns in terms of fuels or forest health objectives. A small (40-acre) fuels treatment is planned in the immediate vicinity of the recreation residences and would not involve additional roads.

Helicopter Alternative. Reason(s) to consider helicopter logging for mechanical fuels treatment or for forest health would be to harvest steep areas not accessible by tractor logging or large areas with considerable volumes. The project goals and objectives are primarily related to fire and fuels or habitat, not harvesting large volumes of timber, so this alternative would not meet the project's purpose and need.

Since the area identified for treatment is on slopes less than 40% and operable for conventional tractor logging and any volumes would be relatively small and economically uncertain, the use of helicopters was not considered a viable option for harvest. Other factors, such as the lack of suitable landings, presence of RARE II and wilderness areas, the potential impact to wildlife and crucial winter range, the increased analysis needed, higher logging costs, high levels of development and recreation use year-round and the narrow time window that helicopters could operate due to mitigating stipulations, etc. eliminated this alternative from detailed study.

Mechanical treatments. Because of the magnitude of the insect and disease problems in the North Fork drainage, an alternative to cut, pile and then burn hazardous fuels was considered but not analyzed in detail. The amount of dead trees and the enormity of completing such an effort on a large area makes this alternative infeasible and was eliminated from detailed study.

Treatment of spruce beetle, Douglas-fir beetle, or other insects using insecticides, baiting, and trapping. This alternative was dismissed from detailed study, as it is not an effective means of control over large areas. It is too costly to treat large areas with this type of treatment.

Three alternatives were proposed in a letter from the Biodiversity Conservation Alliance. They were considered but not analyzed in detail as explained below:

- ***No Mechanical Treatment Alternative-Treatment with prescribed burning only.*** Prescribed burning on all acres was dismissed, as it would not be feasible to safely burn extensive forested areas with large amounts of continuous hazardous fuels without first implementing mechanical treatments to reduce fuels and break up fuel continuity. Burning would set successional stages back to a grass/forb stage on a large area and would not move the forest vegetation toward the desired condition. It does not meet Forest Plan direction, goals, and objectives for vegetation diversity, and hiding/thermal cover.
- ***No Road Incorporation Alternative***. Biodiversity Conservation Alliance requested a No New Road Addition alternative that would not increase motorized opportunities, since an increase in motorized opportunities would result in an increase in fire risk. A separate alternative is not needed in addition to the action alternatives as no new roads are proposed that would be left open for motorized use. All roads would be temporary roads that would be decommissioned as part of the action alternatives.

- ***Limited Fuel Break Alternative.*** This alternative would state that fuel breaks be established no farther than 0.25 miles from property which is being protected. The action alternatives are designed to reduce fuels within the wildland-urban interface to a distance of ¼ to ½ mile depending on terrain and fuels. The distance needs to vary according to the site-specific conditions and in many cases a ¼ mile would be inadequate, especially considering spotting from a crown fire and the varying terrain and fuels. The one-size fits all approach of a ¼ mile limited fuel break would not meet all project objectives and this alternative was not analyzed in detail.

2.2 Alternatives Considered and Analyzed in Detail

The action alternatives were formulated by the IDT to be responsive to the issue(s) identified during scoping, and to address the purpose and need identified in Section 1.4. The alternatives are designed to be consistent with the Forest Plan and laws, regulations, and policies.

NOTE: Maps of the existing roads, temporary roads, treatment areas for both action alternatives, and RARE II areas are at the end of Chapter 2.

2.2.1 Alternative 1 – No Action

Alternative 1 is the No Action Alternative. NEPA regulations require the Forest Service to identify the No Action Alternative and use it as a baseline for comparing the environmental consequences of the other alternatives (40 CFR 1502.14(d), and Forest Service Handbook 1909.15, 14.1).

Under Alternative 1, current management plans would continue to guide management of the project area. Ongoing activities such as fire suppression, lodge and summer home leases, commercial outfitting (hunting, etc.), grazing administration for commercial livestock, road maintenance and closures, watershed improvements, fisheries enhancements, dispersed and developed recreation, firewood gathering, wilderness management, both motorized and non-motorized dispersed recreation, and invasive species/weed control would continue at present levels.

This alternative would not address the purpose and need for fuels reduction, forest condition and wildlife enhancements. No mitigation measures are necessary.

2.2.2 Alternative 2 – Proposed Action

Alternative 2 is the proposed action. The focus is on fuel reductions and vegetation treatments to: 1) modify fire behavior to enhance suppression capability, reduce suppression costs, provide for higher levels of public and firefighter safety, lower the risks of losing developments and other resource values to wildfire and 2) maintain/enhance wildlife habitat, forest health and specific riparian zones.

Project activities associated with this proposed action (*see* Figure 4) include mechanical, mechanical and prescribed burning, and prescribed burning for fuel reduction, wildlife habitat (including riparian), and forest health:

Figure 4. Total acres of treatments for Alternative 2.

Purpose	Mechanical (Approx. Acres)	Mechanical/Prescribed Burning (Approx. Acres)	Prescribed Burning (Approx. Acres)	Total Acres (Approximate)
Fuels Reduction	1353	200	8586	10139
Wildlife	241	270	4898	5409
Forest Health	113	0	0	113
Hazard Tree Removal-Power Line	209	0	0	209
Total	1916	470	13484	15870

The operating season with ground-based equipment on all harvest areas would be from July 1 to March 31 annually. No harvest activity would be allowed during the spring period April 1 to June 30. Burning would occur from March 1 through mid-May or from October through December depending on burning conditions. Prescribed burning during the spring period would be completed by mid-May.

Vegetation treatments would remove hazardous fuels resulting from insect epidemics and older classes of trees. This would be accomplished by thinning tree densities in areas that most contribute to crown fires and removing trees in areas that contribute to future high intensity surface fires or in the wildland-urban interface. In areas with opportunities for wildlife habitat, forest health or riparian enhancements, treatments would be implemented to accomplish this goal.

The proposed action responds to the purpose and need and the key issues; the rationale for the alternative is described in the Background and Purpose and Need (See Sections 1.2 and 1.4). The proposal was designed to address the key issues of wildfire risk and hazardous fuels reduction in Section 1.6.1 and benefit wildlife habitat and forest health in the identified locations.

Fuel treatments would occur in Douglas-fir, Englemann spruce, lodgepole pine and shrub/grassland habitats and would remove hazardous fuels by mechanical methods to reduce wildfire spread rates and fire intensity. This would be accomplished by salvaging dead and dying trees that over time would fall and accumulate on the ground contributing to intense surface fires, thinning overstory tree densities that contribute to crown fires and removing small trees near the remaining overstory that are capable of carrying a surface fire up into the tree crowns. In addition, existing natural dead and down fuels would be removed decreasing surface fuels that contribute to fire spread. Tree removal would be accomplished by using mechanized equipment first, followed by prescribed burning in designated areas.

Temporary Roads

No construction of new system roads (roads that would remain permanently on the Forest transportation system) would occur. There would be no net increase in roads in accordance with the direction, priorities, and guides given in Forest Plan Amendment #94-001 (III-75) "no net increase in roads". Temporary roads totaling approximately 12 to 12.5 miles would be constructed under Alternative 2; this includes about 8 miles of temporary roads outside of RARE II areas and 4.0 to 4.5 miles in RARE II that would be required for mechanical treatments. All temporary roads would be decommissioned immediately following treatment activities.

In addition, approximately 2.8 miles of user created routes and future user created, non-system roads (such as result from firewood cutting) would be obliterated as funding becomes available. These non-system roads were identified in the North Fork Road Analysis Report (SNF 2002) prepared in conformance with the Roads Policy-36 CFR Part 212 et al.

RARE II Areas

An estimated 77, 719 acres of RARE II areas are in the analysis area (19%). Mechanical treatment of fuels would occur in RARE II, four miles of temporary roads would be needed under Alternative 2. Within RARE II areas, 501 acres total in 18 different locations would receive mechanical fuels treatment (this is approximately 0.6% of the total RARE II acres). The remaining acres outside of RARE II and Wilderness total 31,111 acres or 7% of the analysis area. Mechanical treatment for fuels reduction would occur on approximately 1,051 acres and prescribed burning on 2,291 acres outside of RARE II areas.

Wilderness Areas

No mechanical treatments would occur in Wilderness; however, prescribed burning including the use of helicopters would be used in Wilderness. 309, 410 acres, or 74% of the analysis area is in Wilderness. Prescribed burning would involve 2, 291 acres of Wilderness, or less than 1%.

Scheduling and Implementation Timeframes

The projected timeframe for each phase of the project is described below. These projections are based upon restrictions on operating seasons and scheduling, and average weather conditions. It is also based upon the assumption that several timber sale contracts would be offered (and possible concurrent operations) to expedite project completion in the shortest time possible. This is being planned to reduce hazardous fuels and meet project objectives in the shortest time reasonable to minimize impacts to wildlife and recreationists.

Implementation. Project implementation is subject to budget and availability of funds and personnel. Scheduling, timing, and figures for proposed treatments, units, acreages, and volumes are approximate and may vary depending weather and actual ground conditions. If an action alternative is selected in the decision, the intent is to begin implementation of the project in the fall of 2004 at the earliest and complete over the course of the next five to ten years. Project areas have the potential to enhance natural fuel breaks such as rock areas, meadows, or other natural fire barriers. Areas with excessive tree mortality and excessive fuel buildups can be reduced, especially in strategic areas near developments.

The use of mechanical treatments and prescribed fire is a common practice used by land management agencies to reduce fuels. In many areas, including the North Fork corridor, it would be difficult and unsafe to conduct a burn without prior mechanical fuel treatments. Both mechanical fuel treatment and prescribed burning, in combination, are needed to achieve the purpose and need, goals, and objectives for the proposed action. Implementation includes the use of fire behavior modeling as a guide to fuels management; mechanical and prescribed treatments to reduce hazardous fuels and modify fire behavior were evaluated using the fuels hazard analyses and fire behavior models.

If an action alternative is selected in the decision, implementation would include one or a combination of the actions described, and would be integrated in key areas as part of the overall long term fuel and vegetation management strategy for the North Fork corridor. Fire behavior breaks, fuel reduction, thinning, salvage harvest, timber sales, and prescribed fire would be concentrated in the identified treatment areas. To accomplish hazardous fuel reductions, other actions, such as commercial fuelwood sales, house log sales, could occur, including the possible use of contracting and service or stewardship contracts. In general, contracts would include:

- Timber sale contract duration would be for a minimum of three years. Contracts for mechanical treatments would be let and treatments initiated in 2004 at the earliest and continue for a minimum of three years for each contract.
- Harvest preparation (layout, cruise, mark, & prepare contract) would begin in late 2004 at the earliest.
- Timber sale contract(s) would be let and timber harvest action initiated in 2004 if possible. All treatment areas may be accessed and harvest operations with ground-based equipment will occur during the normal operating season from July 1 through March 31 annually.
- Fuelwood gathering in designated areas and designated slash piles would be ongoing in the long term.
- Slash pile burning, chipping or jackpot burning would occur after each unit is treated, generally within two years. Usually, burning usually occurs a year after mechanical treatment is complete so that fuels can dry. The last units mechanically treated would be broadcast burned or jackpot burned, and the slash piles would be burned. Where feasible, fuelwood gathering in easily accessible slash piles would be permitted the year before burning.
- Prescribed burning of treatment units not receiving mechanical treatment would be initiated in the fall of 2004 at the earliest and continue annually as burning conditions dictate until project implementation is completed.
- Temporary road construction would be initiated in 2004 at the earliest and continue unit by unit until completion of the majority of treatments in 2012. Temporary roads would be closed and rehabilitated immediately upon completion of treatments in that unit.

Mechanical methods

Under Alternative 2, thinning and tree removal would be accomplished by using mechanized equipment first, followed by prescribed burning in designated areas. Under this alternative, forested land would be treated to reduce fuels using mechanical methods.

The focus for fuel reduction is on developed areas (lodges, summer homes, campgrounds, trailheads, etc) in the project area, where units would be treated to reduce fuels using mechanical methods. This treatment would occur on slopes of less than 40% within ¼ to ½ mile of developments. Hazard tree removal on about 209 acres would occur along the power line corridor.

Cut trees would be whole tree yarded with limbing and bucking to occur at the landing where by-products would be piled, burned, chipped or utilized for personal use fuelwood collection. Slash treatments would include hand piling and burning, and chipping and scattering to meet fuel objectives.

The principal tool for removal of sawtimber-sized trees to reduce fuels would be commercial timber sales. Timber sale contracts requiring use of ground-based systems would be used to achieve management goals for fuels reduction on approximately 1,353 acres. An estimated volume yield of 10 mmbf would be removed for fuel reduction purposes. An estimated range of volume is used because of the uncertainty of how much material would be merchantable.

Trees that would not make merchantable products would be piled through a service contract and either sold as public fuelwood or burned. An emphasis would be on making it accessible and available as firewood. Limbs and other debris that does not get yarded to a landing would be piled and burned.

Mechanical methods would include ground-based logging equipment such as tracked vehicles, skidders, and feller/bunchers; hand tools such as chainsaws, and axes; and equipment required for removal and transport of materials such as loaders and trucks. Work would be preformed by a combination of Forest personnel and contractors including timber sale purchasers to meet the project purpose and need.

Defensible space around cabins. The Forest Service would work with cabin owners and lodge owners to create defensible space in the immediate vicinity of each structure to include mechanical treatment of vegetation within 100-150 feet of structures (dependent on slope) and consist of the following:

- Thin trees to a spacing (minimum of 30 feet) that minimizes crown fires potential
- Remove small trees and/or lower limbs of trees up to a distance of 15 feet in height, which act as ladder fuels to enable a ground fire to reach tree canopies
- Remove tree limbs within 10 feet of chimneys and dead branches that overlap roofs
- Remove standing dead trees and dead and down ground fuels

Fuels reduction within ¼ - ½ mile of developments. Mechanical treatment to reduce fuels would occur outside the 100-150 feet defensible space safety zone around structures within the wildland-urban interface (WUI) to a distance of ¼ to ½ mile dependent on terrain and fuels map. Within this area, fuels reduction would entail removing the current dead and dying trees, thinning the overstory trees to break crown continuity, removal of trees that could act as ladder fuels and removal of dead and down fuels.

Major fire behavior breaks. Outside of ¼ to ½ mile zone around developments, mechanical treatment would reduce the amount and continuity of fuels at strategic locations, to allow the use of prescribed fire to link these mechanically treated areas with natural fuel breaks to create fire behavior breaks[8] along the North Fork. Mechanical treatment of hazardous fuels in and near developments would be completed before utilizing prescribed fire to assist in creating fire behavior breaks. The fire behavior breaks would extend from the corridor bottom in a north-south orientation onto the upper slopes of the corridor and would enhance current existing natural fuels breaks of rock or meadows. The intent of these fire behavior breaks would be to decrease the spread and intensity of wildfires burning down the side drainages and/or down the corridor to enhance protection of developments.

Hazard tree removal along power line corridors. Large numbers of insect-killed trees are present in the utility line corridors. All large trees within falling distance of lines, and having the potential to take the lines down, would be removed by mechanical methods as a means of reducing fire ignition potential.

Prescribed Burning

Under the proposed action, 13,484 acres in 49 units total would receive treatment. Fuel reduction would include 8,586 acres in 38 units and wildlife habitat enhancement would include 4,865 acres in 11 units.

Prescribed burns associated with this action would occur in designated Wilderness and portions of Roadless Area Review and Evaluation (RARE II) areas Wapiti Valley East, North and South, Trout Creek, Sleeping Giant and Sunlight Headwaters. The majority of the acres for prescribed burning occur in these RARE II areas. No direct mechanical treatment of vegetation would occur in Wilderness; however, helicopter support for ignition and holding of prescribed fire on about 1,290 acres would occur inside Wilderness areas pending approval of a minimum tool analysis.

2.2.3 Alternative 3

Alternative 3 was developed in response to the issue/controversy surrounding RARE II areas. Project activities associated with Alternative 3 include: The project acres would be treated the same as Alternative 2, excluding mechanical treatments and/or temporary road construction in the RARE II areas. The one exception is unit M7, which would be treated in both Alternative 2 and 3.

Another small difference is that unit M15 in the Sheep Mesa Potential Research Natural Area, was modified so that the eastern end of the unit would not have any mechanical treatment or temporary road activity under alternative 3. Actions would be concentrated on the west end of the unit, which has existing developments that include the powerline, telephone line and firewood removal. Differences between Alternative 2 and 3 relative to unit M15 are that temporary roads would be reduced from about .75 to .3 miles and acres mechanically treated reduced from approximately 61 acres to 30 acres.

Timeframes for actions for Alternative 3 are similar to Alternative 2. Alternative 3 differs from the proposed action since fewer units and less acreage are mechanically treated. In Alternative 3, approximately 2.7 miles of user created routes and future user created, non-system roads (such as result from firewood cutting) would be obliterated as funding becomes available, which is the same as Alternative 2. Prescribed burning would occur in RARE II areas. Timeframes for actions for Alternative 3 are similar to Alternative 2. An estimated volume yield of seven mmbf would be removed for fuel reduction purposes, as opposed to 10 mmbf on Alternative 2. An estimated range of volume is used because of the uncertainty of how much material would be merchantable. Purpose/actions and acres for Alternative 3 are summarized below, (*see* Figure 5).

[8] Fire Behavior Break-A natural or human-made change in vegetation (fuels) that alters fire behavior by decreasing the rate of spread and fire intensity, allowing suppression and containment opportunities. For maximum effectiveness, fire behavior breaks are in place prior to a wildfire event threatening life and property.

Figure 5. Approximate total acres of treatments for Alternative 3.

Purpose	Mechanical (Approx. Acres)	Mechanical/Prescribed Burning (Approx. Acres)	Prescribed Burning (Approx. Acres)	Total Acres (Approximate)
Fuels Reduction	924	127	8586	9637
Wildlife	0	270	4898	5168
Forest Health	113	0	0	113
Hazard Tree Removal-Power Line	209	0	0	209
Total	1246	397	13484	15014

Treatment Units. In Figure 6 are descriptions of the treatment units and the planned treatments to be implemented within each unit, including, by alternative, the: acreage, treatment, purpose, location, RARE II and non-RARE II acres, and Wilderness acres.

Figure 6. Summary and Description of unit treatments for the two action alternatives.

Treatment Unit	Treatment	Primary Purpose	Location	RARE II Acres	Non-RARE II Acres	Wilderness Acres	Total Acres	Alt. 1	Alt. 2	Alt. 3
M1	Mechanical	Fuels Reduction	Kitty Creek	0	40	0	40	0	40	40
M2	Mechanical	Fuels Reduction	Libby Creek	10	16	0	26	0	26	16
M3	Mechanical	Fuels Reduction	Moss Creek	0	30	0	30	0	30	30
M4	Mechanical	Fuels Reduction	June Creek	19	87	0	106	0	106	87
M5	Mechanical	Fuels Reduction	Moss/Aspen	0	8	0	8	0	8	0
M6	Mechanical	Fuels Reduction	Green Cr	0	162	0	162	0	162	162
M7	Mechanical	Fuels Reduction	Pagoda Cr	9	12	0	21	0	21	21**
M8	Mechanical	Fuels Reduction	Blackwater	0	80	0	80	0	80	80
M9	Mechanical	Fuels Reduction	Crow Cr	0	54	0	54	0	54	54
M10	Mechanical	Fuels Reduction	Sleeping Giant	45	28	0	73	0	73	28
M11	Mechanical	Fuels Reduction	Sleeping Giant	159	12	0	171	0	171	0
M12	Mechanical	Fuels Reduction	Absaroka Lodge	20	19	0	39	0	39	19
M13	Mechanical	Fuels Reduction	Elephant Head	1	29	0	30	0	30	29
M14	Mechanical	Fuels Reduction	Shoshone Lodge	0	30	0	30	0	30	30
M15	Mechanical	Fuels Reduction	Henry Ford	0	61	0	61	0	61	31
M16	Mechanical	Fuels Reduction	Pahaska Cabins	0	34	0	34	0	34	34
M17	Mechanical	Fuels Reduction	Sleeping Giant	15	0	0	15	0	15	0
M18	Mechanical	Fuels Reduction	Sleeping Giant	17	0	0	17	0	17	0
M19	Mechanical	Fuels Reduction	Sleeping Giant	0	3	0	3	0	3	3
M20	Mechanical	Fuels Reduction	Sleeping Giant	0	35	0	35	0	35	35
M21	Mechanical	Fuels Reduction	Newton Cr	0	9	0	9	0	9	9
M22	Mechanical	Fuels Reduction	Grinnell Cabins	0	33	0	33	0	33	33
M23	Mechanical	Fuels Reduction	Eagle Cr	3	15	0	18	0	18	15
M24	Mechanical	Fuels Reduction	Aspen Cr	0	13	0	13	0	13	13
M25	Mechanical	Fuels Reduction	Goff Cr	0	12	0	12	0	12	12
M26	Mechanical	Fuels Reduction	Mesa Cr	5	24	0	29	0	29	24
M27	Mechanical	Fuels Reduction	Mesa Cr/Fishhawk	3	28	0	31	0	31	28
M28	Mechanical	Fuels Reduction	Goff/Gunbarrel	2	49	0	51	0	51	49
M29	Mechanical	Forest Health	Fishhawk	10	43	0	53	0	53	43
M30	Mechanical	Fuels Reduction	Middle Fork	82	0	0	82	0	82	0
M31	Mechanical	Fuels Reduction	Whit Creek	28	0	0	28	0	28	0
M32	Mechanical	Fuels Reduction	Blackwater	0	12	0	12	0	12	12
M33	Mechanical	Forest Health/	50-mile	0	70	0	70	0	70	70
M34	Mechanical	Riparian/Wildlife	Middle Fork/Northfork	0	5	0	5	0	5	5
M35	Mechanical	Riparian/Wildlife	Aspen Creek	0	23	0	23	0	23	23
M36	Mechanical	Riparian/Wildlife	Mummy Cave	0	9	0	9	0	9	9
M37	Mechanical	Riparian/Wildlife	West Newton Creek	0	10	0	10	0	10	10

Treatment Unit	Treatment	Primary Purpose	Location	RARE II Acres	Non-RARE II Acres	Wilderness Acres	Total Acres	Alt. 1	Alt. 2	Alt. 3
M38	Mechanical	Riparian/Wildlife	East Clearwater	0	43	0	43	0	43	43
M39	Mechanical	Riparian/Wildlife	West Clearwater	0	9	0	9	0	9	9
M40	Mechanical	Riparian/Wildlife	Wapiti	0	2	0	2	0	2	2
M41	Mechanical	Riparian/Wildlife	Wapiti	0	6	0	6	0	6	6
M42	Mechanical	Riparian/Wildlife	Aspen Creek	0	7	0	7	0	7	7
M43	Mechanical	Riparian/Wildlife	West Goff Creek	0	16	0	16	0	16	16
M44	Mechanical	Riparian/Wildlife	South Libby Creek	0	41	0	41	0	41	41
MR1	Mechanical/RX	Fuels Reduction	Aspen Cr	0	28	0	28	0	28	28
MR2	Mechanical/RX	Fuels Reduction	Aspen Cr	5	21	0	26	0	26	21
MR3	Mechanical/RX	Fuels Reduction	Elk Fork	0	39	0	39	0	39	39
MR4	Mechanical/RX	Wildlife	Newton Cr	0	45	0	45	0	45	45
MR5	Mechanical/RX	Wildlife	Gunbarrel Cr	0	59	0	59	0	59	59
MR6	Mechanical/RX	Wildlife	Libby Creek	0	4	0	4	0	4	4
MR7	Mechanical/RX	Fuels Reduction	Goff Cr	0	17	0	17	0	17	17
MR8	Mechanical/RX	Wildlife	Elk Fork	0	2	0	2	0	4	4
MR9	Mechanical/RX	Fuels Reduction	Blackwater	68	22	0	90	0	90	22
MR10	Mechanical/RX	Wildlife	Pahaska	0	5	0	5	0	5	5
MR11	Mechanical/RX	Wildlife	Eagle Cr TH	0	7	0	7	0	7	7
MR12	Mechanical/RX	Wildlife	Libby/Goff	0	16	0	16	0	16	16
MR13	Mechanical/RX	Wildlife	Boy Scout Camp	0	11	0	11	0	11	11
MR14	Mechanical/RX	Wildlife	Libby Creek	0	9	0	9	0	9	9
MR15	Mechanical/RX	Wildlife	Boy Scout Camp	0	7	0	7	0	7	7
MR16	Mechanical/RX	Wildlife	Gunbarrel Cr	0	4	0	4	0	4	4
MR17	Mechanical/RX	Wildlife	Newton Cr	0	10	0	10	0	10	10
MR18	Mechanical/RX	Wildlife	Rex Hale CG	0	9	0	9	0	9	9
MR19	Mechanical/RX	Wildlife	Aspen Cr	0	23	0	23	0	23	23
MR20	Mechanical/RX	Wildlife	Aspen Cr	0	7	0	7	0	7	7
MR21	Mechanical/RX	Wildlife	Elk Fork	0	6	0	6	0	6	6
MR22	Mechanical/RX	Wildlife	Elk Fork	0	7	0	7	0	7	7
MR23	Mechanical/RX	Wildlife	Big Game CG	0	33	0	33	0	33	33
MR24	Mechanical/RX	Wildlife	Holy City	0	4	0	4	0	4	4
R1	RX	Fuels Reduction	Kitty Creek	46	119	0	165	0	165	165
R2	RX	Fuels Reduction	Fishhawk	67	0	0	67	0	67	67
R3	RX	Fuels Reduction	Libby/Goff	284	71	0	355	0	355	355
R4	RX	Fuels Reduction	Libbey	131	0	0	131	0	131	131
R5	RX	Fuels Reduction	Moss	81	0	0	81	0	81	81
R6	RX	Fuels Reduction	Aspen	181	0	162	343	0	343	343
R7	RX	Fuels Reduction	Green Cr	0	40	0	40	0	40	40
R8	RX	Fuels Reduction	Green Cr	18	69	0	87	0	87	87

Treatment Unit	Treatment	Primary Purpose	Location	RARE II Acres	Non-RARE II Acres	Wilderness Acres	Total Acres	Alt. 1	Alt. 2	Alt. 3
R9	RX	Fuels Reduction	Elk Fork	403	35	0	438	0	438	438
R10	RX	Fuels Reduction	Elk Fork	218	22	0	240	0	240	240
R11	RX	Fuels Reduction	Elk Fork	358	7	0	365	0	365	365
R12	RX	Fuels Reduction	Pagoda Cr	0	79	0	79	0	79	79
R13	RX	Fuels Reduction	Blackwater	73	28	0	101	0	101	101
R14	RX	Fuels Reduction	Clocktower Cr	32	56	0	88	0	88	88
R15	RX	Fuels Reduction	Clearwater	209	0	81	290	0	290	290
R16	RX	Fuels Reduction	Middle Fork	109	82	0	191	0	191	191
R17	RX	Fuels Reduction	Middle Fork	51	0	0	51	0	51	51
R18	RX	Fuels Reduction	Grinnell/50 Mile	180	46	0	226	0	226	226
R19	RX	Fuels Reduction	Grinnell Cr	15	68	0	83	0	83	83
R20	RX	Fuels Reduction	Gunbarrel Cr	0	0	384	384	0	384	384
R21	RX	Fuels Reduction	Sheep Cr	121	3	0	124	0	124	124
R22	RX	Fuels Reduction	Mesa Cr	38	3	0	41	0	41	41
R23	RX	Fuels Reduction	Fishhawk	106	0	5	111	0	111	111
R24	RX	Fuels Reduction	Eagle Cr	118	8	0	126	0	126	126
R25	RX	Fuels Reduction	Rand Cr	52	0	0	52	0	52	52
R26	RX	Fuels Reduction	Rand Cr	55	0	0	55	0	55	55
R27	RX	Fuels Reduction	Rand Cr	118	0	0	118	0	118	118
R28	RX	Fuels Reduction	Whit Creek	40	0	0	40	0	40	40
R29	RX	Fuels Reduction	Whit Creek	84	0	0	84	0	84	84
R30	RX	Fuels Reduction	Eagle Cr	82	6	0	88	0	88	88
R31	RX	Wildlife	Signal Peak	371	0	0	371	0	371	371
R32	RX	Wildlife	Nameit Cr	521	74	0	595	0	595	595
R33	RX	Wildlife	Clocktower Cr	653	132	0	785	0	785	785
R34	RX	Wildlife	Pagoda/Elk Fork	291	54	0	345	0	345	345
R35	RX	Wildlife	Horse Cr	241	0	0	241	0	241	241
R36	RX	Fuels Reduction	Elk Fork	737	0	0	737	0	737	737
R37	RX	Fuels Reduction	Elk Fork	1141	0	0	1141	0	1141	1141
R38	RX	Wildlife	Sweetwater/Clearwater	182	81	0	263	0	263	263
R39	RX	Wildlife	Clearwater/Aspen	58	25	0	83	0	83	83
R40	RX	Wildlife	Aspen/Moss	188	17	0	205	0	205	205
R41	RX	Wildlife	Moss/Newton	562	241	0	803	0	803	803
R42	RX	Wildlife	Big Cr	1174	0	0	1174	0	1174	1174
R43	RX	Fuels Reduction	Cougar Cr	0	0	553	553	0	553	553
R44	RX	Fuels Reduction	Table Mtn	38	0	129	167	0	167	167
R45	RX	Fuels Reduction	Gunbarrel/Goff	175	56	0	231	0	231	231
R46	RX	Fuels Reduction	Table Mtn	341	302	235	878	0	878	878
R47	RX	Fuels Reduction	Blackwater	129	0	0	129	0	129	129

Treatment Unit	Treatment	Primary Purpose	Location	RARE II Acres	Non-RARE II Acres	Wilderness Acres	Total Acres	Alt. 1	Alt. 2	Alt. 3
R48	RX	Fuels Reduction	Moss/Newton	0	0	106	106	0	106	106
R49	RX	Wildlife	Big Game		33				33	33
			Total =	10573	3373	1655	15601	0	15601	14818

***** - current road and cabin group within RARE II, needs WUI treatment***

2.2.4 Project Design Features Common to the Action Alternatives

Project design features (PDFs) and mitigation measures are used interchangeably in this document.

In response to public comments on the proposal, mitigation measures were developed to ease some of the potential impacts the various alternatives may cause. Unless otherwise specified, mitigation measures would be applied to any of the action alternatives.

Mitigation measures were developed to reduce some of the potential environmental impacts that may result from implementation of the action alternatives. Unless otherwise specified, mitigation measures would be applied to any of the action alternatives. The analysis documented in this EA discloses the possible beneficial or adverse effects that may occur from implementing the actions proposed under each alternative. Features to reduce potential adverse impacts were identified during project planning. Project design features and mitigation measures are guided by Forest Plan direction, research and monitoring studies, and state and federal laws and regulations (including those previously described in Chapter 1).

The ID Team examined potential effects of the proposed action and alternatives and developed recommendations for resource protection that became project design features. Members of the ID Team made a field reconnaissance of the project area in October 17, 2002 and November 14, 2003 (Eagle Creek). Subsequent visits to the site were made by specialists to gather needed information.

Project Design Common to All Action Alternatives

Project design features (PDFs), Best Management Practices (BMPs), and conservation measures were developed and integrated into the proposed action to prevent, minimize, or offset potential adverse effects associated with the fuel reduction treatments, fire management activities and habitat improvements. These practices and measures are incorporated into the project design to ensure that major adverse effects would not occur and to protect soil, water, visual, cultural and fisheries/wildlife resources. These project design features are fully described for the proposed action and all action alternatives in the following sections.

The alternative descriptions include descriptions of the differing actions to occur, the locations of the actions, the outputs or acres affected, the methods and treatments associated with the actions, the rationale for the action, practices as well as procedural and operational requirements to be adhered to, and planned treatment schedules. All mitigation measures, conservation measures, and best management practices are included as a part of these descriptions, and therefore will not be listed or described in a separate section.

To ensure adherence with the requirements for resource protection shown in the alternatives, the appropriate USDA Forest Service Timber Sale Contract Division B Standard Provisions and Division C and CT Supplemental Provisions to be included in the contract are referenced when appropriate.

Interdisciplinary input and participation into the prescription development is important for project implementation. As needed, an interdisciplinary team of an engineer, aquatic biologist, hydrologist, soil scientist/botanist, landscape architect, silviculturist, wildlife biologist, and fire/fuels specialist would provide input into the prescriptions for the on-the-ground implementation to ensure that project design features are integrated into what happens on the ground.

Prescriptions and marking guidelines are the means to link Best Management Practices, unit layout, stream crossing and temporary road and skid trail locations, rehabilitation in and adjacent to riparian/aspen areas or sensitive areas such as wetlands, the viewshed foreground, tree planting, sensitive plant species, geologic hazards or invasive species infestations to actual implementation on the ground. The development of prescriptions by the team would provide input for unit design, tree marking and specific burn sites in and around riparian and wetland areas or stream crossings. Follow-up monitoring would be conducted to determine the effectiveness of the actions and implemented project design features or to identify any rehabilitation measures.

Normal operating season for mechanical treatment. The normal operating season with ground-based equipment on all harvest areas would be from July 1 to March 31 annually. No harvest activity would be allowed during the spring period April 1 to June 30, unless extenuating circumstances exist and actions are coordinated back through the respective resource specialist(s) and the District Ranger.

Normal burning season for prescribed burn treatments. Burning would occur from March 1 through mid-May or from October through December depending on burning conditions. Prescribed burning during the spring period would be completed by mid-May.

Operating in riparian/wetland areas. Harvesting and skidding of trees in hydric stream bottoms, wet meadows, marshes, and bogs would be allowed only during the normal operating season when the ground is totally dry, frozen to a sufficient depth to adequately support logging equipment, or has a minimum of 12 inches of packed snow on the site. Endlining or single end log suspension would be required.

Operating around lodges and cabins. Harvesting and logging traffic around lodges and cabins would have restricted seasons and times to lessen impacts to businesses and lodges during high use seasons. Harvest activities during the high use season such as July and August would not be allowed in close proximity to lodges. Other measures are: 1) no early morning activities; 2) stipulate that Forest Service system trails, road or culvert damage caused by the timber operator be repaired by timber contractors; 3) stipulate speed limits for logging traffic around lodges and cabins; 4) use caution in burning on steep slopes, especially in vicinity of cabins, lodges and spring sources used for drinking water; and 5) do not leave temporary roads used for mechanical treatments open for the public to drive, close and rehabilitate the roads these routes.

Fire and Fuels (Fuels Reduction)-- Project Design for All Action Alternatives

Project Design Features (PDFs) for hazardous fuel treatments to reduce the fuel loading brought on by insect activity and high tree mortality, hazardous fuels treatments would include thinning of large overstory trees having a dense canopy closure to provide a break in the canopy continuity to reduce crown fire potential; thinning and/or removal of smaller understory trees as a means of reducing ladder fuels that aid in moving fire from the surface into the tree crowns; and removing standing dead trees and dead and down ground fuels to reduce fuel loading and continuity, thus reducing fire intensity and spread rate.

PDFs common to the proposed action and the action alternative(s) are described below. Their purpose is to reduce potential impacts and ensure that the proposed vegetation and fuel reduction treatments are consistent with the management objectives for Forest Plan direction and the management objectives for a variety of resources (e.g., watershed, fisheries, wildlife, and botanical). Their basis includes the management direction, standards, and guidelines from the Forest Plan, pertinent best management practices, and the professional expertise of the IDT.

Treatments for fuel reduction would include cutting and/or removing all dead fuels greater than seven inches in diameter. Trees that would not make merchantable products would be piled and burned. Cut trees would be whole tree yarded with limbing and bucking to occur at the landing where by-products would also be piled and burned or utilized for personal use fuelwood collection. Slash less than seven inches in diameter would be bucked to lie close to the ground to encourage decomposition.

Vegetation—Project Design for All Action Alternatives

Vegetative Diversity

Structural diversity on a landscape scale would be provided by maintaining a minimum of 20% of the forested area in vertical diversity, 30% in horizontal diversity, 5% in grass/forb stage, and at least 10% in old growth.

Snags would be maintained by retaining six to 10 snags per 10 acres, well distributed throughout the area. Recent data (Saab and Dudley 1998) indicate retention of clumps of snags rather than uniformly distributed snags would most benefit the entire cavity-nesting bird community.

Dead and down logs would be retained where biologically feasible using a standard of 10 inches in diameter and 50 linear feet/acre.

Aspen would be retained wherever it presently occurs by reducing conifer encroachment where necessary, and regenerating by burning or clearcutting aspen clones that are in extremely decadent condition as evidenced by few mature stems, a high degree of mortality of mature stems, and little sprouting.

Range

Allotment permittees would be notified of upcoming mechanical and prescribed burning treatments.

Range improvements and allotment management. Range improvements such as fences and water developments would be protected from treatment activities. The integrity of existing fences, gates, and water developments would be maintained during harvest/burning activities; any fence, water development damaged by activities would be repaired or reconstructed in a timely matter. Placement of salt blocks for livestock would occur at least ¼ mile away from harvest and burn areas following the treatments.

Manage livestock post-treatment so that desirable native plants are able to regenerate and reproduce to ensure rapid revegetation and promotion of desirable native plant species. Management of livestock grazing to ensure adequate regeneration and retention would be coordinated with permittees via annual operating instructions. Schedule all burning in a given allotment to occur simultaneously, if feasible, to reduce the number of years the livestock permitte(s) might be impacted.

In summary, rangeland and allotment management post-treatment (to include the use of roads/trails, placement of salt, and access to water sources, riparian zones and grazing areas) would be coordinated between the permittee and the District range staff and addressed in the annual operating instructions, to include factors such as intensity, size of burns, precipitation and other variables.

Sensitive Plants and Invasive Weeds

Sensitive plants. Before project implementation, the Forest would review areas for sensitive plants and the Forest would identify mitigation measures as necessary to avoid or minimize impacts to those resources.

- If any threatened, endangered, sensitive, or rare plants are discovered during project layout or implementation, the appropriate specialist(s) would examine the area and the necessary mitigation action would be taken.

Invasive weeds. Invasive weed control as outlined in the Shoshone National Forest Noxious and Invasive Weed Control EA and Decision Notice would take place as needed in the analysis area. Mitigation measures and contract provisions would be included with each action alternative to minimize the spread of existing weeds and the introduction of new ones. The area received a "moderate" risk rating for weeds with this recommendation: Develop preventative management measures for the proposed project to reduce the risk of introduction or spread of undesirable plants into the area. Monitor the area for two or three consecutive years and provide for control of new infestations as funding allows.

- To minimize soil disturbance and integrate weed prevention and management, an invasive weed evaluation was conducted on the project area before implementation. Areas with current noxious weeds would be pre-treated (done in 2003 in some areas such as the Eagle Creek area), or evaluated and treated after project implementation for three years as described above.

Applicable Best Management Practices (FSM 2000 Zero Code 2080) for invasive/noxious weed management concerning roads, timber, fuel reductions and prescribed burning are summarized:

- Incorporate weed prevention into timber harvest, fuel reduction and prescribed burning projects; including road layout, design, and alternative evaluation. Include weed risk assessment in the environmental analysis- weed infestations would be inventoried and scheduled for treatment.
    - Inspect burn units for cheatgrass, avoid burning within 1/8 mile of known cheatgrass infestations, and avoid travel through infested areas with vehicles.
- Minimize sources of weed seed in areas not yet revegetated-Remove the seed source that could be picked up by passing vehicles and limit seed transport in new and reconstruction areas.

- Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. This does not apply to service vehicles that would stay on the roadway, traveling frequently in and out of the project area. Reference Contract Provision C/CT 6.626 and C/CT 6.261.
- Minimize soil disturbance and roadside sources of weed seed that could be transported to other areas to limit the creation of sites suitable for weed establishment and revegetate bare soil as needed.
- Evaluate/prioritize noxious weeds along existing Forest Service access roads leading to project area and treat as indicated by local analysis and prescriptions, before equipment moves into project area.
- Treat weeds on staging areas, roads, landings, and skid trails that are weed infested before logging activities, where practical. Monitor and treat weed infestations at landings and on skid trails after harvest; including after sale activity and treat weeds as indicated by local prescriptions.
- Require treating high-risk areas (as defined in Regional Risk Assessment Factors and Rating protocol) with weed infestations (such as roads, disturbed ground) before burning and check and retreat after burning if necessary.
- Avoid ignition and burning in high-risk areas (as defined in Regional Risk Assessment Factors and Rating protocol) that cannot be treated before or after prescribed fire.

Wildlife Protection--Project Design for All Action Alternatives

Project Design Features (PDFs) included requirements that are non-discretionary standards and mitigation/conservation measures that will be implemented as an essential part of any management action in this area. These non-discretionary measures, standards, BMPs, etc. are required by law, regulation, Forest Plan, and other mandated direction and will be implemented if an action alternative is selected.

Contractor cooperation. Contractors' full cooperation meeting grizzly management goals and objectives would be a condition of receiving and holding contracts.

Acknowledgement of risk and training. For human safety purposes, contractors and their employees would be informed of possible risks any time they are working in grizzly country. All crews would be trained in measures to minimize bear/human conflicts, proper attractant storage, bear behavior, recommended human behavior in conflict situations, and the use of bear spray.

Attractant storage and maintaining a safe distance. The grizzly bear special order (Authority 36 CFR 261.50(a & b)) relating to handling and storage of food and other attractants would apply to all timber sale contracts and persons acting on their behalf to minimize the potential for human/bear conflicts. The grizzly bear special order (Authority 36 CFR 261.53 (a & e)) prohibiting any person intentionally approaching closer than 100 yards to any bear would apply to all timber sale contracts to minimize the potential for human/bear conflicts. Compliance monitoring and enforcement of the attractant storage order by a forest officer/sale administrator would occur on a regularly scheduled basis.

Cessation of activities. Contracts would include a clause providing cancellation or temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation.

Contract period. The contract period relating to contracts for the mechanical treatment part of this action would be three years, with the initial contract(s) having a starting target date of fall 2004 at the earliest. Multiple contracts over the course of the next five to ten years are a part of the proposed action.

Operating season in proximity of bear den sites. Where grizzly den sites are known, harvest activities would not be allowed within 1 km (5/8 mi or 1100 yards) of den sites from 11/1 to 7/1 to minimize the potential for disturbance and possible den abandonment. No den sites are known within the project area at this time.

Harvest scheduling within a project area. Harvesting of treatment units would be scheduled to concentrate use by time and space to minimize disruptions of normal or expected wildlife activity. Treatment activity would comply with the secure habitat standard and be limited to one treatment unit (or several units) at a time, in lieu of allowing activities simultaneously over numerous units.

Slash pile burning or chipping. Burning of slash piles would occur during the months of October thru March in order to minimize disturbance to grizzly and natal denning lynx. Burning would generally occur one year after treatment is completed unless firewood gathering is allowed, in which case burning would occur the second year after treatment. Chipping or burning of slash piles would be allowed between July 1 and May 15, with most work being completed by March 31 depending on the weather and could occur at any allowable time between treatment and one year after treatment.

Yum (yarding of unmerchantable materials) yarding, jackpot burning, broadcast burning, or a combination of these practices may be employed to address slash.

Logging camps. Temporary living facilities for timber sale operations would be closely regulated. Edibles and/or garbage would not be allowed to accumulate or be available for grizzlies. Bear proof refuse containers and refuse collection to prevent overflow would be required. No camps for timber sale operations would be permitted in the sale area if deemed necessary in order to minimize disruptions of normal or expected grizzly activity.

Planting/seeding. Planting or seeding near roads or facilities used by humans would not include highly palatable forage species preferred by grizzly bears or big game.

Nest trees. Protect nesting raptors by disallowing management activities within 300 feet of a nest tree during the period May 1 through July 31. If any eagle nest sites or specific perch/roost sites are discovered within the project area in the future, a disturbance-free buffer zone of 1-mile would be maintained around eagle nests February 15 through August 15, and around winter roost sites November 1 through April 15.

Helicopter disturbance. Disturbance stressors that initiate startling responses from wildlife would be avoided. During the spring burning window, the burn area would be accessed each day with ground vehicles, horseback, or on foot prior to arrival of helicopters; or if by helicopter, the approach would be from high altitude and gradual in order to move wildlife out of the burn area. This is necessary in order to move all bears and other large prey species out of the burn area before low altitude helicopter use is initiated, as sudden low-altitude approaches by helicopters can initiate very stressful reactions (panic runs) from individual animals.

Burn scheduling. Burning activities would occur at a time or season when the area is of little or no biological importance to wildlife species of concern. Operations would be restricted in time and space to prevent significant disruptions of normal or expected wildlife activities.

Concentration of burning activities. Burning activities would be concentrated in both time and space to the degree possible to minimize disturbance to wildlife. Burning activity would be limited to one treatment unit, or one group of adjacent treatment units at a time.

Highway crossings. Sufficient roadside vegetation would be maintained to facilitate bear, big game, and other wildlife movement across the highway. Vegetative habitat opportunities would be provided to accommodate movement across the highway every one-half mile, and not farther than 1 mile apart, depending on topographic and vegetative features.

Security. Security areas for this action would be provided in the Washakie Wilderness and North Absaroka Wilderness areas immediately adjacent to the project influence zone and in close proximity to the project area in order to provide an area of suitable habitat where disturbance type management activities are not occurring simultaneously with the planned action. Security areas are defined as those areas immediately adjacent to the project influence zone and in close proximity to the project area, in excess of 5,000 acres, and having open road density less than or equal to one mile per square mile. (Forest Plan definition and direction III-65 f.).

Habitat effectiveness. Forest Plan direction, standards and guidelines includes these values for habitat effectiveness:

- Habitat for each species would be maintained to at least 40% of potential (III-49) (It is assumed that this relates to both habitat value and habitat effectiveness).

- Hiding cover would be maintained on at least 60% of the perimeter of natural and created openings, along at least 75% of the edge of roads, along at least 60% of streams and rivers, and on at least 40% of the forested type within a diversity unit (well distributed throughout the unit)
- Thermal cover would be maintained on at least 20% of the forested type within a diversity unit (III-51)
- On big-game winter ranges, habitat capability would be maintain to at least 80% of potential capability (III-167), and habitat effectiveness would be maintained to at least 90% during the winter period (III-167)
- Within Lynx LAUs, 70% would be maintained in suitable condition and 10% maintained as denning habitat, no more than 15% would be converted to unsuitable condition per decade, salvage harvest would be limited to areas of more than 5 acres, regeneration of aspen would be favored, habitat connectivity across the landscape would be maintained, and a high density of conifers, hardwoods, and shrubs would be recruited.

Watershed Protection (Soil, Water and Aquatic Resources)-- Project Design for All Action Alternatives

The Best Management Practices (BMPs) that would be implemented as part of any action alternative includes the following:

- Project specific BMPs
- Fifteen mandatory BMPs for silviculture roads for compliance with 404 permit exemption (33 CFR 323.4[9])
- Applicable State of Wyoming BMPs for Silviculture[10]

Appendix D provides a detailed description of the Best Management Practices (BMPS) and the following text provides a summary of the BMPs from the appendix.

Water Influence Zone. The water influence zone (WIZ) next to all perennial and intermittent streams, lakes, and wetlands would be maintained or enhanced. The WIZ includes the geomorphic floodplain and the riparian ecosystem and the inner gorge at times. Its minimum horizontal width from the top of each bank is 100 feet. However, the WIZ is enlarged in areas to include the entire riparian area. Activities are not excluded within the WIZ, however measures are followed to protect riparian and aquatic values.

- Keep heavy equipment out of streams, swales, lakes, wetlands, except to cross at designated points, build crossings, or do restoration work; or if protected by at least one (1) foot of packed snow or two (2) inches of frozen soil.
- Restrict heavy equipment use within other areas of the WIZ to designated crossings or during periods when the ground conditions are dry or are protected by one (1) foot of packed snow or two (2) inches of frozen soil.
- Ensure at least one-end suspension of logs or require end-lining within the WIZ.
- Protect stream channels by felling timber to the lead, cabling timber out rather than skidding near stream channels, and designating leave trees for woody debris recruitments along stream channels.
- Do not locate landings, skid trails (except to cross at designated locations), or other concentrated use sites within the WIZ.
- Designate equipment servicing and refueling areas. Do not locate these areas within 150 feet of a WIZ to prevent contamination of waters from accidental spills.
- Do not allow slash generated from harvest or road activities to accumulate in stream channels or within the WIZ.

Temporary Roads, Skid Trails and Stream Crossings

River crossings. A temporary bridge at six or seven different river crossings (winter) and/or low water crossings for late summer/fall would be utilized on the main stem North Fork Shoshone River. An additional 12 to 13 crossings of side streams would be needed. In the Forest Plan, page III-221, Transportation System Management, 1 c, the Standard and Guideline for road and trail locations states: *Construct and/or maintain facilities in riparian areas when soils are dry or frozen and when stream flows*

[9] 33 CFR 323.4 may be viewed at http://www.nwo.usace.army.mil/html/od-rwy/33CFR323.htm#323.4

[10] Wyoming Silviculture BMPs may be viewed at http://deq.state.wy.us/wqd/watershed/Downloads/NPS%20Program/Silviculture%202004.pdf

are low. Dry or frozen conditions exist in December through March of most years; low flow conditions exist from August through May (Record of Decision, Cody to Yellowstone Highway U.S. 14/16/20, 1995). Not all crossings would be in use at once.

- Temporary roads and skid trails shall be held to the minimum needed. All temporary roads constructed for treatment activities would be decommissioned (obliterated, recontoured, and if necessary, seeded) immediately following treatment activities to minimize the amount and duration of open roads (ASQ ROD Appendix A, page 5 and Plan III-88)
- All temporary roads and river crossings used for timber sale purposes would be single purpose roads only, and would be closed to public use. Use of any temporary roads would be limited to the contractor and contract administrators only during harvest activities, and only during the period of operations. To ensure effective closures, gates and other structures would be installed to limit public access during sale activities. Existing gates would be repaired if needed, and would remain in place for continued seasonal or permanent closures as necessary.
- Only approved skid trails or temporary roads would be utilized during treatment. Previously used skid trails and temporary roads would be used where possible. Skid distances would be increased to the degree reasonable to limit the need to construct new temporary roads.
- Design and construct stream crossings to pass flow and sediment, withstand expected flows, and allow free movement of aquatic life.
- Heavy equipment would not be allowed in streams occupied by fish during spawning, incubation, and emergence periods (March 15-July 1).
- Stream crossing approaches would be hardened on temporary roads.
- Earth material would not be excavated or stored in any stream, swale, lake, wetland, or riparian area except to construct designated crossings. Do not introduce soil or fills into streams, swales, lakes, or wetlands.
- Do not significantly alter or relocate natural stream channels when constructing crossings. Do not disrupt water supplies or drainage patterns into wetlands.
- Temporary roads would be for silvicultural purposes only, would be closed to public use not associated those purposes; and would be decommissioned and obliterated immediately after treatment and prior to the next spring runoff.

Harvest System

- Tractor operations would not occur on slopes greater than 40%.

Compliance with Laws, Regulations and Policies

National Forest Management Act and The Forest Plan. Mechanical treatments and prescribed burning are consistent with the Forest Pan. The project is consistent with the Forest Plan as required by the National Forest Management Act. Forest Plan direction and standards and guidelines were used in the design of the project and incorporated into the project BMPs, which include:

- Water Resource Improvement and Maintenance
- Soil Resource Management (III-86 through 88)
- Management area direction for areas 2B, 3A, 5A, 7E, and 8C
- Management area direction for area 9A, Riparian Area Management (III-207 through 222).
- Plan Amendment No. 94-001 (road obliteration standards)

Compliance with National Direction. This project tiers to and is consistent with the National Fire Plan as it implements fuel reduction treatments. The project would reduce wildfire behavior that contributes to large, uncontrollable wildfires that could threaten resources, life and property.

Executive Orders 11988 – Floodplain Management and 11990 – Protection of Wetlands. Project activities would occur within floodplains and wetlands. The action alternatives, through BMPs, are designed to minimize the potential harm to or within floodplains and wetlands. A chief concern of this project relative to floodplains and wetlands is the construction of temporary roads and stream crossings. Given the

temporary nature of the roads/stream crossings and the rehabilitation that would occur, the natural and beneficial values of floodplains and wetlands would be preserved. Also, BMP implementation within the treatment units would also preserve floodplain and wetland values.

Executive Order 13112. Directs that federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.

Clean Air Act, as amended. The action alternatives would maintain air quality in the project area, surrounding airsheds, and local communities by following a Smoke Management Plan. Site-specific burn plans are required for all prescribed burns and include smoke management elements (FSM 5140). The plan would identify the appropriate weather conditions for conducting the prescribed fire in order to maintain air quality in the area.

Clean Water Act. Section 404, Discharges of Dredged or Fill Material – The action alternatives include treatments considered to be normal silviculture activities that meet the criteria for permit exemption. BMPs would be applied on the forest roads and temporary roads in order to meet the provisions required for exemption of silvicultural roads.

Endangered Species Act. Forest Service policy is to protect the habitat of federally listed, proposed, candidate, threatened or endangered species from adverse modification or destruction. Biological assessments shall be prepared to determine possible effects the proposed activity may have on threatened and endangered (T&E) species.

Biological Assessment. The Forest would consult with the U.S. Fish and Wildlife Service for this project and its effects on federally listed T&E species or their critical habitat. A Biological Assessment would be prepared to determine possible effects the proposed activity may have on T&E species.

Biological Evaluation. The Forest conducted a Biological Evaluation (BE) for the R2 Regional Forester's Sensitive Species List and the appropriate Forest Management Indicator Species.

Fire and Fuels--Project Design for All Action Alternatives

Prescribed fire

Forested lands and shrub/grassland would be burned to reduce fuel loading and fuel continuity to modify wildfire behavior. Burning would be performed by Forest personnel using hand and helicopter ignition methods, and holding methods would include use of hand lines, hand crews, engines, and helicopters.

Burn plan

All aspects of the prescribed burning would follow a prescribed fire burn plan. This plan is written specifically for the project and considers resource objectives, weather parameters, fuel moisture parameters, pre-burn control actions needed, ignition plan, holding plan, contingency plan, public notification plan, equipment and coordination needs, smoke management plan, safety, risk analysis, and costs and monitoring plan. Each would be analyzed to identify the optimum burn parameters that would accomplish the projects safely. Only qualified burn personnel and resources would be utilized.

Burn patterns

- The intent of the burn strategy would be to create a mosaic vegetative pattern with some areas burning hot and intense while other areas are untouched by fire, giving the appearance of a natural appearing landscape. In non-timbered areas, the intent is to remove any encroaching conifers and/or set back succession for wildlife habitat with prescribed fire.
- For protection of habitat and visual resources, controlling location, sequence, and timing of ignition points, as well as burn strip width, the shape, size, and location of all burns would approximate natural patterns in the characteristic landscape. A mosaic pattern composed of a variety of vegetative types and structures would be created.

Mechanical and Prescribed Fire Treatments

Coordination. Interested parties, such as range permittees, outfitters and permit holders, and landowners would be notified of upcoming mechanical fuel treatments/prescribed burning activities.

Infrastructure. Facilities, developments, power lines, water lines, roads, culverts, signs, and range improvements such as fences would be identified and protected from activities.

Colonized meadows. For maintenance or enhancement of meadows, sage/grass communities with conifer colonization would be treated by removing conifers and burning sagebrush to decrease fire intensity and increase defensible space and wildlife habitat.

Recreation-- Project Design for All Action Alternatives

Approval for prescribed fire ignition by helicopter use in designated Wilderness would be sought through a minimum tool analysis.

Safety and Transportation. Logging traffic/safety signing would be used as appropriate: Signs would be placed on access roads and/or the highway to alert the public of mechanical operations and heavy truck traffic. Truck traffic would adhere to bridge load limits. During ignition, recreation use of the burn area and vicinity area would be discouraged or closed for safety reasons. Impacts to recreation use would be minimized by notifying the public of the intended burn time through news releases and/or posted notices.

RARE II areas-- Project Design for All Action Alternatives

The following project design is included to ensure that the proposal would not substantially alter the undeveloped character of RARE II areas of 5,000 acres or more:

- The project design sideboard for not substantially altering the undeveloped character of RARE II areas is: Proposed actions such as temporary roads and mechanical fuels reduction could only affect a small percentage (approximately 5%) of the RARE II area. All mechanical treatments in RARE II would approximate this 5% sideboard (FSH 1909.15).
- Increase skid distances, if necessary, rather than constructing any temporary facilities or lengthening any specific roads wherever possible. The winter logging may not be feasible or desirable as most of the RARE II areas are in the vicinity of the Sleeping Giant ski area and winter cross-country ski trails and the activities may conflict with the winter use, parking areas, etc. or with wildlife wintering on big game winter range.
- As feasible, keep mechanically treated units within 0.5 miles of the wildland-urban interface.
- In RARE II areas, prescribed fire control lines would be constructed by hand, if needed, and not with motorized equipment. Natural barriers such as snow, ridge tops, rock, etc. would be used as possible.

Visual Resource-- Project Design for All Action Alternatives

Visual Quality Objectives. Project design would include landscape architect assistance with prescription and marking guideline developed to guide the field layout of treatment units within the foreground. To minimize impact to views from the highway corridor, lodges, cabins, and other recreation facilities, the project includes these design features:

- Skid trails, landings, temporary roads and slash piles would be reduced to lessen impacts by reducing visual contrast to conform to visual quality objectives (VQOs).
- Where there is a need to burn in the immediate foreground, hand pile and burn the slash.
- Where burning occurs at foreground landings, woody debris would be scattered over disturbed/burned areas to act as shade protection and organic base for long-term regeneration and growth.
- To meet VQOs, these special foreground treatment of sensitivity level travel routes would apply:
  - Woody debris greater than eight inches in diameter and root wads from management actions would be cut and removed from the foreground to meet VQOs (FP/III-28)

- Stumps would be cut per minimum specification to six (6) inches height or less (FP/III-28) in immediate foreground areas along sensitive travel routes.
- Treatment unit edges and boundaries would be kept irregular to maintain natural mosaic patterns. Locate harvest boundaries at existing vegetative edges.
- In meadow enhancement units or powerlines in the foreground, create the appearance of a textural edge by feathering and leaving strategic tree clumps (FP/III-27). Edges of cut openings would meander instead of straight edges, especially as seen from cabins, lodges, recreation sites and highway edge.
- Where cut edges occur within the context of hazardous fuels reduction, "feather" edges by leaving scattered individual trees and groves of trees. Leave dispersed islands or pockets of under story to soften the visual impact of immediate proposed cut openings. Arrange in random triangulated patterns from the road edge and random staggered patterns adjacent to recreation facilities and permittee's structures to create feathered edges and strategic tree clumps (FP/III-27).
- Cut existing, remnant "firewood cutter" stumps in the immediate foreground if this becomes a problem. Emphasis would be given to funding such work with product sale collections (Brush Disposal [BD] funds).

- Skid trails would be minimized, especially where directed towards the highway; skid on a diagonal away from the road edge or highway view. Skid trails, landings, temporary roads and bridge sites, etc. would be restored to the natural grade or contour of land and revegetated.
- Vegetation treatment areas would flow up to and across roads and trails, avoiding leaving narrow strips of vegetation flanking a road or trail. Shaping of larger vegetation treatment units would require a greater undulation of edge to achieve scale (FP/III-27).
- Slash disposal: Locate burn piles out of immediate foreground views of highway and other facilities (cabins, recreation sites, lodges, etc.). Scatter wood chips in locations where long term openings are desired; avoid scattering chips near the highway edge and within or near recreation facilities because grasses and other vegetation would be difficult to impossible to regenerate.
- Avoid exposing powerlines, especially "axial" or convergent views from the highway or other facilities use tapered or feathered edges on right-of-way clearings (FP/III-26).

Cultural Resources. To ensure cultural resource protection, a Class III (100%) survey of all mechanical treatment areas would be completed and a Class II survey would be completed on prescribed burn areas following all laws, regulations, and policies relative to cultural resources and historic surveys of treatment areas (timber sale provision WO-C6.24, WO-CT6.24). If any cultural materials are discovered during harvest activities, work in the areas would halt immediately and staffs from the Forest Service and the State Historical Preservation Office (SHPO) would be contacted. Work in the area would not resume until the materials are evaluated and adequate measures for their protection are implemented.

2.3 Monitoring

If an action alternative were selected, the following implementation and effectiveness monitoring of BMPS and project design would be conducted.

Riparian/aspen monitoring. Monitor regeneration to determine if additional treatment is necessary, specifically:

- Wildlife and livestock grazing. The treatment areas would be monitored for compliance with any specified grazing management practices, including any appropriate measures, e.g. electric fences, herding, etc. implemented to manage wildlife and/or livestock grazing/browsing associated with the treatment areas. If determined during monitoring that cattle or wildlife are unacceptably inhibiting

aspen regeneration or retention, additional measures to meet aspen recovery would be implemented per Forest Plan directions and standards and guidelines.

- Interdisciplinary input and participation into the prescription development and marking guidelines is important for project implementation. As needed, an interdisciplinary team of an engineer, aquatic biologist, hydrologist, soil scientist/botanist, landscape architect, silviculturist, wildlife biologist, and fire/fuels specialist would provide input into the prescriptions for the on-the-ground implementation. Best Management Practices implementation and monitoring, field layout, marking, etc. and stream crossing and road locations, designs, and rehabilitation in and adjacent to riparian/aspen areas or sensitive areas such as wetlands, the viewshed foreground, geologic hazards, sensitive plant locations or invasive species infestations can be addressed with the prescriptions. The team would provide input for marking guidelines to select tree removal and specific burn sites in and around riparian and wetland areas or visual foreground areas. Follow-up monitoring would be conducted to determine the effectiveness of the actions or to identify any rehabilitation measures.

***Invasive species/weed monitoring*.** For up to three years after completion of the project, areas would be monitored/resurveyed for the presence of newly invading exotic species and to evaluate the effectiveness of any treatments.

Prescribed burn monitoring. The post treatment conditions from prescribed burning would be monitored in accordance with the Forest's *Prescribed Fire Monitoring Effects Guide*. The Forest Plan standards and guidelines specify that a historical record will be maintained with each prescribed fire plan, which documents the biological/physical effects and the fire behavior that produced the effects (FP-III-96).

Regeneration monitoring. Site-specific silvicultural prescriptions would be developed to implement the project, if an action alternative were selected. These prescriptions would contain regeneration monitoring requirements for tentatively suited timberlands. Within harvest areas on tentatively suitable lands regeneration would be monitored one, three, and five years after the harvest to ensure adequate regeneration (ASQ ROD Appendix A, page 5 and Forest Plan III-66-68, III-178-180). The prescriptions would also contain regeneration standards for select areas outside of the suited timber base and tree planting would be an option if monitoring determines a need in sensitive foreground areas or similar visually sensitive areas.

Road closure and OHV monitoring. Closed and rehabilitated temporary roads would be checked periodically to monitor and assess effectiveness of closure methods, erosion control, and weed control.

2.4 Summary Comparison of Alternatives

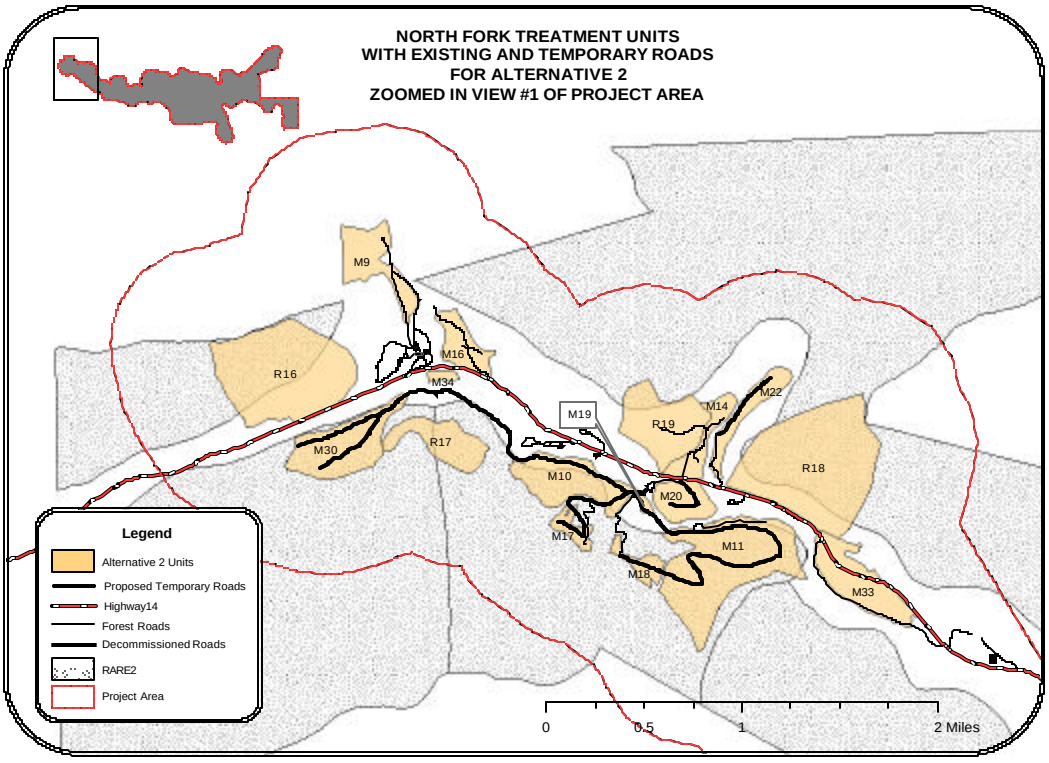
This section presents a comparative summary among the alternatives for resource elements and activities, environmental effects, and responses to objectives associated with the key issues *(see* Figure 7*)*. The effects are summarized from Chapter 3, which should be consulted for a full understanding of these and other environmental consequences.

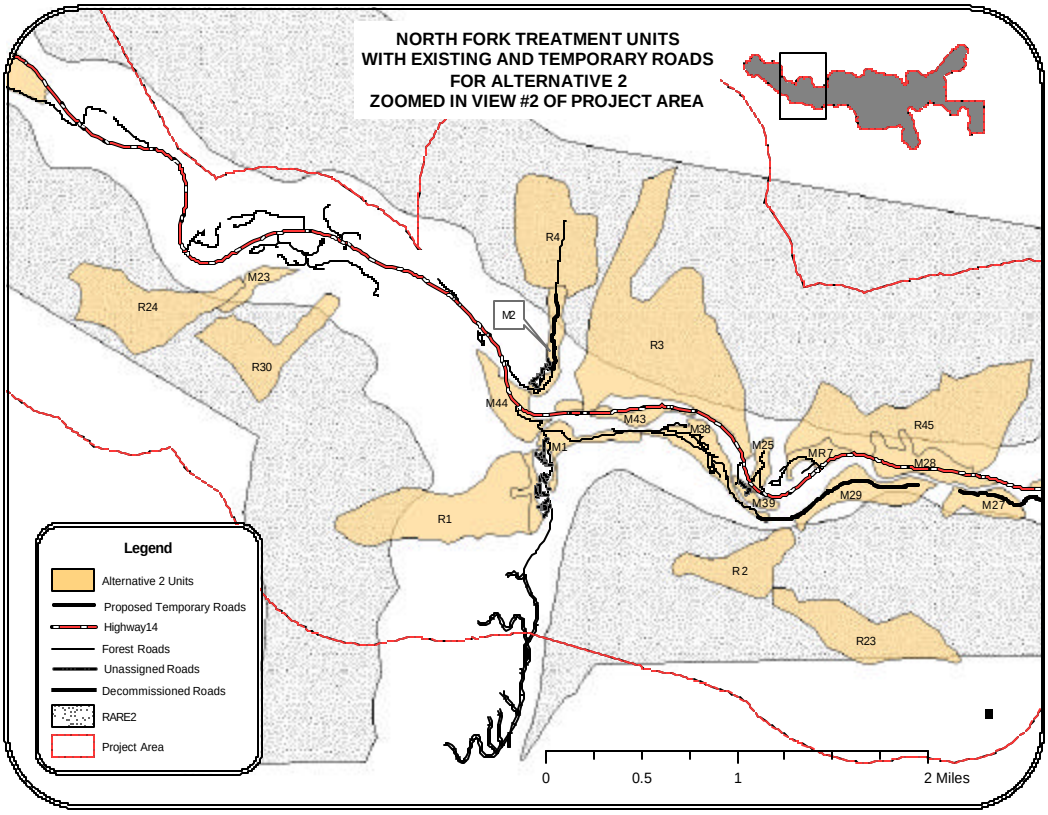
Figure 7. Comparison of resource elements, activities, and environmental effects among alternatives.

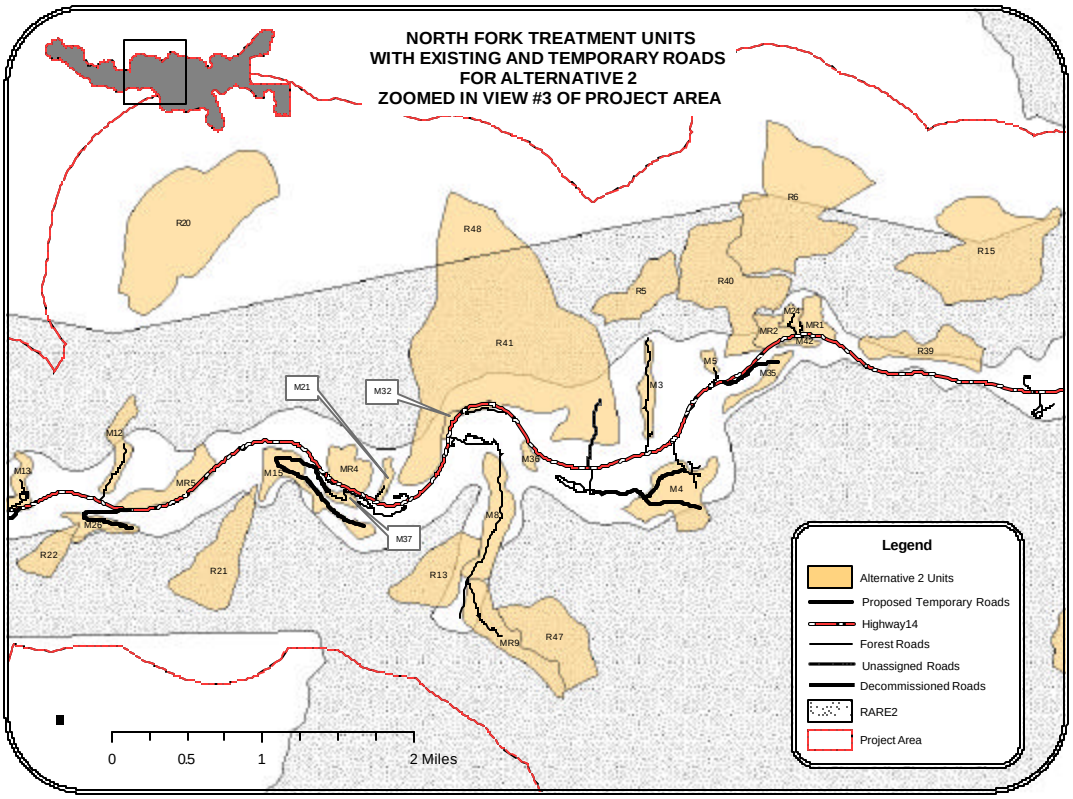
Comparison element	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3
Wildfire Indicator(s):			
-Number of developed sites having suppression capability enhanced by creation of defensible space. -Acres demonstrating a change in fire behavior in relation to fire size, fire effects, flame lengths, rates of spread, and torching and crowning potential. -Change in project area suppression capability in relation to resistance to control, firefighter and public safety.	The No Action Alternative would not modify fire behavior, thus no developed sites would have suppression capability enhanced by creation of defensible space. Mechanical or prescribed burning treatments would not be utilized as a vegetation management or fuel reduction tool, thus no acres would have a change in potential fire behavior and no enhanced suppression capability, no reduced resistance to control and no lessened danger to firefighters and public safety would result.	Fire behavior would be modified and 462 developed sites would have suppression capability enhanced by creation of defensible space. Total treatments on approximately 15, 870 acres would modify the behavior of a wildland fire and increase the likelihood that fire suppression efforts would be successful in containing fires to a small size. Fuel loads and the risk of fire spread would be reduced in treatment areas. Reduced fuel loads to < 15 tons per acre would keep fire risk at acceptable levels.	Fire behavior would be modified and 462 developed sites would have suppression capability enhanced by creation of defensible space. Total treatments on approximately 15, 127 acres would modify the behavior of a wildland fire and increase the likelihood that fire suppression efforts would be successful in containing fires to a small size. Fuel loads and the risk of fire spread would be reduced in the project area. Reduced fuel loads to < 15 tons per acre would help keep fire risk at acceptable levels. Treated areas would help reduce fire effects and enhance suppression capability and reduce resistance to control and danger to firefighters and public safety. Effects would be similar to Alt. 2, though reduced to the extent that fewer acres would be treated.

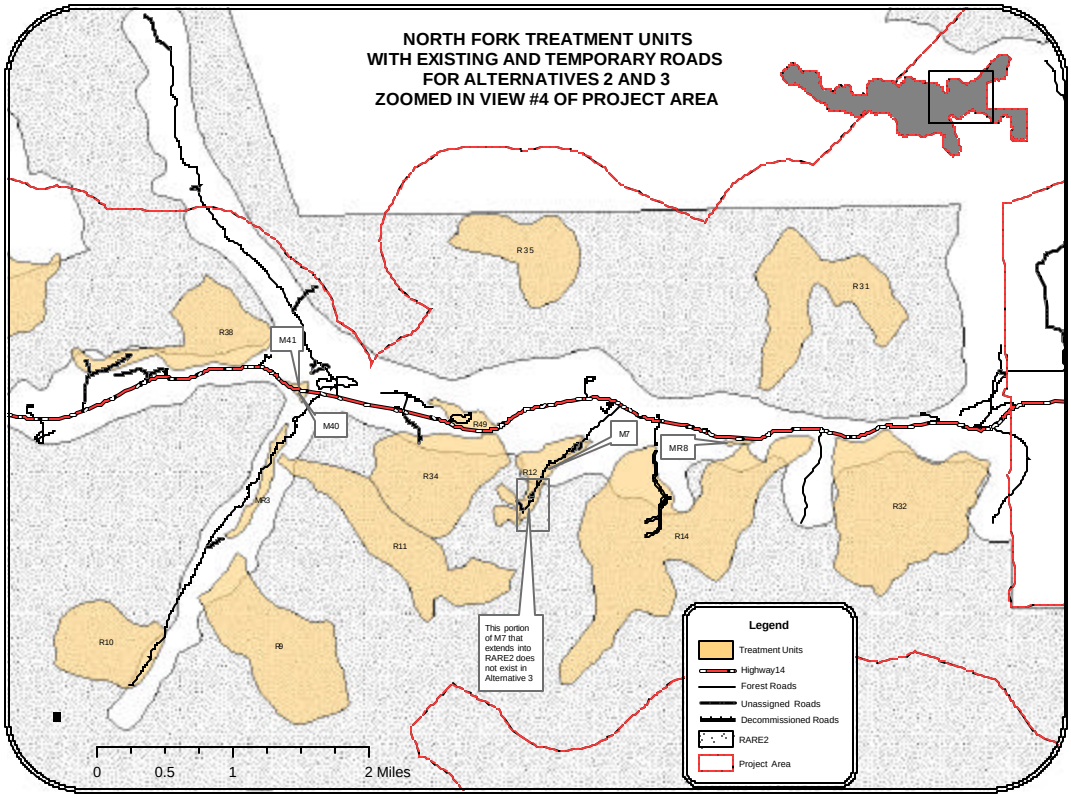
Comparison element	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3
RARE II Indicator(s):			
-Acres/Percent of RARE II affected by mechanical treatments for fuels -Miles of temporary roads within RARE II	0 acres of RARE II affected by mechanical treatments for fuels out of 77, 719 acres. 0 miles of temporary roads within RARE II.	501 acres of RARE II affected by mechanical treatments for fuels out of 77, 719 acres, or 0.6 %. 4-4.5 miles of temporary roads within RARE II.	9 acres of RARE II affected by mechanical treatments for fuels out of 77, 719 acres, or 0.01%. 0 miles of temporary roads within RARE II.
Wildlife Indicator(s):			
-Acres of big game habitat where encroachment is reduced and/or forage is improved -Acres of riparian deciduous vegetation (cottonwood, aspen, shrubs) enhanced -Acres of secure habitat inside grizzly bear recovery area temporarily impacted by temporary roads -Acres of secure wildlife habitat temporarily impacted by temporary roads within analysis area	0 acres of big game habitat where encroachment is reduced and/or forage improved 0 acres of riparian deciduous vegetation (cottonwood, aspen, shrubs) enhanced 0 acres of secure habitat inside grizzly bear recovery area temporarily impacted by temporary roads 0 acres of secure wildlife habitat temporarily impacted by temporary roads within analysis area	13,483 acres of big game habitat where encroachment is reduced and/or forage improved 278 acres of riparian deciduous vegetation (cottonwood, aspen, shrubs) enhanced 778 acres of secure habitat inside grizzly bear recovery area temporarily impacted by temporary roads 828 acres of secure wildlife habitat temporarily impacted by temporary roads within analysis area	13,483 acres of big game habitat where encroachment is reduced and/or forage improved 278 acres of riparian deciduous vegetation (cottonwood, aspen, and shrubs enhanced 426 acres of secure habitat inside grizzly bear recovery area temporarily impacted by temporary roads 476 acres of secure wildlife habitat temporarily impacted by temporary roads within analysis area
Soil, Water, and Aquatic Resources Indicator(s):			
-Miles of temporary roads, in particular, the lengths of temporary roads along streams including period	0 miles of temporary roads, in particular, the lengths of temporary roads along streams including period	12.2-12.5 miles of temporary roads would be required, including the 3.8 miles of temporary roads along	7.7-8-0 miles of temporary roads would be required, including the 3.2 miles of temporary roads along

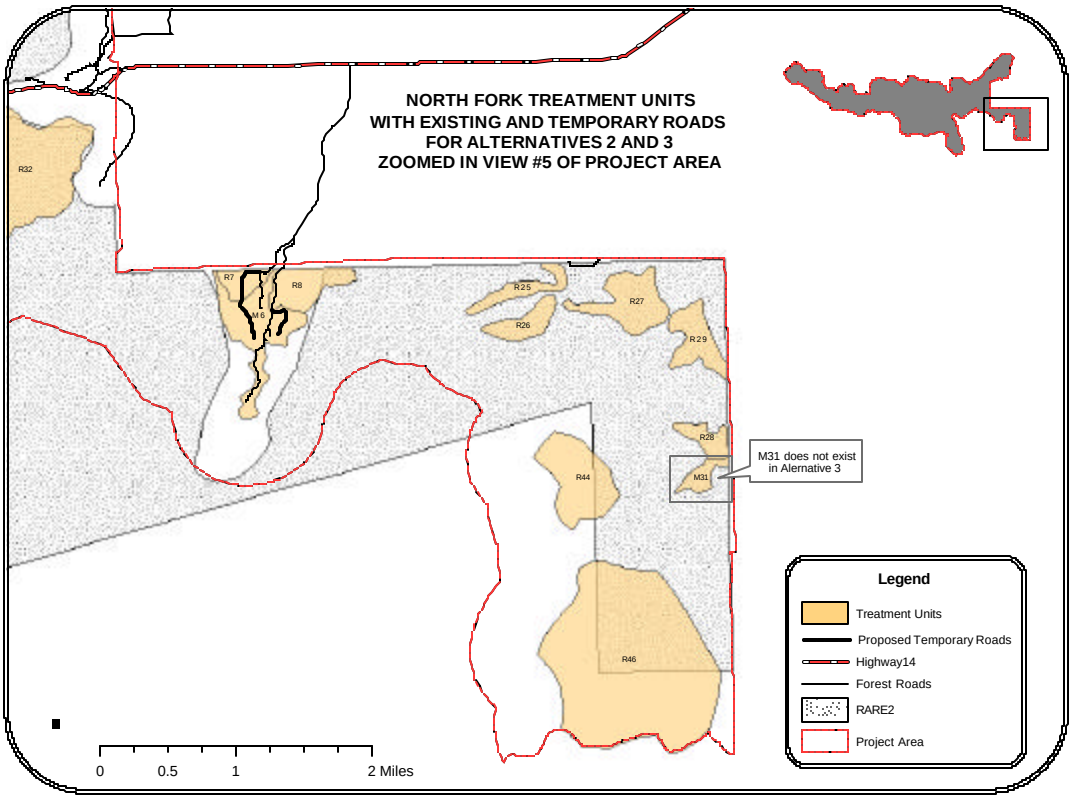
Comparison element	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3
of use -Number, type (i.e. low water fords, bridges, etc), timing, and locations of stream crossings -Acres treated by mechanical methods and timing of these activities -Acres treated through prescribed burns and timing of these activities	of use 0 low water fords or bridges for stream crossings 0 acres treated by mechanical methods 0 acres treated through prescribed burns	streams (WIZ). Up to 20 low water fords or temporary bridges for stream crossings would be required 904 acres treated by mechanical methods and burning in the WIZ 1,352 acres treated through prescribed burns in the WIZ	streams (WIZ). Up to 10 low water fords or temporary bridges for stream crossings would be required 797 acres treated by mechanical methods and burning in the WIZ 1,352 acres treated through prescribed burns in the WIZ

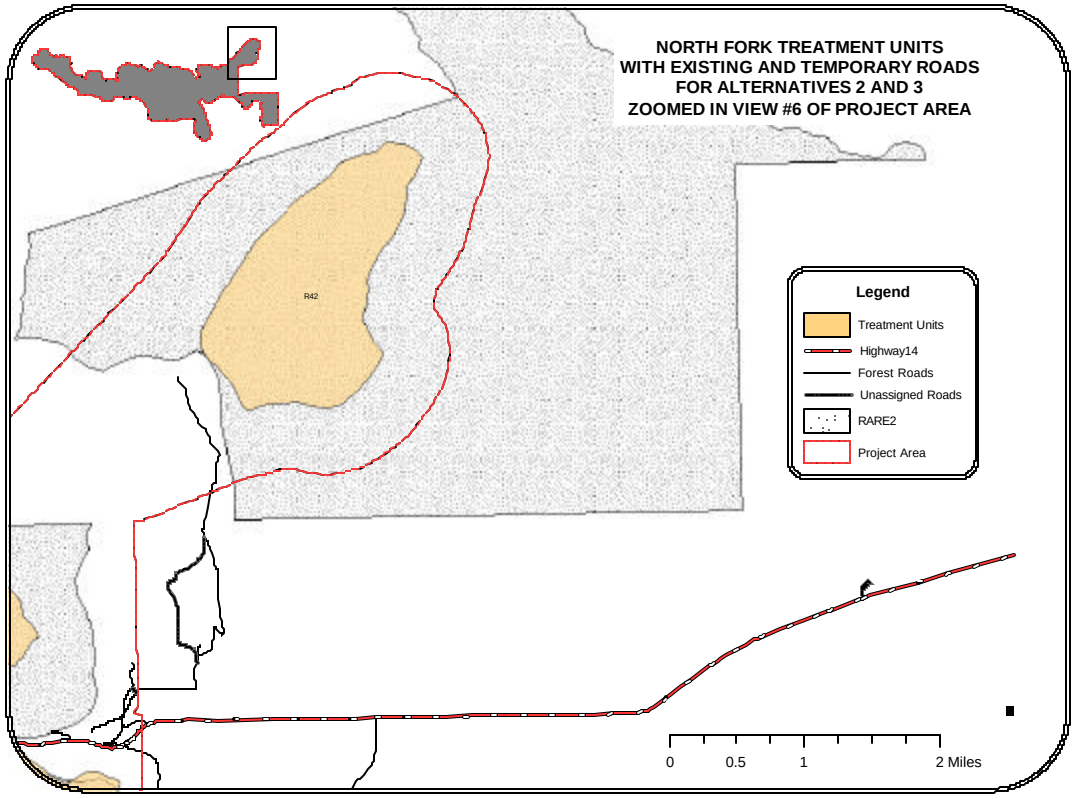

NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 2
ZOOMED IN VIEW #1 OF PROJECT AREA
M9
M16
M34
R16
M30
R17
M19
M14
M22
R19
R18
M10
M20
M17
M11
M18
M33
Legend
Alternative 2 Units
Proposed Temporary Roads
Highway14
Forest Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles

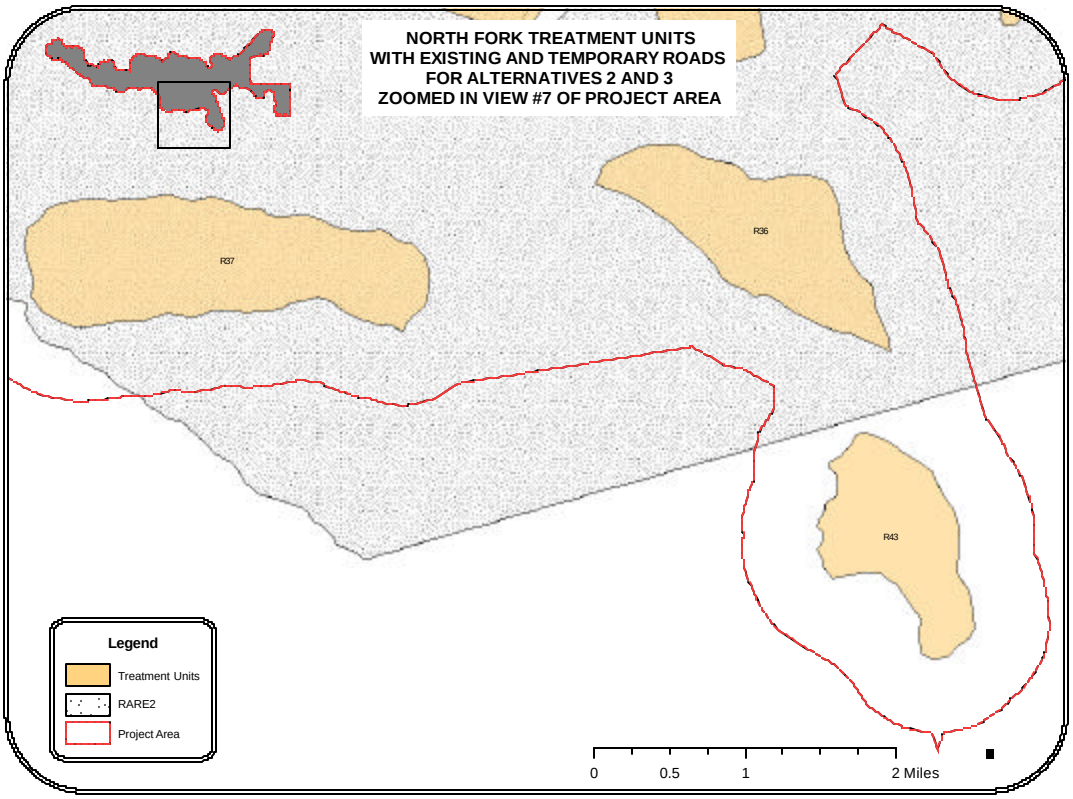

NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 2
ZOOMED IN VIEW #2 OF PROJECT AREA
R4
M23
R24
M2
R3
R30
M44
M43
M38
M1
M25
MR7
R45
M28
M29
M39
M27
R1
R2
R23
Legend
Alternative 2 Units
Proposed Temporary Roads
Highway14
Forest Roads
Unassigned Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles

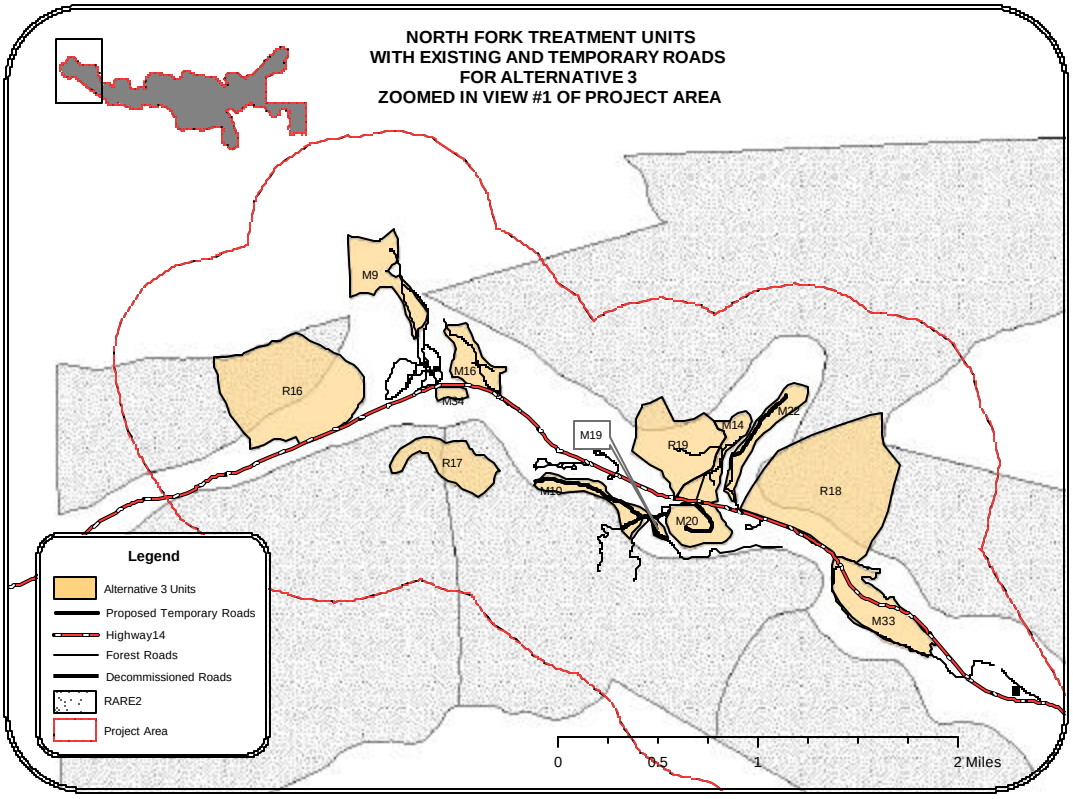

NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 2
ZOOMED IN VIEW #3 OF PROJECT AREA
R20
R48
R6
R15
R40
R5
R41
R39
M21
M32
M3
M5
M12
M13
MR5
M31
MR4
M4
M37
M22
R22
R21
R13
MR9
R47
Legend
Alternative 2 Units
Proposed Temporary Roads
Highway14
Forest Roads
Unassigned Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles

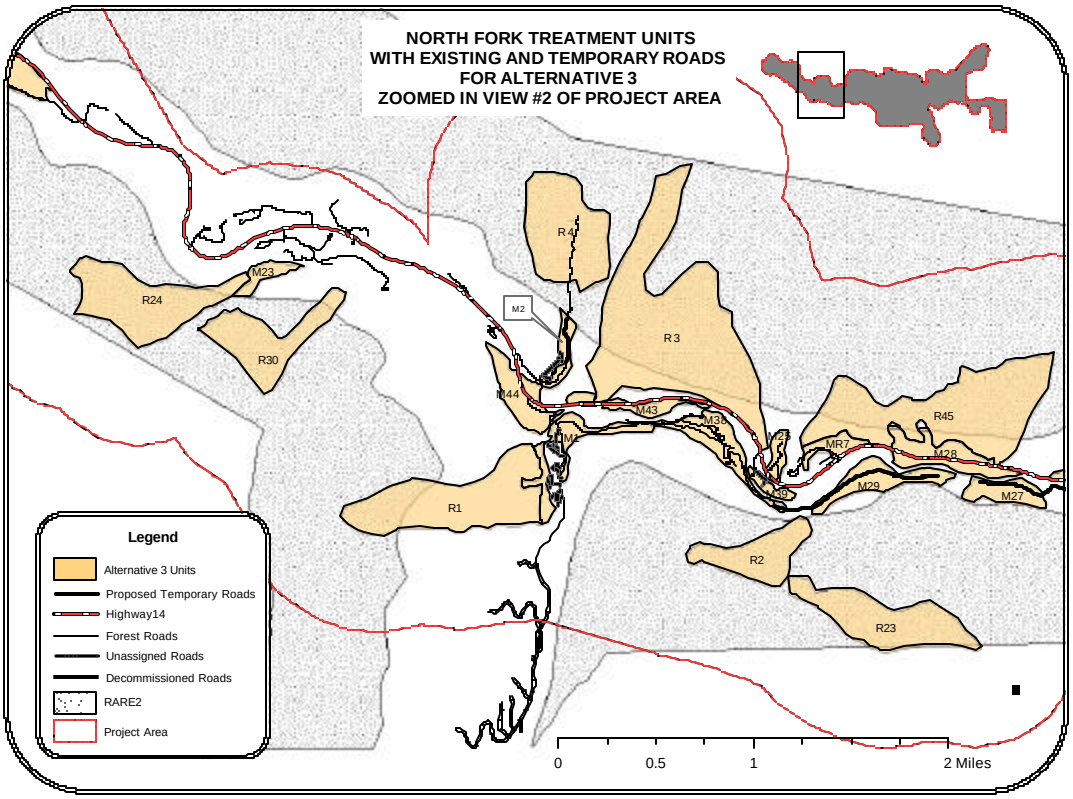

NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVES 2 AND 3
ZOOMED IN VIEW #4 OF PROJECT AREA
R35
R31
R38
M41
M40
R49
M7
MR8
R34
R12
R32
R14
R11
R10
R9
This portion of M7 that extends into RARE2 does not exist in Alternative 3
Legend
Treatment Units
Highway14
Forest Roads
Unassigned Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles

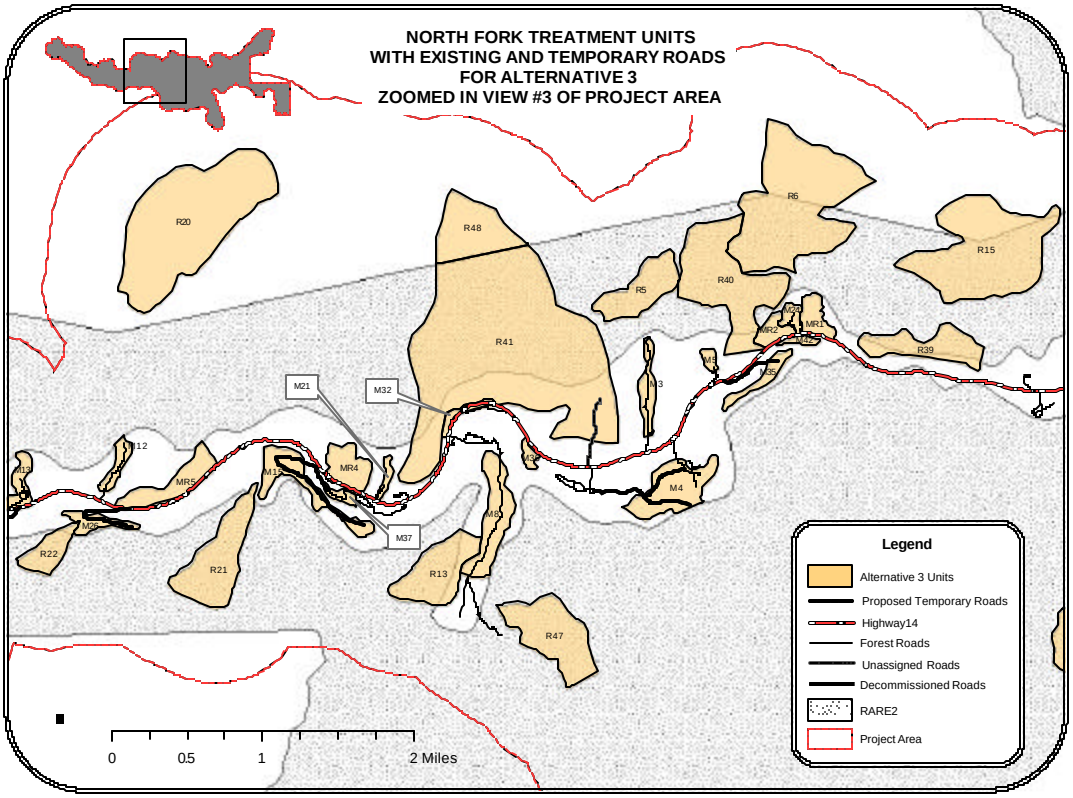

NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVES 2 AND 3
ZOOMED IN VIEW #5 OF PROJECT AREA
R32
R7
R8
M6
R25
R26
R27
R29
R28
M31
R44
R46
M31 does not exist in Alernative 3
Legend
Treatment Units
Proposed Temporary Roads
Highway14
Forest Roads
RARE2
Project Area
0
0.5
1
2 Miles


NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVES 2 AND 3
ZOOMED IN VIEW #6 OF PROJECT AREA
R42
Legend
Treatment Units
Highway14
Forest Roads
Unassigned Roads
RARE2
Project Area
0
0.5
1
2 Miles


NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVES 2 AND 3
ZOOMED IN VIEW #7 OF PROJECT AREA
R37
R36
R43
Legend
Treatment Units
RARE2
Project Area
0
0.5
1
2 Miles


NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 3
ZOOMED IN VIEW #1 OF PROJECT AREA
M9
M16
M34
R16
R17
M19
M14
M22
R19
R18
M20
M33
Legend
Alternative 3 Units
Proposed Temporary Roads
Highway14
Forest Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles


NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 3
ZOOMED IN VIEW #2 OF PROJECT AREA
R4
M23
R24
M2
R3
R30
M44
M43
M36
M35
MR7
R45
M28
M29
M26
M27
R1
R2
R23
Legend
Alternative 3 Units
Proposed Temporary Roads
Highway14
Forest Roads
Unassigned Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles


NORTH FORK TREATMENT UNITS
WITH EXISTING AND TEMPORARY ROADS
FOR ALTERNATIVE 3
ZOOMED IN VIEW #3 OF PROJECT AREA
R20
R48
R6
R15
R5
R40
R41
R39
M21
M32
M37
MR4
MR5
R22
R21
R13
R47
M4
Legend
Alternative 3 Units
Proposed Temporary Roads
Highway14
Forest Roads
Unassigned Roads
Decommissioned Roads
RARE2
Project Area
0
0.5
1
2 Miles