

Fisheries Biological Assessment Addendum (for Appendix G)

Forest Service
Easy Fire Recovery Project

August 27, 2004

This letter serves to document the reduction in planned salvage acres and the impact on the analysis and “Effects Determinations” on Threatened or Endangered species from the Easy Fire Recovery Project.

The following table displays the change in planned harvest acres.

Alternative	DEIS Harvest Acres	FEIS Harvest Acres	% decrease
3	2,820	1,298	54%

The table shows that the planned harvest acres in Alternative 3 has decreased by more than 50%. A decrease in harvested acres will not increase the effects on threatened or endangered species. The result would be a decrease of impacts at best or no change in impacts.

The “Effects Determinations” for threatened or endangered species from Implementation of Alternative 3 was “May affect but is not likely to adversely affect (NLAA)”. The decrease in harvest acres will not change those determinations.

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27 August 2004

**APPENDIX G - BIOLOGICAL ASSESSMENT FOR MID-
COLUMBIA RIVER SUMMER STEELHEAD AND
COLUMBIA RIVER BULL TROUT AND LETTERS OF
CONCURRENCE**

Biological Assessment for Mid-Columbia River Summer Steelhead and Columbia River Bull Trout

Easy Fire Recovery Project

**Upper Middle Fork John Day River Watershed
Upper John Day River Watershed
Malheur National Forest
Prairie City Ranger District**

05 December 2003

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I. Introduction

This Biological Assessment (BA) was prepared pursuant to the Endangered Species Act of 1973, as amended, to evaluate and describe the effects of land management projects on summer steelhead (*Onchorhynchus mykiss*) and bull trout (*Salvelinus confluentus*). The BA was prepared in accordance with the National Marine Fisheries Service (NMFS) guidelines found in their 1996 publication: *Making Endangered Species Act Determinations of Effects for Individual or Grouped Actions at the Watershed Scale* and similar guidance from the US Fish and Wildlife Service (USFWS) found in their 1998 publication: *A Framework to Assist in Making Endangered Species Act Determinations of Effects for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale*.

The projects assessed with this BA include all activities associated with the Easy Fire Recovery Project. These projects are described in detail in Chapter III of this BA. All components of the Easy Fire Recovery Project are currently being evaluated under the NEPA process, under the Easy Fire Recovery Project Environmental Impact Statement.

II. Watershed Description

The Easy Fire occurred within four 6th field watersheds (subwatersheds) – three in the Upper Middle Fork John Day River (UMFJDR) 5th Field watershed (Bridge Creek, Clear Creek, Dry Fork) and one in the Upper John Day River (UJDR) 5th field watershed (Reynolds Creek). Most of the fire occurred in the Clear Creek subwatershed, where 3,002 acres burned. Clear Creek subwatershed also had the most high burn severity acres, 800 acres. Only a small number of acres (30 acres) were burned within the Dry Fork subwatershed. In the Reynolds Creek subwatershed, most of the acres were of low burn severity, and only 35 acres were high burn severity. The table below lists the acres of the various BAER (Burned Area Emergency Rehabilitation) burn severities in the subwatersheds, HUC 6th field (Bright and others 2002).

Table1. Burned Acres by Subwatershed.

Subwatershed (HUC 6 TH Field)	Total SWS Acres	Unburned Acres in Easy Fire Area		BAER Burn Severity (Acres)			Total Acres Burned	% of Sub- water- shed Burned (*)
				Low High	Moderate			
Bridge Creek	12,149	256	605	311	158	172	641	5 (1)
Clear Creek Dry	12,484	6	265	1,226	976	800	3,002 30	24 (6)
Fork Reynolds	11,219			24	5	1	864	<1 (<1)
	19,915			702	127	35		4 (<1)
Total	55,767	1,132		2,263	1,266	1,008	4,537	8 (2)

*Percent of subwatershed with high burn severity in ().

Figures revised April 2003 to reflect the new subwatershed boundaries.

The watershed and fisheries analysis is focused on three subwatersheds: Bridge Creek, Clear Creek and Reynolds Creek where most of the fire burned. Only 30 acres were burned in the

Dry Fork subwatershed, and no Easy Fire Recovery activities are proposed for those acres. An assessment of watershed baseline condition for the three subset 6th Field watersheds is described in Table 2. The Prairie City Ranger District completed a Watershed Analysis for the Upper Middle Fork John Day River Watershed in 1998. Also, the Clear Creek Environmental Assessment (Clear Creek subwatershed) and Mossy Analysis Area Environmental Assessment (North Reynolds Creek subwatershed) were completed in 1994. In conjunction with these environmental assessments a Bull Trout Biological Assessment (1998) and Biological Evaluation/Biological Assessment for Steelhead and Chinook Salmon (1998) for the Clear Creek environmental assessment were completed, as well as a Biological Assessment for Bull Trout for the John Day River in the Mossy Analysis Area Environmental Analysis (1998). Along with the biological evaluation, biological analysis, watershed analysis, and environmental analyses, stream and field surveys conducted periodically since their completion provided the majority of the data utilized for this assessment of condition. The data was then compared to the established matrix indicator criteria to categorize the baseline condition as properly functioning, at risk, or not properly functioning. Baseline condition was assessed utilizing both the NMFS matrix values and US Fish and Wildlife Service (USFWS) bull trout matrix values. Where differences in criteria values occurred, the most conservative value was utilized.

Table 2. Baseline Condition Ratings for 6th Field Watersheds

	6 th Field Watersheds		
Matrix Indicator	Clear Creek (Key Watershed)	Bridge Creek (Key Watershed)	Reynolds Creek (Key Watershed)
Water Temperature	NPF	NPF	NPF
Sediment	PF	NPF	NPF
Chemical Contaminants/Nutrients	PF	PF	PF
Physical Barriers	PF	AR	PF
Substrate Embeddedness	AR	AR	NPF
Large Woody Debris	PF	PF	AR
Pool Frequency and Quality	AR	NPF	AR
Off-Channel Habitat	PF	NPF	PF
Refugia	PF	AR	PF
Wetted Width/Max Depth Ratio	PF	AR	PF
Streambank Condition	AR	PF	NPF
Floodplain Connectivity	PF	NPF	PF
Change in Peak Base Flow	PF	PF	PF
Drainage Network	AR	AR	AR
Road Density and Location	NPF	NPF	NPF
Disturbance History and Regime	PF	PF	PF
Riparian Reserves	PF	AR	PF

PF = Properly Functioning, AR = Functioning At Risk, NPF = Not Properly Functioning

Stream Channel Habitat Condition

Current habitat conditions in the watersheds reflect almost 140 years of human activities. Where past impacts to riparian and aquatic habitat exist in the two watersheds, four dominant factors have resulted in the degraded conditions: 1) An extensive road system that imposes on most of the riparian areas within the watershed; 2) Past logging practices, which have both directly and indirectly influenced channel morphology; 3) Livestock, which have impacted stream bank stability and changed vegetative species composition; and 4) The significant reduction of beaver populations within the watershed. Water withdrawals and projects that artificially restrict stream channels have also impacted stream channels.

Each of these four factors have led to a simplification of channel structure by reducing the influence of large wood, straightening of the channel, destabilizing stream banks and reducing the amount of bank undercuts, widening channels (increasing width to depth ratios), and by causing streams to downcut their channels, thereby reducing their contact with the floodplains across much of the UMFJDR and UJDR watersheds. However, in contrast to the overall general watershed condition described above, the Clear Creek and Lunch Creek drainages are in generally good condition (see following section on Large Wood).

Large woody debris levels have been reduced along many reaches of streams located in the two watersheds by past harvest activities, stream-side railroad grades, road building, and stream management activities. This reduction in large wood has resulted in reduced numbers of pools, channel diversity and sinuosity, bank stability, as well as increased stream velocities and water temperatures. Also the reduction of wood in channels has resulted in a reduced ability for streams to trap sediments and organic debris and interact with floodplains. The reduced wood levels have also meant a loss of high quality summer and winter rearing habitat for salmonids and other fish species. Bull trout, in particular, prefer complex habitat formed by the accumulation of large wood (Rieman and McIntyre 1993).

However, exceptions to this condition of reduced stream channel large woody debris levels are found in Lunch Creek and Clear Creek, in the Bridge Creek and Clear Creek subwatersheds, respectively, of the UMFJDR watershed (see table below). These subwatersheds contain high levels of woody debris and good channel complexity reflecting the largely unaltered condition of the riparian vegetation along these streams. Past log weir structures have been constructed in the lower portions of Clear Creek in an attempt to increase pool habitat and emulate large woody debris structure.

Table 3. Summary of Channel habitat Conditions in Lunch and Clear Creeks

Stream	Average Gradient % *	Average Sinuosity *	Bankfull Width to Depth Ratio **	Woody Debris per Mile (#large pieces) **
Clear Creek	3.3	1.2	6-13.7	329 (36)
Lunch Creek	2.7	1.4	15.7	197 (5)

Sources: * Derived from USGS topographic maps.

** Hankin and Reeves stream survey data.

The riparian condition of those streams adjacent to the project area in the UJDR watershed is much different. In Reynolds Creek, to the confluence of North Reynolds Creek, and in North Reynolds Creek, to the confluence with Mossy Gulch Creek, the overstory conifers are rated at fair and the understory does not meet forest plan standards (Mossy Analysis Area EA 1994). The upper reaches of North Reynolds Creek, from its confluence with Mossy Gulch Creek to its headwaters, also have overstory conifers in fair condition, but at risk of declining due to insect infestation. Most of the understory vegetation is in satisfactory condition.

Mossy Gulch Creek, from its mouth to its headwaters has a conifer overstory condition in decline from insect infestation. However, the understory vegetation meets forest plan standards (Mossy Analysis Area EA 1994). Mossy Gulch Creek, Reynolds Creek, and the Upper North Reynolds Creek were found to have stable banks. In other parts of the watershed where the streams had unstable banks, surveys indicated these conditions had been primarily caused by the impact of recreational activities (dispersed camping) and the trampling and heavy grazing by cattle, not past harvest activities. Riparian shrubs were few and heavily browsed. Mature deciduous trees were present, although heavy browsing of seedlings was restricting or eliminating future populations.

Stream Inventories

Using Region 6 Level II stream methodology, pre-fire stream inventories were conducted on streams within the project area (Clear Creek, 1992, UMFJDR watershed) and within the potential effected environment immediately adjacent to the project area (Reynolds Creek, North Reynolds Creek, 1991, UJDR watershed). Clear Creek is the only perennial fish bearing stream (Category 1) present in the Easy Fire project area. Post-fire stream inventories were also conducted in 2002 to assess conditions on all Category 1 (perennial, fish-bearing), 2 (perennial, non fish-bearing), and 4 (intermittent) streams in the project area. However, the intent of these surveys was to acquire data for only four specific types of habitat data, not a complete Level II stream inventory. These data were: 1) large woody debris per mile, 2) replacement large wood per mile, 3) pools per mile, and 4) Wolman pebble counts.

Reaches 1 through 4 of the 1992 Clear Creek stream survey and the first 0.30 miles of Reach 5 inventoried channel and riparian conditions below the fire between Highway 26 and the project area boundary, whereas only Reach 1 of the 2002 survey covered the same area. The last mile of

Reach 5 and the first 1.85 miles of Reach 6 of the 1992 survey inventoried conditions within the fire boundary, which corresponds to Reach 2 of the 2002 stream survey. The last 0.25 miles of Reach 6 of the 1992 survey and Reach 3 of the 2002 survey were completed above the fire project area boundary.

Large Wood

Twenty pieces of wood per mile (at least 35-feet long and greater than 12-inches in diameter) is considered to be functioning appropriately according to PACFISH (1994). Results of stream surveys are shown in table below. Large wood counts include both large and medium woody debris which is effective in smaller streams. Low LWD component reduces availability of high quality pools, sorting of gravel to create spawning habitat, and increases channel instability and sediment transport, all of which impact fish habitat and populations. Reach one of Reynolds Creek spans the area between the end of private land to the confluence with North Reynolds Creek (about 1 1/2 miles).

Table 4. Large Wood/Mile for Surveyed Streams in the Easy Fire Recovery Project Area.

Stream Name	Reach	Total pieces of large wood/mile >35-foot long and >12-inches diameter
Upper Middle Fork John Day River Watershed		
Clear Creek 1992	1	94
	2	184
	3	130
	4	144
	5	206
	6	307
Clear Creek 2002	1	42
	2	63
	3	74
Upper John Day River Watershed		
Reynolds Creek	1	No data available
North Reynolds Creek	1	33
	2	103
	3	80
	4	25
	5	177
	6	124

While wood counts in Clear Creek are much lower in 2002 as compared to the 1992 survey, the large wood counts are well above PACFISH (1994) objectives at two to three times PACFISH (1994) levels. Results for the North Reynolds Creek stream survey also show wood counts to be above PACFISH levels. However, the data collected for Clear Creek in 2002 and North Reynolds Creek in 1991 are below the minimum desired future condition (DFC) values of 80 pieces per mile specified in Amendment 29 of the Malheur Forest Plan (1990).

Post-fire wood count data was also collected for Category 2 and 4 streams in 2002 within the

Easy Fire Recovery project area and is shown in the table below. While specific wood count recommendations are not specified in PACFISH or Amendment 29 of the Malheur Forest Plan (1990) for these stream categories, the plan does specify the following as a resource element standard under Fish and Wildlife (Resource Element 12, IV-56): Provide for the input of large, woody debris into all classes of streams and evaluate to determine if objectives are being met. Wood count data was collected in accordance with Region 6 Level II Stream Survey protocol.

Table 5. Large Wood/Mile for Category 2 and 4 Streams in the Easy Fire Recovery Project Area.

Stream	Category	Total pieces of large wood/mile >35-feet long and >12-inches diameter
Easy Creek	4	40
Tributaries to Clear Creek within Project Area	2	59
Tributaries to Clear Creek within Project Area	4	20

The surveyed reach breaks for these Category 4 streams are shown in the following figure.

Large Pools

Large pools function as holding areas for migrating adult salmonids, summer and rearing habitat for juvenile salmonids, adult bull trout and redband trout, and as refugia during low flows and extreme temperatures.

All surveyed streams were found to be below PACFISH (1994) objectives of 96 pools per mile and Amendment 29 of the Malheur Forest Plan (1990) DFC minimum number of 75 per mile. See table below.

Table 6. Pools/Mile for Surveyed Streams in the Easy Fire Recovery Project Area

Stream Name	Reach	Pools per Mile
Upper Middle Fork John Day River Watershed		
Clear Creek 1992	1	15
	2	4
	3	9
	4	5
	5	7
	6	8
Clear Creek 2002	1	12
	2	11
	3	0
Upper John Day River Watershed		
Reynolds Creek	1	50
North Reynolds Creek	1	0
	2	2
	3	8
	4	50
	5	3
	6	2

Stream Substrate

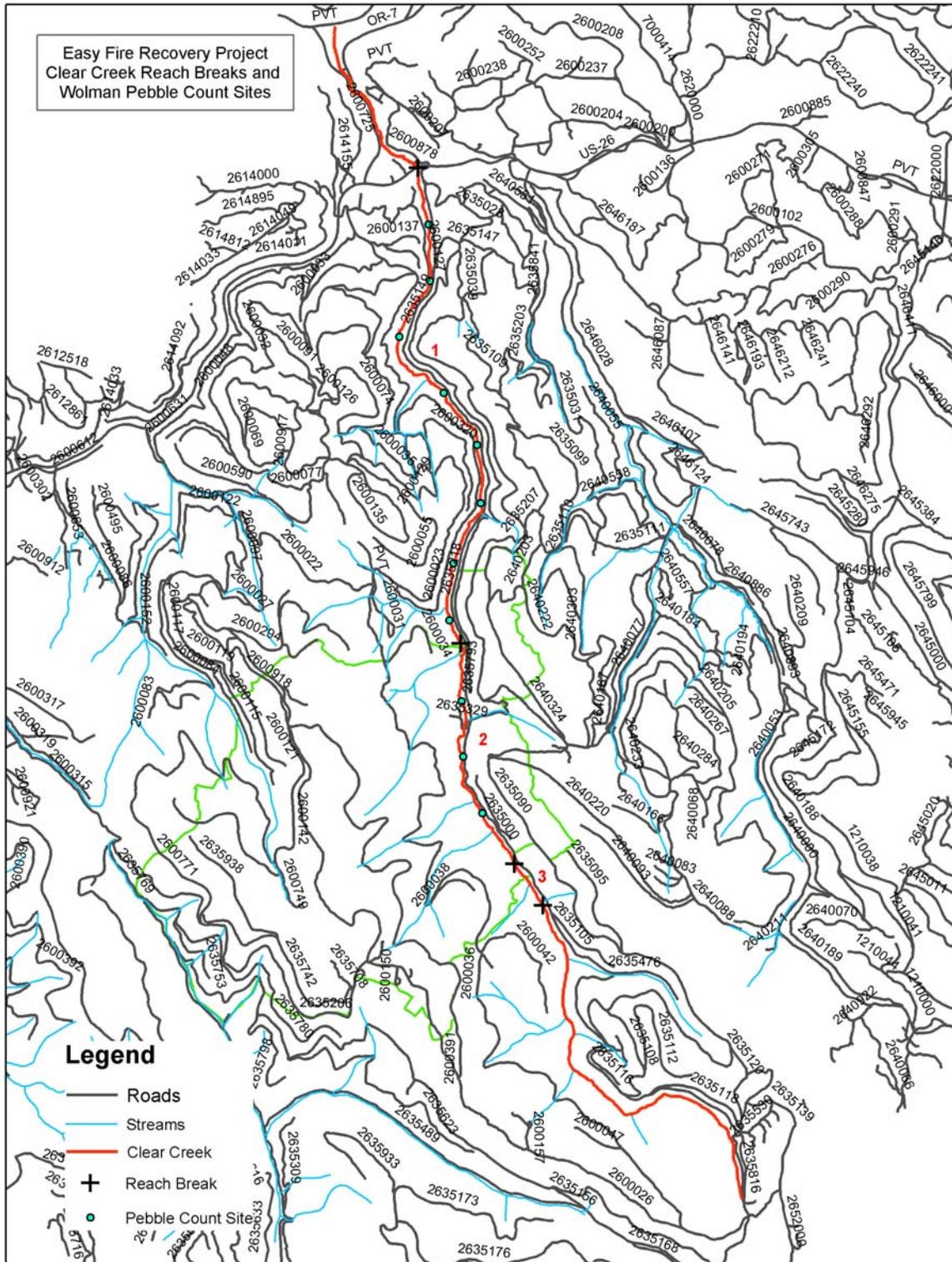
Clear Creek and North Reynolds Creek were found to have a high percentage of embedded units (>35% embedded). No data was available for Reynolds Creek (See table below). Gravel for trout spawning is found in every perennial stream reach of streams surveyed in the project analysis area. See following table.

Table 7. Substrate of Surveyed Streams in the Easy Fire Recovery Project Area

Stream Name	Reach / %units embedded >35%	Dominant Substrate	Subdominant Substrate
Upper Middle Fork John Day River Watershed			
Clear Creek 1992	1/ 75%	Cobble	Gravel
	2/ 0	Gravel	Cobble
	3 /0	Gravel	Cobble
	4/56%	Cobble	Gravel
	5/86%	Gravel	Sand
	6/44%	Cobble	Gravel
Clear Creek 2002	1/No Data	No Data	No Data
	2/No Data	No Data	No Data
	3/No Data	No Data	No Data
Upper John Day River Watershed			
Reynolds Creek	1/ No data available	Cobble	Gravel
North Reynolds Creek	1/ 0	Cobble	Gravel
	2/ 0	Cobble	Gravel
	3/ 25	Cobble	Gravel
	4/ -	Cobble	Gravel
	5/ 100	Cobble	Gravel
	6/ 100	Cobble	Gravel

Wolman Pebble Count Data

While dominant and subdominant substrate and embeddedness data were not collected during the post-fire 2002 Clear Creek survey, Wolman Pebble Count data was collected. The Wolman Pebble count technique (Wolman 1954) has recently been recognized (since 1996) as a better alternative to characterize substrate than visual estimation techniques such as embeddedness. Pebble counts are also used as monitoring tools to evaluate the entry of fine sediments (i.e., sand, silt, or clay) into streams resulting from management activities such as timber harvest, fire, or road construction. The following figure depicts reach breaks for this survey as well as the Wolman Pebble Count sites in Reaches 1 and 2.



Wolman pebble count transects were completed downstream (Reach 1) and within (Reach 2) the fire area, according to Region 6 Stream Survey Protocol (Version 2.3). Data was compiled in table below. A pebble count generally consists of a random selection of at least 100 particles from the streambed. Sand, silt, and clay particles are tallied as “less than 2 mm” or what may be regarded generally as potentially harmful to fish. Because the methodology used in collecting data is inherently biased against fines, this data can not be compared to embeddedness data from

the 1992 survey, but will better serve as a monitoring tool to assess post-fire changes in stream channel particle size distributions.

Table 8. Wolman Pebble Count Data - Clear Creek Survey 2002.

Reach	Site	Distance Between Sites (Feet)	Total Distance from Reach Start (Feet)	Percent Finer than 2 mm	D50 (mm)	D84 (mm)
1	1	2752		5	22.7	37.8
1	2	2668	5420	0	27.1	46.5
1	3	3044	8464	0	30.4	65.2
1	4	3951	12415	0	30.3	50.4
1	5	3107	15522	3	10.7	19.6
1	6	2756	18278	0	24.0	63.3
1	7	3248	21526	0	18.1	35.4
1	8	2734	24260	0	15.4	40.0
1	End of Reach	1241	25501			
2	1	2890		11	53.1	105.4
2	2	2837	5727	8	17.3	35.7
2	3	3042	8769	0	25.2	87.2
2	End of Reach	2875	11644			

Percent Bank Stability

Results show Reynolds Creek and Clear Creek to have highly stable banks, exceeding PACFISH (1994) objective levels of >80% and the Malheur National Forest Plan Amendment 29 (1994) DFC value of 90% in the table below. Whereas, only Reach 5 of North Reynolds Creek showed bank stability in excess of 80%.

Table 9. Bank Stability for Surveyed Streams in the Easy Fire Recovery Project Area.

Stream Name	Reach	Streambank Stability (%)
Upper Middle Fork John Day River Watershed		
Clear Creek 1992	1	100
	2	100
	3	100
	4	100
	5	100
	6	100
Clear Creek 2002	1	-
	2	-
	3	-
Upper John Day River Watershed		
Reynolds Creek	1	100
North Reynolds Creek	1	58
	2	55
	3	56
	4	-
	5	86
	6	-

Wetted Width/ Maximum Depth Ratio

High width to depth ratios, without shade or undercut banks, commonly allow the sun to elevate stream temperatures above the optimum for salmonid summer rearing. High width to depth ratios can also limit winter rearing by allowing streams to freeze. High width to depth ratios in smaller streams can severely limit habitat available for fish at base flows due to inadequate depth as well as high water temperatures.

Wetted width to maximum depth ratios for all surveyed streams met or exceeded the PACFISH (1994) and the Malheur National Forest Plan Amendment 29 (1994) DFC objective level of <10. All reaches of Clear Creek were less than or equal to 10, Reynolds Creek reaches ranged from 4.6 to 8.7 and North Reynolds Creek reaches ranged from 6.0 to 7.4.

Off-Channel Habitat

Larger streams, such as Bridge Creek, have lost off channel habitat due to channel scour while stream surveys have documented off-channel habitat in major tributaries to these streams; example Clear creek, 1992 and Reynolds Creek, 1991.

Refugia: Refugia is limited in the Bridge Creek Subwatershed. However, with the completion of a fish passage project by the Oregon Department of Fish and Wildlife in 2000 at the old Bates Pond on Bridge Creek, steelhead and bull trout have access to upstream

reaches of Bridge Creek as well as other tributary streams. Conversely, pool habitat (low flow refugia), side channels (high flow refugia, and large wood (high flow refugia) were documented throughout Clear Creek in the 1992 stream survey. No data on refugia has been collected in Reynolds Creek to rate the baseline of this criteria.

Wetted Width/ maximum depth: Mean wetted width to maximum depth ratio was documented to be 10.7 (NMFS) in Bridge Creek, while wetted width to maximum depth ratios for all reaches of Clear Creek in the 1992 survey were less than or equal to 10. In the Reynolds Creek subwatershed the wetted width to maximum depth ratios in pools of 8 surveyed reaches of the John day River ranged from 5.3 to 9.5. and in 1991 those ratios were 4.6 to 8.7 in Reynolds Creek.

Streambank Condition: The bank stability for three surveyed reaches of Bridge Creek ranged from 98 to 99% stable. Whereas, only 70% of streambanks were rated as stable during the 1992 Clear Creek stream survey. However, recent observations of Clear creek indicate that the streambanks have recovered. Streambank stability in a 1992 Stream survey of North Fork Reynolds creek showed a range of 55 to 100%.

Floodplain Connectivity: The Bridge Creek channel is constrained by Highway 26 and an old railroad for most of its length. Most streams in the Clear Creek and Reynolds Creek subwatersheds are not incised channels and have overbank flows.

Change in Peak Base Flow:

Clear Creek shows the greatest increase in created openings resulting from the fire. Before the fire, 13 percent of Clear Creek's area consisted of created openings. After the fire, about 34 percent of the watershed is expected to act as hydrologic openings. Bridge Creek showed an increase of 4 percent, from 12 to 16 percent, and Reynolds Creek showed an increase of 3 percent, from 7 percent to 10 percent. The other subdrainages were not affected by the fire, and on a watershed level, the percent of current, post-fire created openings is low (11% for UMFJD, and 6% for UJD).

Drainage Network Increase: an increase in drainage network is likely to be significant in all subwatersheds with the interception and concentration of runoff with road drainage structures in combination with road location.

Road Density and Location: The existing road densities are greater than 3.0 miles per square mile in Bridge Creek subwatershed (3.4) and in Clear Creek subwatershed (3.7). The North Reynolds Creek subwatershed road density is just under 3.0 at 2.9. While Road 2635 parallels Clear Creek (Category 1) and Mossy Gulch (Category 2) Creeks within the project area this road is in good condition and rated as a low watershed risk by the Malheur Forest. Road 2635 is rated as a moderate watershed risk in its proximity to the Reynolds and North Reynolds Creek below the project area.

Disturbance History and Regime: The harvest rates for federal lands has averaged between 6%, 9%, and 14% per decade in the Reynolds Creek, Bridge Creek and Clear Creek Subwatersheds, respectively.

Table 10. Harvest by Decade in the 5th and 6th Field Watersheds of the Easy Fire Recovery Project Area

Fifth Field	Sixth Field	Total Acres	Decade of Harvest			
			<10 Years/ Percent of Total Acres	10-20 Years/ Percent of Total Acres	21-30 Years/ Percent of Total Acres	Grand Total/Perce nt of Total Acres/ Decade Mean
Upper Middle Fork John Day River		78278	4259/ 5	3681/ 5	13599/ 17	21539/ 28/ 9
	Clear creek	12484	1528/ 12	577/ 5	3008/ 24	5113/ 41/ 14
	Bridge Creek	12149	841/ 7	800/ 7	1519/ 13	3160/ 26/ 9
Upper John day River		106715	2848/ 3	5338/ 5	3721/ 3	11908/ 11/ 4
	Reynolds Creek	19915	941/5	935/ 5	1313/ 7	3190/ 16/ 6

The ECA for Clear Creek subwatershed is 8.5% and 14% for the entire Upper John Day Watershed. In the Bridge creek subwatershed forested lands less than 30 years old account for 6.5% of the subwatershed and only 0.3% of the watershed has a soil rating of severe.

Riparian Conservation Areas: The riparian conservation areas in Clear Creek and Reynolds Creek subwatersheds are relatively intact. Riparian conservation areas in the Bridge creek subwatershed have been impacted from past management activities including road construction, timber harvest, and livestock grazing. The opportunity for wood recruitment in to streams has been reduced due to the location of Highway 26.

Stream Temperature: In the four subdrainages that contain the fire area, the following streams are listed on the Oregon DEQ’s 303(d) list (year 2002) as having limitations in summer stream temperatures: Clear Creek, Dry Fork Clear Creek, Lunch Creek and Reynolds Creek. The 303(d) list indicates that these streams exceed specific temperature criteria in a seven-day average of daily maximum temperatures in the summer season. The beneficial uses affected are bull trout habitat and salmonid rearing habitat.

The table below lists the 303(d) streams and the 7-day average daily temperature maximums. Dry Fork Clear Creek is not shown, since the fire burned only 30 acres in the Dry Fork Clear Creek subwatershed, and no activities are proposed for those acres.

Table 11. Stream Temperatures – 303d Streams

Table of Stream Temperatures

Stream Site	Criteria	Data Years	7-Day Average Daily Maximum	Days > 50° F Ave.DailyMax	Days > 64° F Ave.DailyMax
Clear Creek 1 ¹	Bull trout: 50° F	1993-2001	62.0 - 64.9	79 - 111	0 - 15
Clear Creek 2 ²	Bull trout: 50° F	2000-01	57.1 - 57.5	101 -105	0
Clear Creek 3 ³	Bull trout: 50° F	2000	53.6	15	0
Lunch Creek 1 ⁴	Rearing habitat: 64° F	1999 - 2001	64.4 - 68.5	106 - 116	9 - 40
Lunch Creek 2 ⁵	Rearing habitat: 64° F	2000-01	65.8 - 66.1	113	20 - 25
Lunch Creek 3 ⁶	Rearing habitat: 64° F	2000-01	56.9 - 56.8	88 - 96	0
North Reynolds Crk ^a	Bull trout: 50° F	1994 - 2001	50.0 - 51.8	35 - 60	0
Reynolds Creek 1 ⁷	Bull trout: 50° F	1990 - 1992	62 -64	no data	no data
Reynolds Creek 2 ⁸	Bull trout: 50° F	1990 - 1992	54 - 57	no data	no data

¹ Downstream of fire area.

² Within the fire area.

³ Upstream of fire area.

⁴ Mouth of stream.

⁵ Midstream segment.

⁶ Upper segment.

⁷ Lower segment.

⁸ Upper segment.

^a Note: North Reynolds Creek is only identified as a stream of potential concern for temperature, and is not on the 303(d) list.

Streams and rivers with suspected problems are identified by the Oregon DEQ as “water bodies of potential concern.” In the Reynolds Creek subwatershed, the North Reynolds Creek is identified as a stream of potential concern for temperatures for bull trout, and is not on the 303(d) list.

The warmest temperatures for Clear Creek are in the site (Clear Creek 1) that is 3 ½ miles downstream of the fire area. Within the fire area at Clear Creek 2, the stream temperatures exceeded the bull trout criteria for more than 100 days per year before the fire. However, the riparian areas of Clear Creek within the fire area and upstream of the fire area were fairly intact before and after the fire.

In many cases, the natural stream temperatures may be above established thresholds (per April 2003 discussion with Dave Kretzing, Hydrologist – formerly at Prairie City Ranger District, Malheur National Forest).

Lunch Creek (Category 1) is downstream from the fire area. However, Easy Creek flows into Lunch Creek about 1 mile from the fire area. The upper 0.8 mile portion of Easy Creek (intermittent stream, Category 4) burned at high burn severity.

The Dry Fork Clear Creek was not effected by the fire since the burned area in the subwatershed was small, about 30 acres, and most of the those acres were low burn intensity and located away from any streams.

There were very few locations where fire actually burned to the water edge along perennial streams. Intermittent streams (Category 4) and ephemeral channels were the channels most affected by the fire.

Sediment: In a survey of Bridge Creek in 1997, the percentage of fine sediment (silt, organics, and sand) ranged from 21 to 40% (mean 33%) for the three surveyed reaches. The substrate data on percent fines is not available for the 1992 stream survey of Clear Creek. However, gravel and cobble were the dominant substrates recorded. In Reynolds Creek, high quantities of surface fines (68%) were found in a 1990 survey (Oregon Department of Fish and Wildlife 1991).

Chemical Contaminants: There are no streams listed on the state 301(d) list for chemical contamination or excess nutrients.

Physical Barriers: There were no manmade barriers noted in the 1990-1996 surveys (ODFW 1994) in the Reynolds Creek subwatershed or in the 1992 stream survey of Clear Creek. A dam on Bates Pond which blocked upstream and downstream fish passage in Bridge Creek at all flows was removed in 2000 and replaced with a fish ladder which incorporates 6-inch steps designed to provide passage for most life stages of fish.

III. Federally Listed Fish Species, Condition and Distribution

Summer steelhead (*Oncorhynchus mykiss*), an anadromous salmonid, of the Middle Columbia Evolutionary Significant Unit (ESU) was listed as threatened on 03/25/25/99 and bull trout (*Salvelinus confluentus*) of the Columbia River distinct population segment (DPS) was listed as threatened on 06/10/98. Both resident and fluvial forms of bull trout are present in the watershed, although fluvial forms are rare. Access to historic habitat for bull trout and steelhead into Lunch Creek and upper Bridge Creek only became possible two years ago when a fish ladder was built around the dam at Bates pond. These streams are capable of providing spawning and juvenile rearing habitat in their present condition (UMFJDR WA 1998).

The following table shows the known distribution of these species in the affected environment in and within two miles of the Easy Fire Recover project Boundary.

Table 12. Distribution and Miles of Habitat of Federally Listed Fish Species in the Upper Middle Fork John Day River and the Upper John Day River Watersheds.

Watershed	Subwatershed	Stream	Bull Trout	Steelhead
Upper Middle Fork John Day	Clear Creek	Clear Creek	2.88	3.64
	Bridge Creek	Lunch Creek	3.64 <u>1/</u>	3.51
Upper John Day River	Reynolds Creek	Mossy Gulch	1.06	1.06
		North Reynolds Creek	7.37	3.57

1/ Habitat potentially available

The summer steelhead runs in the John Day River Basin are composed entirely of native stocks. The number of anadromous adults returning to the entire John Day Basin range on a yearly basis from 4,000 to 25,000 steelhead. The Middle Fork John Day River (MFJDR) subbasin produces

30 percent of the wild steelhead of the John Day River Basin (Oregon Water Resources 1991). In particular, the MFJDR has historically contributed approximately 23% of the total run of steelhead in the John Day River Basin (USFWS and NMFS 1981). The estimated escapement to the John Day basin is shown in table below and has averaged 13,998 adults between 1987 and 1997 for steelhead.

Table 13. Estimated Spawning Escapement of Summer Steelhead to the John Day Basin.

Year	Summer Steelhead Trout
1997	5,711
1996	5,658
1995	3,900
1994	9,300
1993	7,200
1992	17,100
1991	7,200
1990	12,000
1989	9,600
1988	36,400
1987	34,300
Mean	13,988

Note: Data from Unterwegner pers. Comm., Unterwegner and Gray (1995, 1996, 1997)

Condition and Distribution of Fish Species

Upper Middle Fork John Day River Watershed

Bull trout

Bull trout are reduced in both numbers and distribution within the MFJD River subbasin. Bull trout were found prior to 1990 in Indian Creek, Big Boulder Creek, Butte Cr, Davis Creek, and Vinegar Creek. Bull trout were also found in the mainstem MFJD below Indian Creek and from Clear Creek upstream to Phipps Meadow. It is assumed that interchange between all John Day River metapopulations occurred in the past. Fluvial life history forms once had access to the Columbia and Snake Rivers and may have used these rivers for rearing habitat (Buchanan et al. 1997).

Currently, bull trout are found in the Big Creek, Granite Boulder Creek, and Clear Creek drainages. These subpopulations constitute the MFJD metapopulation (Buchanan et al. 1997).

The mainstem MFJD serves as a seasonal migration corridor for the three subpopulations. It is likely that some members of these populations move into the main MFJD River and possibly other tributaries when water temperatures are cooler, but currently it is unknown as to the extent of connectivity between the three populations of the MFJD.

Clear Creek is the only stream in the UMFJDR watershed with documented Bull trout presence. However, it is assumed that use has occurred or will soon in Lunch Creek with access provided two years ago around Bates mill on Bridge Creek.

Status of the upper MFJD subpopulation was classified as "probably extinct" in 1992 (Ratliff and Howell 1992). Status for the Granite Boulder and Big Creek subpopulations was classified as at "high risk of extinction" in 1992 (Ratliff and Howell 1992). These classifications remain unchanged in 1997 (Buchanan et al. 1997). The Clear Creek subpopulation was classified as at "high risk of extinction" in 1997 (Buchanan et al. 1997).

Outside influences have affected the viability of bull trout in the UMFJDR watershed. These include: 1) isolation from other Columbia River metapopulations by dams. 2) fragmentation of the John Day bull trout metapopulation into three isolated populations, and 3) isolation of subpopulations in the Middle Fork subbasin due to poor habitat in the Middle Fork John Day River.

Very little data is available to determine the size of the bull trout subpopulation in Clear Creek. In 1992 surveys were conducted by Oregon Department of Fish and Wildlife (ODFW) which included the sampling of bull trout in two locations on Clear Creek. Results of the survey estimated a spawning density of 17 bull trout per mile. Estimating a minimum of three miles of habitat the estimated population would be 51 spawners. This estimate is rough, as the sampling was not randomized nor conducted without block nets (Claire and Gray 1993).

Density surveys of bull trout conducted in Big Creek and Granite Boulder Creek estimated 625 spawning age bull trout per 5 miles and 375 spawning age bull trout per 0.75 miles of habitat in Big Creek and Granite Boulder Creek, respectively, in 1992. Given these density estimates and estimated miles of habitat, an additional 1,000 spawning age bull trout are estimated to be a part of the meta-population. These surveys were not conducted with the intention of estimating population size. The estimates presented are merely extrapolations based on available surveys and do not have statistical validity to be expected if the original sampling objectives were to estimate actual population size.

Migratory habitat in the upper Middle Fork of the John Day River is poor due to seasonal thermal barriers and lack of complex pool habitat (Claire and Gray 1993) and may limit movement between subpopulations in the subbasin.

Summer Steelhead

Summer steelhead runs in the John Day River Basin are composed entirely of native stocks. However, hatchery fish stray into the John Day Basin from the Columbia River (Unterwegner and Gray 1997). Steelhead are present in eight streams of the UMFJDR watershed. The Middle Fork John Day has historically contributed approximately 23% of the total run for the Basin (USFWS and NMFS 1981). Estimated escapement to the John Day Basin has averaged 13,988 adults between 1987 and 1997 (see table of estimated spawning escapement of summer steelhead to the John Day Basin).

Upper John Day River Watershed

Bull trout

Historical information prior to 1990 reveals that isolated sightings of bull trout were recorded only in Dads Creek, Dixie Creek, and Pine Creek of the UJDR watershed.

The John Day River metapopulation is composed of bull trout in the Prairie City and Upper John Day River watersheds. A determination was made that the bull trout populations in the two watersheds have little chance for connection to other bull trout populations in the John Day River system, thus constituting a separate metapopulation. The Reynolds Creek subwatershed of the UJDR encompasses the southwest edge of the Easy Fire Recovery Project area. Bull trout are found in two streams within this subwatershed that parallel the southwest project area boundary and are potentially affected by project activities; North Reynolds Creek and Mossy Gulch Creek. Mossy Gulch Creek flows along the west side of the project boundary while North Reynolds Creek flows along the south side.

The John Day River metapopulation is rated at low risk of extinction (Buchanan et al. 1997). Oregon Department of Fish and Wildlife research is currently implementing a life history study on bull trout in this watershed. Spawner density was recorded as 0 by ODFW in 1991. Size ranges of bull trout sampled at that time ranged between 30 and 140 mm indicating resident adults were not present or present at very low numbers. In the same year spawner density in North Fork Reynolds Creek where at least one redd has been found was recorded at 15. During this survey bull trout sizes ranged from 90 to 230 mm indicating multiple age classes were present. ODFW estimated the total spawner density in the Upper John Day River to be a minimum of 304 in 1990 (ODFW 1991). Size ranges of bull trout with that survey ranged from 60 to 300 mm indicating all life history stages were present.

Summer Steelhead

Summer steelhead runs in the John Day River Basin are composed entirely of native stocks. However, hatchery fish stray into the John Day Basin from the Columbia River (Unterwegner and Gray 1997). Differentiating between the “anadromous” streams and “non-anadromous” streams can be extremely difficult, as there is much overlap between the two. Because habitat requirements change as fish grow from a fry to an adult (Hartman and Brown 1987), this often moves anadromous species into what is considered resident trout habitat. During low water periods, juvenile steelhead often migrate upstream into the smaller, colder resident fish tributaries. At times, adult steelhead will travel so far up into a system that they will spawn in intermittent streams (Redband Trout Workshop 1993).

IV. Description of the Federal Actions

The Easy Fire Recovery Project area location is depicted in Figure 3 and listed fish distribution in Figure 4 and 5. Malheur National Forest Plan allocations are shown in Figure 6. The Easy Fire Recovery Project consists of the following activities:

1. Salvage Regeneration Harvest on 2,667 acres

2. Post and Pole Salvage with natural regeneration on 153 acres.
3. Rehab of skid trails in all ground based yarding units (subsoiling where the soil is suitable, waterbarring, and erosion control seeding and fertilization).
 4. Rehab of 1.5 miles of temporary spur roads used for harvest on this project (subsoiling, waterbarring, and erosion control seeding and fertilization)
5. Maintenance of 64.3 miles of haul route roads
6. Reforestation within harvest units on 2,560 acres
7. Reforestation outside harvest units on 1,358 acres
8. Animal damage control (Big Game Repellant) on 3,918 acres
9. New wildlife gates on Rd. 2600391 (closes 5.2 miles)
10. Fuel treatments:
 - a. Grapple pile and burn piles on 780 acres
 - b. Lop & Scatter on 850 acres
 - c. Whole Tree Yarding on 828 acres
 - d. Yard Limbs with Log on 311 acres
 - e. Hand Pile and burn piles on 52 acres

Most of these activities will not affect stream conditions. Major ground disturbing activities are described in the following narrative.

Timber Harvesting and Yarding

This project will harvest 52 units for a total of 2,820 acres. No harvest will be conducted within RHCAs or on sites of high BAER burn severity adjacent to streams. Only two percent (57 acres) of the area to be harvested is considered sensitive due to locations on steeper slopes (31-60%) that were severely burned (BAER burn severity High). The location of these areas are generally fragmented small areas at least 0.25 miles from streams. Because units located on moderate to steep slopes (>31%) with high BAER burn severity and adjacent to Category 1 and 4 streams are eliminated with the preferred alternative (Alternative 3), which was designed to minimize impacts to fish, water, and soil resources, it is anticipated there will be no measurable impacts to fish or fish habitat that result from project activities and that there will be no resultant change in baseline conditions.

The majority of harvest will occur in Clear Creek subwatershed (1,890 acres), followed by 525 acres in Reynolds Creek subwatershed and 405 acres in Bridge Creek subwatershed. The principal yarding method will be tractor (1,608 acres) with a substantial amount of helicopter yarding (910 acres) utilized as well. Only 302 acres will be cable yarded. All units are located on slopes with a low probability of mass failure.

Table 14. Easy Fire Recovery Project Harvest Unit Information.

Unit	Acres	Treatment	Logging System	Unit Elev.	Slope	Aspect	Mean Tree Age *	Volume (MBF)	Trees per Acre (merchantable)		Mean Tree Dia. (in) (doug)	Miles of Road Construction	
									Pre	Post***		System	Temp***
1	5	Salvage	Tractor	5350	20	W		26	60	30	10	0	0
2	14	Salvage	Skyline	5300	35	W		40	65	5	10	0	0
3	60	Salvage	Skyline	5200	40	W		17	60	30	11	0	0
4	10	Salvage	Skyline	5000	45	W		28	60	5	10	0	0
5	9	Salvage	Tractor	5500	10	NW		25	60	30	10	0	0
6	7	Salvage	Tractor	5450	10	NW		37	60	5	10	0	0
7	32	Salvage	Tractor	5550	15	N		128	60	5	11	0	0.5
8	9	Salvage	Tractor	5550	30	W		25	60	30	10	0	0
9	158	Salvage	Tractor	5400	20	SW		478	40	13	15	0	0
10	14	Salvage	Skyline	5350	40	W		41	54	20	15	0	0
11	15	Post&Poles	Tractor	5550	30	N		27	70	5	9	0	0
13	34	Salvage	Heli.	5850	45	SW		149	40	20	20	0	0
14	31	Salvage	Heli.	5850	30	N		161	80	40	9	0	0
15	85	Salvage	Heli.	6000	45	SW		315	60	30	18	0	0
16	61	Salvage	Heli.	5450	40	SW		185	30	10	9	0	0
18	11	Post&Poles	Tractor	5200	15	N		20	80	20	7	0	0
19	75	Salvage	Tractor	5200	30	N		391	75	40	12	0	0
20	351	Salvage	Heli.	5500	25	NE		2089	65	20	13	0	0.3
23	139	Salvage	Tractor	5900	15	N		724	51	15	11	0	0.2
24	15	Salvage	Tractor	6100	15	N		78	90	30	11	0	0
25	17	Salvage	Tractor	5950	30	W		89	68	24	11	0	0
26	31	Salvage	Tractor	6100	20	W		161	80	20	11	0	0
27	14	Salvage	Skyline	5650	40	W		83	75	40	11	0	0
28	134	Salvage	Tractor	6300	15	E		698	62	15	11	0	0

Unit	Acres	Treatment	Logging System	Unit Elev.	Slope	Aspect	Mean Tree Age *	Volume (MBF)	Trees per Acre (merchantable)		Mean Tree Dia.(in) (doug fir)	Miles of Road Construction	
									Pre	Post**		System	Temp***
29	28	Salvage	Skyline	5750	40	SW		145	73	20	10	0	0
31	90	Salvage	Tractor	6350	15	NW		536	100	15	11	0	0
32	116	Salvage	Tractor	6350	20	E		604	97	15	11	0	0
33	13	Salvage	Tractor	6250	30	NE		68	30	5	11	0	0
34	46	Salvage	Heli.	6000	25	NE		239	105	15	12	0	0
35	203	Salvage	Heli.	6000	20	N		1205	57	5	12	0	0
36	78	Salvage	Tractor	6300	15	NE		4060	65	10	13	0	0
37	30	Post&Pole	Tractor	6400	15	NE		53	70	5	9	0	0
39	27	Salvage	Tractor	6400	15	N		141	57	5	9	0	0.5
40	97	Post&Pole	Tractor	6400	10	SE		172	150	50	8	0	0
41	153	Salvage	Tractor	6350	20	SW		911	84	20	12	0	0
42	131	Salvage	Tractor	6200	25	SW		549	142	60	13	0	0
43	30	Salvage	Tractor	6450	10	Flat		156	30	3	12	0	0
44	27	Salvage	Tractor	6400	15	SW		161	85	40	14	0	0
45	99	Salvage	Tractor	6250	20	SW		515	91	8	12	0	0
47	44	Salvage	Heli.	5900	45	S		124	65	10	16	0	0
48	6	Salvage	Heli.	5750	45	W		17	54	30	14	0	0
49	42	Salvage	Skyline	5550	50	S		118	50	20	12	0	0
50	5	Salvage	Skyline	5500	45	SW		14	54	27	14	0	0
51	3	Salvage	Skyline	5500	45	SW		9	54	15	14	0	0
55	18	Salvage	Heli.	5550	45	W		52	47	15	12	0	0
56	8	Salvage	Tractor	5750	30	SW		23	40	0	10	0	0
57	52	Salvage	Tractor	6100	25	SW		158	50	20	16	0	0
58	31	Salvage	Heli.	5700	40	SW		94	60	15	16	0	0
59	28	Salvage	Skyline	5350	50	SW		96	30	5	16	0	0
60	26	Salvage	Skyline	5600	40	W		73	65	25	12	0	0
61	6	Salvage	Skyline	5350	45	SW		22	30	10	15	0	0
66	52	Salvage	Skyline	5700	30	NE		257	40	0	10	0	0
Total	2,820							16,587				0	1.5

* Mean Age for each unit is unavailable information. Stand exams for the area did not record ages. The mean ages for merchantable sized trees in these units varies from approximately 90 years to 150 years.

**The post harvest trees per acre is not a prescribed number of leave trees, rather it is based on an estimate of the number of live trees per acre that will be left after the dead and dying trees are harvested.

***The temporary spur road for unit 20 will also be used for unit 23.

The temporary spur road for unit 7 will also be used for unit 6.

The temporary spur road for unit 39 will also be used for unit 40.

Temporary Road Reconstruction (reopening of decommissioned roads) and Construction (temporary logger spurs only)

The timber management portion of the project does not include specified road reconstruction activity.

Road activities would include routine haul road maintenance, except for the addition of gridrolled aggregate on 0.25 miles of the 2600026 Road (See Figure 7), and the construction and hydrologic closing of temporary roads only. Those roads used for haul that cross streams and/or are located within riparian areas are shown in Table 15. Timber sales provide a source of funding which is used to improve roads; non-timber road maintenance funding is limited and these road improvements may not occur if timber sale projects are not implemented. The general result of road maintenance is a road system that causes less sedimentation, and poses reduced risk to listed fish and water quality. Haul road maintenance (approximately 64.3 miles total) may have short-term impacts from sediment during and immediately after implementation from re-grading roads, cleaning plugged culverts and cleaning blocked ditch lines, but is a long term benefit thereafter by improving drainage, reducing road failure potential at stream crossings and reducing chronic sediment input to streams. The potential to impact individual fish by haul and maintenance activities is minimal since culvert replacements and removals, a common source of sediment to streams, will not occur with this alternative.

Alternative 3 would use the following water sources for dust abatement and reconstruction:

- 1) Clear Creek, just north of Highway 26 and east of Blue Mountain Work Center, located off of Rd. 2600878 on Rd. 2600877. The legal description is T11S, R35E, Section 33, NE $\frac{1}{4}$ of the NE $\frac{1}{4}$.
- 2) Easy Creek, just off of Highway 26 on Rd. 2600026. The legal description is T12S, R35E, Section 7, NW $\frac{1}{4}$ of the NW $\frac{1}{4}$.
- 3) Clear Creek, near the junction of Rd. 2635 and Rd. 2640077. The legal description is T12S, R35E, Section 22, SW $\frac{1}{4}$ of the SE $\frac{1}{4}$.

Hazard trees would be cut along all open roads and closed roads that are opened for implementation of Alternative 3. Hazard trees in units would be removed using the same logging system as the unit while hazard trees outside units would be removed with equipment operated only on the road prism. Hazard trees would be felled but left onsite inside RHCAs to serve as down woody debris. No impacts to fish or fish habitat are expected due to the use of self-loading log trucks or other heavy equipment, which would be restricted to operation on road prisms.

No change in road densities would occur to included subwatersheds as no new system roads would be constructed (see Easy Fire Recovery Project Area Road Densities). The preferred Alternative 3 would construct about 1.5 miles (about 1.4 miles within the project area and about 0.1 miles outside the project area) of temporary road to allow access to harvest. The total constructed temporary road length is the least of any action alternative. Of these temporary road miles, about 1.0 miles are decommissioned roads that would be re-opened as temporary roads, and 0.2 miles are existing dozer fire line (0.1 mile within project area and 0.1 mile outside project area). These temporary and reopened decommissioned roads would remain for 1-2 years until harvest activities are completed. All miles of temporary road would be stabilized and decommissioned after harvest activities, specifically; temporary roads constructed or

reconstructed for the project will be closed with a long-term, active closure technique immediately following the season of harvest. Long-term active closure involves the removal of culverts, subsoiling the roadbed, building water diversion structures (waterbars/dips) where necessary, and blocking access to the old road prism.

Table 15. Haul Roads Proposed for Timber Transportation that Cross or are Located Within RHCAs.

Road Number	Surface Type	Type of Road Reconstruction/ Miles of Road Reconstruction	Miles of New Aggregate Surfacing	Number of Stream Crossings		Miles of Existing Road Within Perennial Stream RHCAs (Miles)
				LFH ¹	Additional Perennial	
2600022	Improved Native	N/A	0	1	1	0.1
2600026	Aggregate	N/A	0.25	0	0	1.5
2600036	Improved Native	N/A	0	0	0	0.1
2635000	Aggregate	N/A	0	1	0	6.0
	Improved Native	N/A	0	1	0	3.4
	Native	N/A	0	0	1	0.2
2635206	Improved Native	N/A	0	0	1	0.6
2635769	Improved Native	N/A	0	0	0	0.3
2635780	Native	N/A	0	0	1	0.1
Totals		0	0.25	3	4	12.3

LFH ¹ = Listed fish habitat

Timber will be transported from the project area on the roads as shown on Figure 7, and described in Table 15. Transport is only allowed when road surfaces are dry (seasonal restriction) or frozen. Roads used for transport cross a maximum of 7 perennial streams, depending upon the haul route. Most perennial stream crossings are via improved native surfaced (spot rocked) roads over habitat not occupied by listed species. Approximately 12.3 miles of haul road are located within RHCAs associated with perennially flowing streams; the remaining roads are located outside of the RHCAs (Table 15).

The potential for sediment flow relating to unit harvest activities will be confined to movement thru the Clear Creek, Reynolds Creek, North Reynolds Creek, Mossy Gulch Creek, and the Lunch Creek systems. Only one major haul route parallels at least part of the first three streams, Road 2635. However, this road is in good condition and rocked at stream crossings and along riparian areas. Also there is a vegetation between the roads and streams, further protecting the aquatic resource.

Easy Fire Recovery Project Area Road Densities

Foreseeable Condition

Reynolds Creek Subwatershed - A site specific access travel management plan was completed for the Reynolds Creek subwatershed in the Mossy Analysis (Decision signed 1/22/97). The Mossy Decision notice states that approximately 32.4 miles of road would be closed by gate, obliteration, or earthen barrier. This would reduce the road density to 2.8 mi./sq. mile in summer range and 2.3 mi./sq. mile in winter range. Prior to the Easy Fire a portion of the Mossy access plan had been implemented. It is foreseeable that the Mossy access plan will continue to be implemented in the Reynolds Creek subwatershed.

Bridge Creek Subwatershed- The Punch Timber Sale Environmental analysis (decision signed 8/16/91) would close approximately 17 miles in the Bridge Creek subwatershed. The Punch analysis showed the existing road density at 6.28 mi./sq. mile in the Bridge Creek subwatershed. The Punch access management decision would reduce the road density below 5.00 miles per square mile in the Bridge Creek subwatershed. The Punch access plan was partially implemented at the time of the Easy Fire. It is foreseeable that the Punch access plan will continue to be implemented in the Bridge Creek subwatershed.

Clear Creek Subwatershed -An access travel management plan was developed in the Clear Analysis (Decision signed 1996) for the entire Clear Creek subwatershed. The Clear Creek Analysis modified the Grouse Timber Sale access plan (signed 8/91). The Clear Creek decision would reduce the road density to 3.2 mile/sq. mile year round and 2.7 mi./sq. mile with seasonal closure of Road 2600391. Several miles of road closures and decommissioning have been already implemented in the Clear Creek subwatershed. This Clear decision was superceded by bull trout consultation where additional native surface roads were identified to be closed. Consultation for bull trout would reduce the road density to 2.9 miles/sq. mile for most of the year. Road 2600391 would be closed seasonally for the fall and winter months reducing the road density to 2.4 miles/sq. mile seasonally. The proposed road density in the Clear Project Bull trout BA should be the foreseeable condition for the Clear Creek subwatershed.

Existing Condition

Reynolds Creek- The existing road density at the time of the Mossy analysis was estimated to be 4.86 mi./sq. mile of federal land. This figure included both winter range and summer range. Since the Mossy decision was signed some road closures have been implemented in the Reynolds Creek subwatershed. Currently the INFRA data base shows the road density for the subwatershed at 2.9 mi./sq. mile. The data in INFRA is currently incomplete, and will be field verified and updated for the final EIS. Some existing closed roads were re-opened for fire suppression activities. The status of roads opened for fire suppression activities is currently not available.

Bridge Creek Subwatershed- Several road closures have been implemented in this subwatershed as part of the Punch Timber access management Plan. The Upper Middle Fork Watershed Assessment (completed in 1998) estimated the road density at 3.90 miles per square mile in the Bridge Creek subwatershed. The existing data in the INFRA data base shows the current road density for the subwatershed at 3.4 miles per sq./mile. Looking at the data it appears that this estimate is fairly close, but will need to be field verified for the Final EIS. This includes the status of closed roads opened for fire suppression activities.

Clear Creek Subwatershed- The existing road density at the time of the Clear Analysis was

estimated to be 4.05 mi./sq. mile. This included approximately 12.7 miles of road within the subwatershed that were to be closed in the Punch and Grouse Timber sales. The Punch and Grouse Timber sale closures were probably not implemented at this time, so the actual road density was probably higher. In 1998, the Upper Middle Fork Watershed Assessment (1998) estimated the road density to be 4.76 mi./sq. mile in the Clear Creek subwatershed. Since 1998 several road closures have been implemented in the subwatershed. The data in INFRA currently shows the road density at 3.7 mi./sq. mile. It appears that this estimate may be high knowing that prior to the Easy Fire several miles of road were closed or decommissioned. At the time of the Easy fire we were waiting for timber sales to close to complete the remaining closures. Several of the closure devices (such as gates) were already installed, and were to be closed once sales were completed.

Prescribed Fire

Prescribed fire used for fuel treatment in this project will consist only of burning piles. There is no broadcast burning planned at this time for any portion of the project area.

Riparian areas would not be affected by fire, as fuel treatments would only occur within harvest units, which are all outside the RHCA's.

Tractor yarded units: About 828 acres would be whole tree yarded. Limbs will be removed at the landings and burned in piles. About 780 acres would be grapple piled (thumb and shovel) and the piles would be burned.

Skyline yarded units: About 250 acres of skyline units would have yarding of logs with limbs attached. Limbs will be removed at the landings and burned in piles. One skyline unit (52 acres) would have yarding with tops attached - tops would be removed at the landings and burned in piles. In addition, the 52 acre unit would be hand piled and the piles would be burned.

Helicopter yarded units: All 910 acres of helicopter units would have lop and scatter treatment to reduce the fuel bed depth to less than 18", with no burning involved.

Stand Prescriptions:

Salvage/Regeneration units (2,667 acres): Only fire-killed trees and trees expected to die as a result of fire injury would be removed (see Appendix B of the DEIS for more information on trees to be removed). Live trees that would jeopardize the safety of the harvest operations would also be harvested. Incidental live trees may also be removed during road building and landing construction. One to two snags per acre would be left within harvest units to provide for down woody material requirements. Snag retention requirements will be met by leaving large patches of snags (outside of harvest units), ranging in size from 100 acres to 570 acres, totaling 1524 acres. Since snags would not be distributed on a 40 acres basis, an amendment to Forest-wide Standard and Guidelines would be needed.

These units would be planted with western larch, ponderosa pine, western white pine, and Douglas-fir (Douglas-fir would not be planted in Armillaria root rot centers)

Post and Pole units (53 acres): Same as Salvage/Regeneration units except composition of units is mostly post and pole sized lodgepole pine and no planting would occur. It is expected that natural regeneration of lodgepole pine will be sufficient to reforest these units. Only fire-killed

and trees expected to die as a result of fire damage would be removed, with exceptions as noted above. Two to three snags per acre would be left within units to meet down wood requirements. Snag retention requirements would be met the same as with Salvage/Regeneration units.

V. Effects of the Actions on Matrix Indicators

The potential effects that the Easy Fire Recovery Projects may have on the matrix indicators was analyzed at three different scales: effects to site specific condition, effects to listed fish habitat, and effects to the overall 6th field watershed conditions. The site-specific analysis focuses on the immediate direct effects to each indicator. This scale of analysis is the most sensitive, effects will be noted here where they might be diluted or eliminated before they effect listed fish habitat or affect the 6th field watershed condition. An example of a site-specific effect might be analyzing the effect to a pool located immediately downstream from a culvert replacement. This level of effects analysis is important in that it identifies all sources of potential cumulative or aggregate effects and sources of indirect effects to listed fish habitat or 6th field watershed condition. Secondly, effects to listed fish habitat are addressed. This helps determine direct and indirect effects to the listed species, and can help in determining if a project is likely or not likely to adversely affect the species. Then the effects to the 6th field watershed are assessed. Very rarely would a project be of the magnitude or duration that it would cause a change in existing condition at this large-scale. Table 20 summarizes the overall effects to each indicator at these three scales.

Matrix Indicators With A High Risk of Being Adversely Affected:

Temperature Determination:

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Maintain	Maintain	Maintain

The implementation of the Easy Fire Recovery projects will not affect stream shade or stream flow to an extent where stream water temperature would be increased. Timber projects will maintain the existing condition at all scales.

Rationale:

Utilization of PACFISH and Malheur Forest Plan amendment #29 recommended Riparian Habitat Conservation Area (RHCA) widths (300-feet on Category 1 (fish-bearing, perennial), 150-feet on Category 2 (perennial, non fish-bearing), and 100-feet on Category 4 (intermittent) streams in harvest units located in the vicinity of bull trout and summer steelhead habitat would protect water quality in Clear Creek, within the Easy Fire Recovery Project boundary, and in Lunch Creek, Mossy Gulch Creek, Reynolds Creek, and North Reynolds, which are adjacent to the project area boundary. There will be no harvest or prescribed fire activities conducted within RHCAs. There is also no temporary road construction within RHCAs. Consequently, no alteration of available stream shade will occur on perennial or intermittent streams near listed species habitat. The seasonal nature of intermittent channels (fall, winter, spring) within the project area and low ambient temperatures present during seasonal flow is not expected to contribute to increases in water temperature. Harvest activities are expected to have no effect on the either bull trout or summer steelhead or the stream temperature of their habitat.

Sediment

Determination:

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Short-term Degrade	Maintain	Maintain

The Easy Fire Recovery Projects will likely cause a very small increase in sediment delivery rates to streams within the watershed upstream of habitat occupied by listed fish. The risk that this slight increase in sediment will affect sediment levels in streams potentially utilized by listed fish is very low. This will lead to a short-term degradation of the indicator at the site-specific level. Overall, it is expected that the positive effects from road improvements associated with these projects will result in a long-term reduction in road origin sediments. Aquatic habitat contributing to the life history needs of bull trout and summer steelhead will be maintained.

Rationale:

Although the probability is small, there is a slight potential for sediment to enter streams directly from road crossings and haul within riparian areas. This potential for increases in turbidity through colloidal suspension of clay particles associated with hauling activity will be mitigated through seasonal (dry weather) and over frozen surface hauling restrictions. Where hauling occurs on road surfaces that become dusty during summer hauling, watering of the road surface will occur. Mitigation measures, such as dry weather haul and helicopter yarding, are designed to minimize transmission of fine sediments potentially originating from timber harvest activities. Also, the roads are currently in good condition and the road density within Clear Creek subwatershed will be reduced with the proposed action, resulting in a reduced potential for sediment to enter streams.

No significant increase to turbidity is expected in association with harvest activities as there will be no harvest within RHCAs. RHCA widths are sufficient to protect waterways and mitigation measures are designed to reduce transportation of fines. No increase in levels of cobble embeddedness is expected to occur. Also the proposed action alternative has been designed to not perform harvest activities on moderate or steep slopes (>31%) that burned with high BAER burn intensity and are adjacent to fishbearing streams (Category 1), consequently limiting the potential for sediment input. Units adjacent to Clear Creek, the only Category 1 stream within the project area, would be harvested with either skyline or helicopter yarding methods dependent on ground slope. Tractor yarding in other areas of the project is limited to slopes less than 35% and the designation of such units is only given with consideration of soil type and condition. It is expected that due to the spatial location (Table 16) and low magnitude of the anticipated effects, sediment moving into stream channels due to these projects will not reach streams potentially utilized by listed fish in significant quantity, and the condition of listed fish habitat will be maintained. The effect to this indicator is not of sufficient magnitude to affect overall condition of the 6th field watershed either negatively or beneficially, therefore the condition will be maintained.

Ground disturbance occurring with harvest equipment will be located sufficient distances from stream channels to avoid introduction of fine sediments. Mitigation methods prescribed for timber harvest operations will protect waterways from potential sedimentation sources, particularly those sources associated with temporary roads and skid trails, hauling, and seasons of use.

Table 16. Species Proximity to Timber Management Units and Flow Routes.

Unit	Proximity to habitat (miles)	Flow Route from Unit by Stream Class	Unit	Proximity to habitat (miles)	Flow Route from Unit by Stream Class
1	0.58	4,1	42	1.40	4,2,1
27	1.20	4,1	45	1.55	4,1
29	1.28	4,1	49	0.53	2,1
30	1.53	4,1	50	0.53	2,1
31	2.43	4,1	55	0.78	4,2,1
32	1.23	4,2,1	58	0.98	4,2,1
34	0.80	4,2,1	59	0.65	2,1
35	0.90	4,2,1	60	1.20	4,2,1
41	2.58	4,1	61	0.88	2,1

Road treatments are proposed on current sources of potential road origin sediments with the decommissioning of 1.5 miles of temporary roads and closure of 5.2 miles of road. Decommissioning will consist of installing waterbars, maintaining existing drainage structures and maintaining a gate or berm closure. Closure will consist of closing roads currently open with a gates, and maintaining existing drainage structures. Closed roads would be subject to administrative travel if gated and periodic use for land management activities. Some reduction in long-term sources of road-derived sedimentation is expected with road storage and decommissioning. Proposed road treatments are low in ground disturbing activity, comparable to road maintenance activity during implementation. Implementation of action alternatives will not adversely affect aquatic habitat quality

There will be no culvert replacements associated with road treatments. Road haul maintenance will likely result in impaired water quality through short-term increases in turbidity. Mitigation measures to reduce potential transmission of sediment include requiring hauling activities during dry periods, temporary road removal, and bringing roads to an upgraded condition to accommodate hauling activity. All areas of exposed soil associated with road haul maintenance will be seeded with non-invasive cereal grains and/or native perennial species. The downstream effects of turbidity on habitat important to summer steelhead and bull trout will be negligible. The fine clay particles that compose the majority of sediment remaining suspended are expected settle out in low velocity habitat located upstream of summer steelhead and bull trout habitat.

Large Woody Material

Determination:

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Maintain	Maintain	Maintain

The Easy Fire Recovery Projects are expected to maintain large woody material at all scales.

Rationale:

The Easy Fire Recovery Projects do not enter RHCAs riparian reserves. Consequently, no treatment of riparian stands adjacent to summer steelhead and bull trout will occur. The potential for harvest treatments to influence the availability of large wood in downstream habitat occupied by listed species is negligible due to the fragmentation of flow routes by natural and human-made barriers and the distance of harvest units to listed fish habitat. No harvest will occur within stands on unstable slopes or on moderate to steep slopes (>30%) where BAER burn fire intensity was high and adjacent to streams, thus avoiding adverse effect on existing in-stream woody material levels or recruitment rates to area streams .

Peak/Base Flows

Determination:

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Maintain	Maintain	Maintain

It is unlikely that the implementation of the Easy Fire Recovery projects will cause changes in peak and base flows. If minimal changes were experienced, they would not be expected to reach a level where they would be measurable, nor would a minor increase result in adverse effects such as accelerated stream bank erosion or channel scouring. A negligible increase in peak flow is not expected to result in degradation of this indicator at the site-specific level. These effects are not expected to reach the magnitude where listed fish or their habitat would be affected and would not be measurable at the 6th field scale. No change in existing condition is expected at the 6th field watershed level.

Rationale:

Table 17. Pre- and Post-Fire Created Hydrological Openings by Subwatershed

(for Forest Service lands only)

Subwatershed (SWS)	SWS Acres	Pre-Fire Openings (acres)	Pre-Fire % SWS in Openings	Fire Created Openings – Vegetation Severity (acres)		Post-Fire % SWS in Openings
				Severe	Moderate	
Bridge Creek	12,149	1,505	12	458	64	16
Clear Creek	12,484	1,602	13	2,037	1,264	34
Reynolds Crk	19,915	1,400	7	425	415	10

Based upon the amount of created openings and the current total road density (see Total Road Density), Clear Creek subwatershed is the area most likely to experience increased peak flows, with earlier peaks. The increased peak flows would be mainly from the intermittent tributary areas which were high burn severity. However, the stream/riparian habitat along the main stem Clear Creek was little affected by the fire, and is characterized by large numbers of large woody debris, highly stable banks and good channel complexity and vegetative cover. Any expected small increases in peak water flow are not likely to adversely affect the main stem stream channel conditions.

Less than 5% of the Easy Fire area experienced significantly reduced infiltration. The amount of increased runoff in the high burn severity areas was expected to be 5-10% (from Bright and others 2002).

Within Bridge Creek subwatershed, the upper 0.8 mile of the Easy Creek drainage burned at high severity. Any increase in peak flow related to the fire or current road densities is expected to be low, since the fire only increased the openings 4%. Effects downstream would be minimal, since Lunch Creek contains high levels of woody debris, good complexity and unaltered riparian vegetation.

For the Clear Creek and Bridge Creek subwatersheds, Class I Water Yield soils make up 77% and 69% of the subdrainages. Class I Water Yield soils have high detention storage capacity and low rates of runoff. Class I soils are important in sustaining high base flows due to the large volume of water held in detention storage in the soil mantle. As a result of the high proportion of class I soils, the subwatersheds are able to tolerate extreme peak flow events without serious environmental effects, except under unusual circumstances, such as frozen soils with a rain on snow event.

Table 18. Water Yield Classes

Subwatershed (SWS)	Water Yield Class (Acres and Percent of Subwatershed)					
	Class I	Class I-II	Class II	Class II-III	Class III	Total
Bridge Creek	8,373	2,608	247	375	546	12,149
Percent of SWS	69	21	2	3	4	
Clear Creek	9,594	2,822	68	-	-	12,484
Percent of SWS	77	23	1	-	-	
Reynolds Creek	10,625	6,134	-	-	706	17,465
Percent of SWS	61	35	-	-	4	

With predicted increases in runoff for the Easy Fire area, changes in channel morphology and complexity are expected to be minimal overall in the main stream channels. Over time, as runoff decreases from the recovery of vegetation, the burned channels would recover to prefire

conditions.

None of the alternatives would have measurable changes or effects on peak flows or water yield from current conditions. The road density would not change in any alternative, since there is no new permanent road construction proposed in the action alternatives. Road effects on peak flows would not change.

A minimal, but not measurable increase in annual water yield would result from the removal of dead and dying trees because of the changes in precipitation interception. The increase resulting from harvest activities would not be observable from post-fire levels, since the dead and dying trees would already have a low amount of retaining tree canopy.

The predicted small increase in peak flow from the tributaries of Clear Creek is not likely to adversely affect the main stem stream channel conditions. The stream/riparian habitat along Clear Creek was little affected by the fire, and is characterized by large numbers of large woody debris, highly stable banks and good channel complexity and vegetative cover.

**Road Density,
Location, Drainage
Network**

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Short-term Degrade	Maintain	Maintain

Determination:

Activities associated with timber management propose to construct temporary roads and reopen decommissioned roads; this will cause a short-term increase in road density. All temporary roads will be constructed, utilized during the project and then removed. Overall, the implementation of these projects will lead to a minor short-term degradation of this indicator at the site-specific level. Temporary roads are outside of the Riparian Reserve and are not located near streams potentially occupied by bull trout or summer steelhead, therefore the existing condition is expected to be maintained at the habitat and 6th field watershed scale. Due to the small magnitude of the increase in temporary road length, this indicator will be maintained at the habitat and 6th field scale.

Rationale:

No change in road densities would occur to included subwatersheds as no new system roads would be constructed. The Easy Fire Recovery project temporary roads are listed in Table 14. The majority of proposed temporary roads are located in non-listed species portions of the project area, at a distance sufficient to minimize potential introduction of fine sediment into summer steelhead/bull trout habitat. As all temporary roads will be located outside the Riparian Reserve, the effects of construction are expected to be limited to site specific disturbance, with negligible increases in fine sedimentation to listed fish habitat.

Table 19. Road Density Information for the Clear Creek, Reynolds Creek, and Bridge Creek Subwatersheds

6 th Field Water shed	6 th Field Name	Existing Road Density (mi/mi ²)	Temporary Road Miles	Road Reconstruction Miles	Post-project Road Density (mi/mi ²)
	Clear Creek	3.7	1.50	0	3.7
	Bridge Creek	3.4	0	0	3.4
	Reynolds Creek	2.9	0	0	2.9

The drainage network in the affected watersheds will be improved with the implementation of timber management projects, including the closure of Road 2600391 (5.2 miles). Road haul maintenance may result in locally impaired water quality through short-term increases in turbidity. Mitigation measures to reduce potential transmission of sediment require hauling activities occur only during dry periods, require temporary road removal, and bring roads to an upgraded condition to accommodate hauling activity. Downstream effects of turbidity on habitat important to summer steelhead and bull trout will be negligible. All areas of exposed soil associated with road haul maintenance activity will be seeded with non-invasive cereal grains and/or native perennial species.

Disturbance History

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6 th Field Watershed
Easy Fire Recovery Projects	Short-term Degrade	Maintain	Maintain

Determination:

Timber harvest and burning activities associated with Easy Fire Recovery Projects will create newly disturbed areas on the landscape. This will add to the aggregate level of disturbance in each of the affected 6th field watersheds. This indicator will be degraded at the site-specific level. It is likely that this level of disturbance will not be of the magnitude where effects to streams occupied by listed fish would occur, so the existing condition at the habitat level will likely be maintained. Similarly, the effect at the 6th field watershed scale is minimal, and no change in baseline condition is expected.

Rationale:

Timber management activities in combination with past or foreseeable events, are not expected to contribute to degradation of aquatic habitat conditions through increases in peak flow frequency or intensity. Habitat conditions necessary for bull trout and summer steelhead reproduction and rearing in the Easy Fire Recovery Project area are expected to be maintained.

Soil hazards are based on naturally occurring geologic processes and would not be altered by the proposed actions. Natural disturbance in the form of large fires occurred within the Easy Fire area before the influence of man. The proposed action would lead to restoration of forest vegetation and natural growing conditions in the long term.

Riparian Reserves

Determination:

The Easy Fire Recovery Projects will not significantly or adversely modify existing condition of the riparian reserves. The projects will maintain the condition of this indicator at all scales.

Project	Effect to the Indicator at Different Scales		
	Site Specific	Listed Fish Habitat	6th Field Watershed
Easy Fire Recovery Projects	Maintain	Maintain	Maintain

Rationale:

No harvest will take place in RHCAs. The project area is covered by the PACFISH conservation strategy. Consequently, the proposed action follows the standards and guidelines of PACFISH. The actions would not prevent attainment of any of the Riparian Management Objectives (RMOs).

The burning of grapple piles will be of low intensity and conducted during spring or fall to avoid combustion of duff and live vegetation and associated alteration of water quality. Erosion rates would not be expected to increase due to retention of duff and maintenance of soil properties. Potential increases in ammonium and phosphate levels associated with fire will be of reduced magnitude compared to high intensity fire, and will be at levels expected within the range of variability. Aquatic habitat conditions are expected to remain within the range of natural conditions. Aquatic organisms, adapted to fire frequency greater than is experienced under current fire suppression strategies, are not expected to respond adversely to the scale and intensity prescribed. Potential downstream effects to habitat critical to summer steelhead and bull trout is expected to be negligible due to treatment scale, low intensity, and distance.

Matrix Indicators With A Low Risk of Being Adversely Affected:

Chemical Contaminants

The Easy Fire Recovery Projects are not expected to have any effect on this indicator. Any work by heavy equipment near or in the streams requires spill protection plans to be prepared, and emergency cleanup equipment available on-site. The existing condition will be **Maintained** at all scales.

Physical Barriers

The Easy Fire Recovery Projects will not alter any natural fish barriers. No human –made fish barriers are known in the project area. This indicator will be **Maintained** at all scales.

Pool Frequency and Quality

These projects will not directly affect current or future quality or frequency of large pools; this indicator will be **Maintained** at all scales. No work occurs within fish-bearing stream channels or in RHCAs. Any increases in sediment from project activities are predicted to be short-term and not expected to decrease pool quality or frequency.

Off-Channel Habitat

The Easy Fire Recovery Projects will not affect off-channel habitat. The existing condition of this indicator will be **Maintained** at all scales.

Refugia

These projects will not lead to a reduction in the quality of existing refugia habitat. The existing condition of this indicator will be **Maintained** at all scales.

Width/Depth Ratio

These projects will not affect stream channels or flows; the existing condition of this indicator will be **Maintained** at all scales.

Streambank Condition

The implementation of Riparian Reserves protections will sufficiently protect streambanks from direct effects in listed species habitat. These projects are not expected to increase stream flows, so streambank erosion should not be increased. This indicator will be **Maintained** at all scales.

Floodplain Connectivity

The Easy Fire Recovery Projects will not change the existing connectivity between streams and their floodplains. Existing condition will be **Maintained** at all scales.

Table 20. Summarization of Effects to Matrix Indicators at Different Scales.

Indicator	Effect to the Indicator at Different Scales			
	Site Specific	Listed Fish Habitat	6 th Field Watershed	
Water Temperature	Maintain	Maintain	Maintain	S T D
Sediment	STD,LTM	Maintain	Maintain	
Large Woody Debris	Maintain	Maintain	Maintain	
Change in Peak Base Flow	Maintain	Maintain	Maintain	
Road Density and Location, Drainage Network	STD/LTM	Maintain	Maintain	= S h o r t
Disturbance History and Regime	STD/LTM	Maintain	Maintain	
Riparian Reserves	Maintain	Maintain	Maintain	
Chemical Contaminants/Nutrients	Maintain	Maintain	Maintain	T e r m
Physical Barriers	Maintain	Maintain	Maintain	
Pool Frequency and Quality	Maintain	Maintain	Maintain	D e g r a d
Off-Channel Habitat	Maintain	Maintain	Maintain	
Refugia	Maintain	Maintain	Maintain	
Wetted Width/Max Depth Ratio	Maintain	Maintain	Maintain	
Streambank Condition	Maintain	Maintain	Maintain	
Floodplain Connectivity	Maintain	Maintain	Maintain	

e, effect limited in duration. LTR = Long Term Restore, action eventually will improve existing condition. LTM = Long Term Maintain, action will eventually allow a recovery to baseline condition.

VI. Cumulative Effects

No harvest activities will be conducted within RHCAs or in sensitive areas adjacent to streams (high severity burn areas on moderate or steep slopes (>31%). Prescribed fire used for fuel treatment in this project will consist only of burning piles. There is no broadcast burning planned at this time for any portion of the project area. Riparian areas would not be affected by fire, as fuel treatments would only occur within harvest units, which are all outside the RHCA’s. The risk of short-term disturbance is also mitigated by dry weather or over frozen road haul season operation and limiting equipment proximity to stream channels by the utilization of RHCA buffers. Management induced effects are not expected to be significant in aggregate to increment changes in 1) the timing or magnitude of peak flow events; 2) instability of stream banks; 3) adverse alteration of the supply of sediment to channels; 4) adverse alteration of sediment storage and structure in channels. The quality of habitat important to summer steelhead and bull trout is expected to be maintained with implementation of any proposed action alternative.

No additional timber sale planning areas are proposed within the Clear, Bridge, or Reynolds Creek subwatersheds within the next five years. The Crawford Timber Sale has at least one unit (thinning) to be completed on the north side of state Highway 26. Other potential activities that may be conducted on federal lands within these watersheds in the foreseeable future are firewood

cutting, dispersed camping, and road closures. Additionally, grazing of cattle may occur. However, this activity will not likely occur until vegetation recovery is substantial within the fire area. This is not expected before 2-3 years and may involve fencing of sensitive areas.

Activities which occur and expected on private land, outside of the proposed project area, include grazing, timber harvest, and the general use of state, county, and private roads, as well as the use of private and commercial buildings.

Grazing is expected to occur on private land. Pastures are currently located within RHCAs. However, timber harvest is not expected to occur on private land within the Clear, Bridge, and Reynolds Creek subwatersheds. Most commercially valuable timber has already been harvested. Additional harvest is not expected.

VII. Determination of Effect - ESA

Easy Fire Recovery Projects

Determination:

The Easy Fire Recovery Project, including road treatments and prescribed fire **may affect, but is not likely to adversely affect** (NLAA) summer steelhead or result in the adverse modification or destruction of their habitat as a result of no direct effects and the low probability of indirect effects on limiting factors described in the matrix section of this BA. While critical habitat is not currently designated for summer steelhead, the implementation of these projects will not adversely modify habitat important to summer steelhead in the Clear Creek, Bridge Creek, or North Reynolds 6th field subwatersheds. Additionally, the Easy Fire Recovery Project, including road treatments and prescribed fire **may affect, but is not likely to adversely affect** (NLAA) bull trout or their habitat in the Clear Creek or North Reynolds subwatersheds. While critical habitat is not currently designated for bull trout, critical habitat is proposed in Clear Creek within the project area and Reynolds Creek and North Reynolds Creek adjacent to the project area. See following section Proposed Critical Habitat for Bull Trout. The implementation of these projects **will not adversely modify habitat** important, or habitat proposed as critical habitat for bull trout in the Clear Creek or Reynolds Creek subwatersheds. The implementation of these projects will have **no adverse impacts** to Chinook salmon EFH.

Rationale:

The analysis of effects on the matrix indicators describe limited direct and indirect effects effects, generally limited to site specific, short duration, low magnitude effects. The projects were designed to protect water quality and fish habitat. These effects are not expected to directly or indirectly change the condition of potentially and currently occupied listed fish habitat, and these effects would be non-detectable at the 6th field watershed level. Although both summer steelhead and bull trout likely utilize habitat immediately downstream from the Easy Fire Recovery Projects, the probability that the implementation of this project will affect these fish or their habitat is very low.

Default PACFISH buffers would be implemented for all harvest and postharvest treatments in order to conserve aquatic and stream conditions within the project areas. Units proposed for tractor yarding are located on slopes less than 30-35% and are far away from fish bearing streams The preferred alternative was designed to minimize impacts to fish, water

and soil resources. No harvest will be conducted on moderate to steep slopes (>31%) that burned with a high intensity adjacent to streams.

5.2 miles of road (Road 2600391) will be closed decreasing open road density from current levels. Hauling activities will only be conducted during dry weather or frozen road conditions.

Changes in hydrologic function as a result of canopy alteration is expected to be well within the threshold of measureable change to the affected watersheds. The harvest of timber is not expected to change the timing or magnitude of water yields within the affected watersheds.

These timber management projects do not construct any new permanent roads or reconstruct existing ones, do not enter RHCAs, and use reduced-impact yarding systems such as skyline and helicopter yarding to reduce soil disturbance.

VIII. Bull Trout Proposed Critical Habitat

In accordance with section 3(5)(A)(i) of the Endangered Species Act and regulations at 50 CFR424.12, in determining which areas to propose as critical habitat, USFWS is required to base their proposal on the best scientific data available, and to consider those physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These physical and biological features include, but are not limited to: space for individual and population growth, and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. All areas proposed as critical habitat for bull trout are within the historic geographic range of the species and contain one or more of these physical or biological features essential to the conservation of the species. The regulations also require that we include a list of known primary constituent elements with the critical habitat description. As described in the regulations, the primary constituent elements may include, but are not limited to, features such as spawning sites, feeding sites, and water quality or quantity.

Upper Middle Fork John Day River 5th Field Watershed Clear Creek 6th Field Watershed

Clear Creek, which flows through the Easy Fire Project Area, has been proposed by USFWS as critical habitat for bull trout from its confluence with the Middle Fork John Day River (44.821 degrees latitude, -118.449 degree longitude) to its headwaters (44.758 degrees latitude, -118.509 degrees longitude).

Upper John Day River 5th Field Watershed Reynolds Creek 6th Field Watershed

Reynolds and North Reynolds Creek are located south of the Easy Fire Recovery Project area but within the potential zone of influence from project activities. Reynolds Creek has been proposed by USFWS as critical habitat for bull trout from its confluence with the John Day River (44.414 degrees latitude, -118.595 degrees longitude) to all but its extreme headwaters (44.405 degrees

latitude, -118.439 degrees longitude). North Reynolds Creek has also been proposed by USFWS as critical habitat for bull trout from its confluence with Reynolds Creek (44.423 degrees latitude, -118.516 degrees longitude) to all but its extreme headwaters (44.43 degrees latitude, -118.424 degrees longitude)

Environmental Baseline with Determination and Rationale

(1) Permanent water having low levels of contaminants such that normal reproduction, growth and survival are not inhibited.

There are no known sources of chemical contaminants in Clear Creek, Reynolds or North Reynolds Creek.

Determination and Rationale

The Easy Fire Recovery Projects are not expected to have any effect on this indicator. Any work by heavy equipment near or in the streams requires spill protection plans to be prepared, and emergency cleanup equipment available on-site.

The existing condition will be maintained with implementation of Easy Fire Recovery Projects.

(2) Water temperatures ranging from 2 to 15°C (36 to 59°F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life history stage and form, geography, elevation, diurnal and seasonal variation, shade, such as that provided by riparian habitat, and local groundwater influence.

In many cases, the natural stream temperatures may be above established thresholds (per April 2003 discussions with Dave Kretzing, Hydrologist – formerly at Prairie City Ranger District, Malheur National Forest. Certain sampling sites along Clear and Reynolds Creek have found water temperatures prior to the Easy Fire to be outside the range specified by the USFWS (36 to 50 degrees F) and EPA (≤ 55 degrees F); others were within the acceptable range. See Table 11. (Table of Stream Temperatures).

The warmest temperatures for Clear Creek, in particular, were taken at a sampling site 3.5 miles downstream of the fire area. However, the riparian areas of Clear Creek within the fire area and upstream of the fire area were fairly intact before and after the fire. Intact riparian areas provide stream shade at natural levels. The reference stream temperature through these reaches are probably near their potential.

Determination and Rationale

The implementation of the Easy Fire Recovery projects will not affect stream shade or stream flow to an extent where stream water temperature would be increased. Timber projects will maintain the existing condition. See Temperature Rationale on Page 29.

(3) Complex stream channels with features such as woody debris, side channels, pools, and undercut banks to provide a variety of depths, velocities, and instream structures.

Twenty pieces of wood per mile (at least 35-feet long and greater than 12-inches in diameter) is

considered to be functioning appropriately according to PACFISH (1994). Results of stream surveys are shown in Table 4 (Large Wood/Mile for Surveyed Streams in the Easy Fire Recovery Project Area).

While wood counts in Clear Creek are much lower in 2002 as compared to the 1992 survey, the large wood counts are well above PACFISH (1994) objectives at two to three times PACFISH (1994) levels. Results for the North Reynolds Creek stream survey also show wood counts to be above PACFISH levels. However, the data collected for Clear Creek in 2002 and North Reynolds Creek in 1991 are below the minimum desired future condition (DFC) values of 80 pieces per mile specified in Amendment 29 of the Malheur Forest Plan (1990).

Post-fire wood count data was also collected for Category 2 and 4 streams in 2002 within the Easy Fire Recovery project area and is shown in Table 5 (Large Wood/Mile for Category 2 and 4 Streams in the Easy Fire Project Recovery area). While specific wood count recommendations are not specified in PACFISH or Amendment 29 of the Malheur Forest Plan (1990) for these stream categories, the plan does specify the following as a resource element standard under Fish and Wildlife (Resource Element 12, IV-56): Provide for the input of large, woody debris into all classes of streams and evaluate to determine if objectives are being met. Wood count data was collected in accordance with Region 6 Level II Stream Survey protocol.

All surveyed streams were found to be below PACFISH (1994) objectives of 96 pools per mile and Amendment 29 of the Malheur Forest Plan (1990) DFC minimum number of 75 per mile. See Table 6 (Pools/Mile for Surveyed Streams in the Easy Fire Recovery Project Area).

Determination and Rationale

The Easy Fire Recovery projects are expected to maintain large woody material at all scales and will not directly affect current or future quality or frequency of large pools. No work activities occur within fish-bearing stream channels or in RHCAs. Any increases in sediment from project activities are predicted to be short term and not expected to decrease pool quality or frequency. For further discussion and rationale pertaining to large wood see Large Woody Material Rationale on Page 31.

(4) Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine substrate less than 0.63 cm (0.25 in) in diameter and minimal substrate embeddedness are characteristic of these conditions.

The risk is low for increased sediment into nearby streams resulting from the Easy Fire, except in the event of an intense storm event. This increased sediment loading is expected to be short term. Significant amounts of woody material remain on the slopes to reduce erosion and trap sediments. Additionally, substantial vegetation remains in the flood plain of perennial streams, including the only fish-bearing stream Clear Creek, within the project area to trap sediments. Also, the Easy Fire burn pattern is a mosaic across the landscape, providing a vegetative filter across more severely burned sites (Bright and others 2002).

Wolman Pebble count data gathered from reaches 1 and 2 of the 2002 post-fire Clear Creek stream survey showed fine sediment levels (<6mm %) to average 8.6% with a range of 0 to 10% across 7 sampling sites, which is below the 20% threshold for fine sediments.

Although no Wolman Pebble Count data is available, stream surveys of Clear Creek in 1992 and North Reynolds Creek in 1991 showed these stream to have a high percentage of embedded units (>35%). See Table 7 (Substrate of Surveyed Streams in the Easy Fire Recovery Project Area). No embeddedness data was available from the 1991 Reynolds Creek stream survey data.

Determination and Rationale

The Easy Fire Recovery Projects will likely cause a very small increase in sediment delivery rates to streams within the watershed upstream of habitat occupied by listed fish. The risk that this slight increase in sediment will affect sediment levels in streams potentially utilized by bull trout is very low. It is predicted that there will be no long term adverse effects from sediment introductions to aquatic habitats resulting from the implementation of Easy Fire Recovery projects. Overall, it is expected that the positive effects from road improvements associated with these projects will result in a long-term reduction in road origin sediments. Aquatic habitat contributing to the life history needs of bull trout will be maintained. See Sediment Rationale on Page 29.

(5) A natural hydrograph, including peak, high, low, and base flows within historic ranges or, if regulated, a hydrograph that demonstrates the ability to support bull trout populations.

Runoff is expected to increase by only 5-10% within the project area due to fire effects. Additional modifications to the hydrograph of Clear Creek, Reynolds and North Reynolds Creek below the Easy Fire Recovery area have resulted from irrigation withdrawals.

Determination and Rationale

It is unlikely that the implementation of the Easy Fire Recovery projects will cause changes in peak and base flows. If minimal changes were experienced, they would not be expected to reach a level where they would be measurable, nor would a minor increase result in adverse effects such as accelerated stream bank erosion or channel scouring. These effects are not expected to reach the magnitude where critical bull trout habitat would be affected. No change in existing condition is expected at the 6th field watershed level. See Peak/Base Flows Rationale on Page 31.

(6) Springs, seeps, groundwater sources, and subsurface water connectivity to contribute to water quality and quantity.

Springs and seeps are found in the Easy Fire Project area. Short-term increases in runoff are expected in those areas of fire influenced by high fire intensity. However, it is predicted that less than 5% of the area has experienced significantly reduced infiltration, which should minimize the amount of runoff to only about 5-10% (Bright and others 2002).

Water flow from springs and seeps should increase over the next few years in response to the decrease in vegetation following the 2002 fire and then return to normal as vegetation recovers. Conditions around springs and seeps should also improve due to the proposed temporary two to three year cessation of livestock grazing in the fire area.

Determination and Rationale

The implementation of the Easy Fire Recovery projects is not predicted to cause changes to

groundwater sources by substantially affecting infiltration rates or surface water patterns. The existing condition will be maintained.

(7) Migratory corridors with minimal physical, biological, or chemical barriers between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows.

The potential migratory corridors for a reestablished bull trout population would be the Middle Fork John Day River to Clear Creek and the main stem John Day River to Reynolds and North Fork Reynolds Creeks. Conditions along these rivers are believed to be marginal. The majority of this portion of the river flows through private lands.

Currently, bull trout are found in the Big Creek, Granite Boulder Creek, and Clear Creek drainages. These subpopulations constitute the MFJD metapopulation (Buchanan et al. 1997). The mainstem MFJD serves as a seasonal migration corridor for the three subpopulations. It is likely that some members of these populations move into the main MFJD River and possibly other tributaries when water temperatures are cooler, but currently it is unknown as to the extent of connectivity between the three populations of the MFJD.

Migratory habitat in the upper Middle Fork of the John Day River is poor due to seasonal thermal barriers and lack of complex pool habitat (Claire and Gray 1993) and may limit movement between subpopulations in the subbasin.

Determination and Rationale

The implementation of Easy Fire Recovery projects will not adversely affect habitat conditions within the migration corridors for bull trout or the likelihood that bull trout will utilize these corridors. See Temperature and Sediment on Page 29, Large Woody Material and Peak/Base Flows on Page 31, and Matrix Indicators With A low Risk of Being Adversely Affected on Pages 34 and 35.

(8) An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

Habitat conditions within Clear, Reynolds and North Reynolds Creek and their associated RHCAs provide suitable environments for the survival and reproduction of aquatic and terrestrial food organisms.

Aquatic macroinvertebrate populations are expected to remain reasonably stable due to the low impacts of fire to perennial streams in the project area, especially Clear Creek. Any short-term increases in sediment levels in Category 4 (Intermittent) channels, within the project area, due to fire effects is predicted to have minimal impacts to the perennial stream systems.

Determination and Rationale

The Easy Fire Recovery projects will not affect the terrestrial and aquatic food organism base for bull trout. The existing condition will be maintained. No harvest activities will occur in RHCAs.

(9) Few or no predatory, interbreeding, or competitive nonnative species present.

Fish species documented within and adjacent to the Easy Fire Recovery Project area are indigenous to the area. Brook trout are not present.

Determination and Rationale

The implementation Easy Fire Recovery projects will not adversely affect water quality or stream

habitat conditions which could allow the expansion of nonnative species into the project area or its vicinity. See Temperature and Sediment on Page 29 and Chemical Contaminants on Page 34.

Effects and Determination Summary

Harvest activities are not proposed in RHCAs in the Preferred Alternative 3. Also, those steeper (>31%) areas adjacent to Clear Creek, that burned with high fire intensity have also been removed from harvest activities with the preferred alternative. Additionally, those units located on steeper ground (>31%) that burned with moderate fire intensity will be helicopter logged. Due to the location of units, yarding methods utilized, and distance of units to streams, Alternative 3 will not have any long term effects to channel stability, physical habitat, or water quality elements. Consequently, effects to proposed critical habitat for bull trout are unlikely.

Determination

Implementation of the preferred alternative (Alternative 3) for the Easy Fire Recovery Project would not result in adverse modification to proposed critical habitat for bull trout.

IX. Chinook Salmon Essential Fish Habitat (EFH)

The Pacific Fisheries Management Council (PFMC) is one of eight regional fishery management councils established under the Magnuson-Stevens Act. PFMC develops and carries out fisheries management plans for salmon, groundfish and coastal pelagic species off the coasts of Washington, Oregon, and California, and recommends Pacific halibut harvest regulations to the International Pacific Halibut Commission.

As required by the Magnuson-Stevens Act, PFMC described and identified Essential Fish Habitat (EFH) in each of its fisheries management plans. EFH includes “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.” All streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California are designated as EFH for affected salmon stocks with management plans.

The Magnuson-Stevens Act (MSA) also established an EFH consultation process. Federal agencies are required to consult with NMFS on all actions that may adversely affect EFH. The NMFS interprets the scope of these consultations to include actions by Federal agencies that occur outside designated EFH, such as upstream or upslope, but which nonetheless may have an adverse effect on habitat conditions necessary for the long-term survival of the species within EFH. The NMFS must provide conservation recommendations for any Federal or State activity that may adversely affect EFH. Within 30 days of receiving EFH conservation recommendations from the NMFS, Federal agencies must conclude EFH consultation by responding to NMFS with a written description of conservation measures the agency will use to avoid, mitigate or offset the impact of its action on EFH. If the Federal agency selects conservation measures, which are inconsistent with the conservation recommendations of NMFS, the Federal agency must explain in writing its reasons for not following NMFS recommendations.

The proposed project area in this BA occurs within the area designated as EFH for spring Chinook salmon, which was deemed not warranted for listing under ESA on March 9, 1998 (63 FR 11482). EFH for spring Chinook salmon is considered to be those habitats occupied at present and those historic habitats in the John Day Basin. This includes main stem streams and most tributaries below natural barriers to upstream migration. The proposed actions in this BA

are unlikely to adversely affect Chinook salmon EFH based on the Chinook salmon habitat being nearly two miles below the Easy Fire Recovery Project and the minimal impacts associated with project activities to stream habitats.

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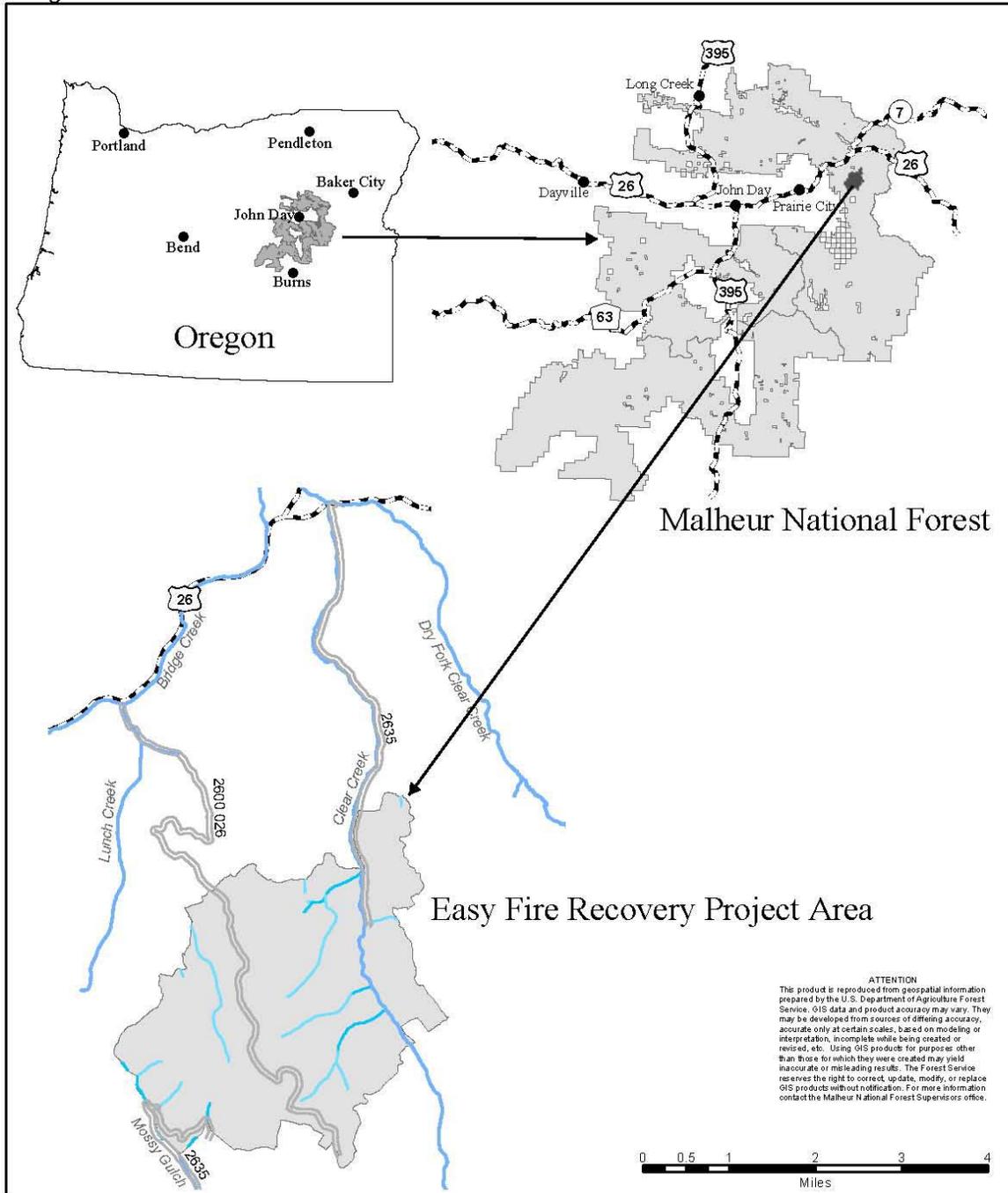
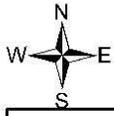
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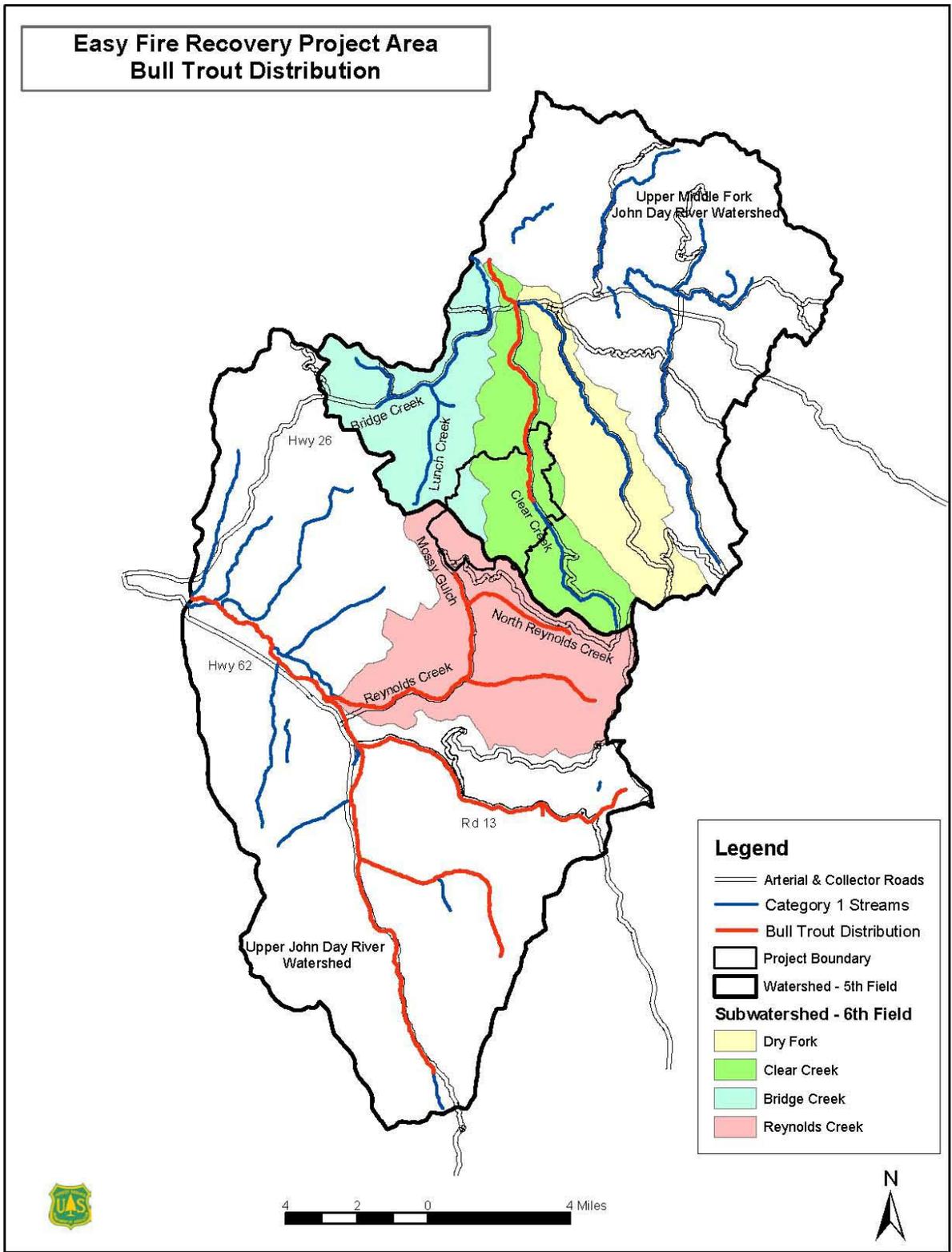
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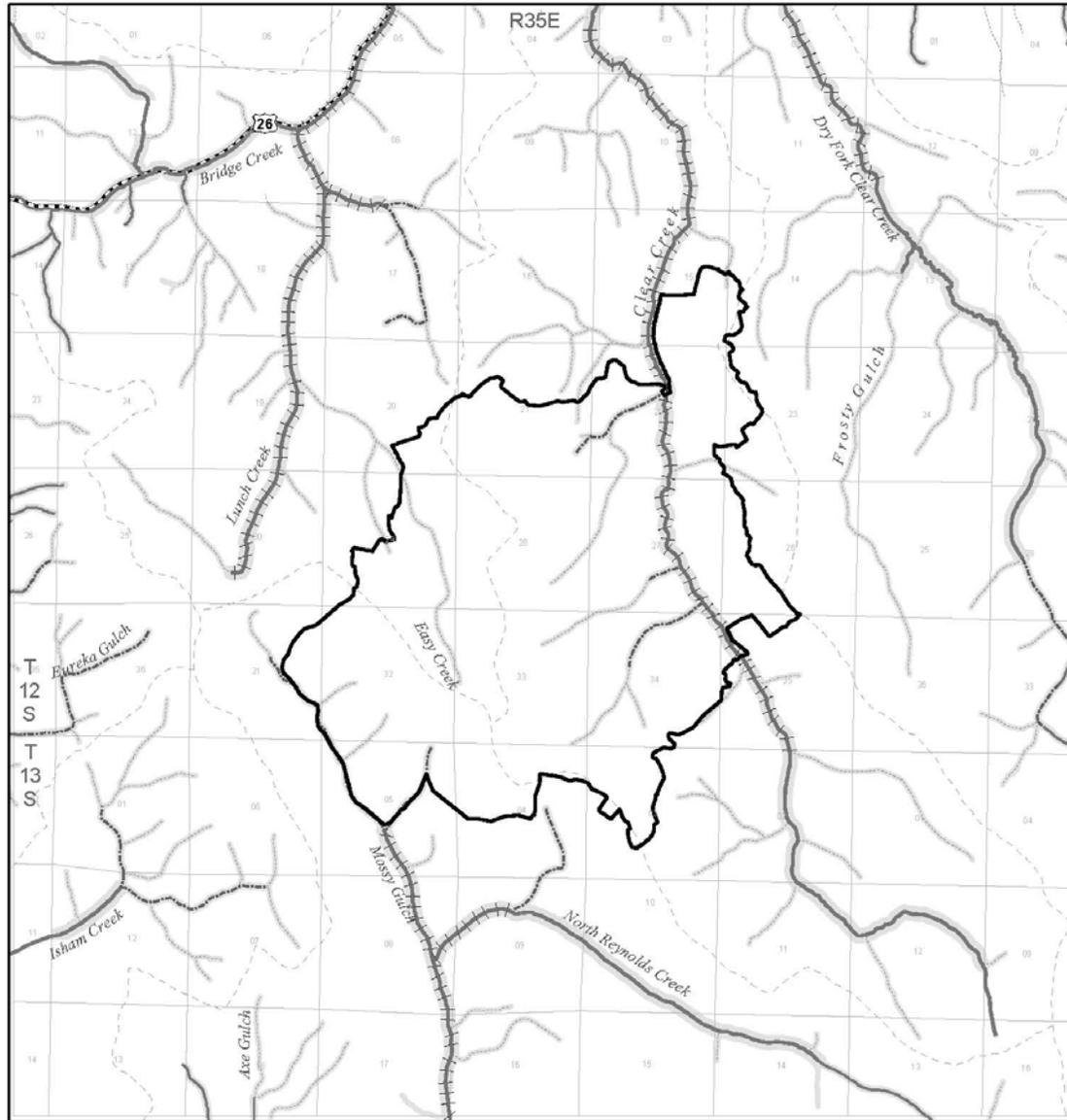
Easy Fire Recovery Project Vicinity Map







Easy Fire Recovery Project Stream Category and Summer Steelhead Presence



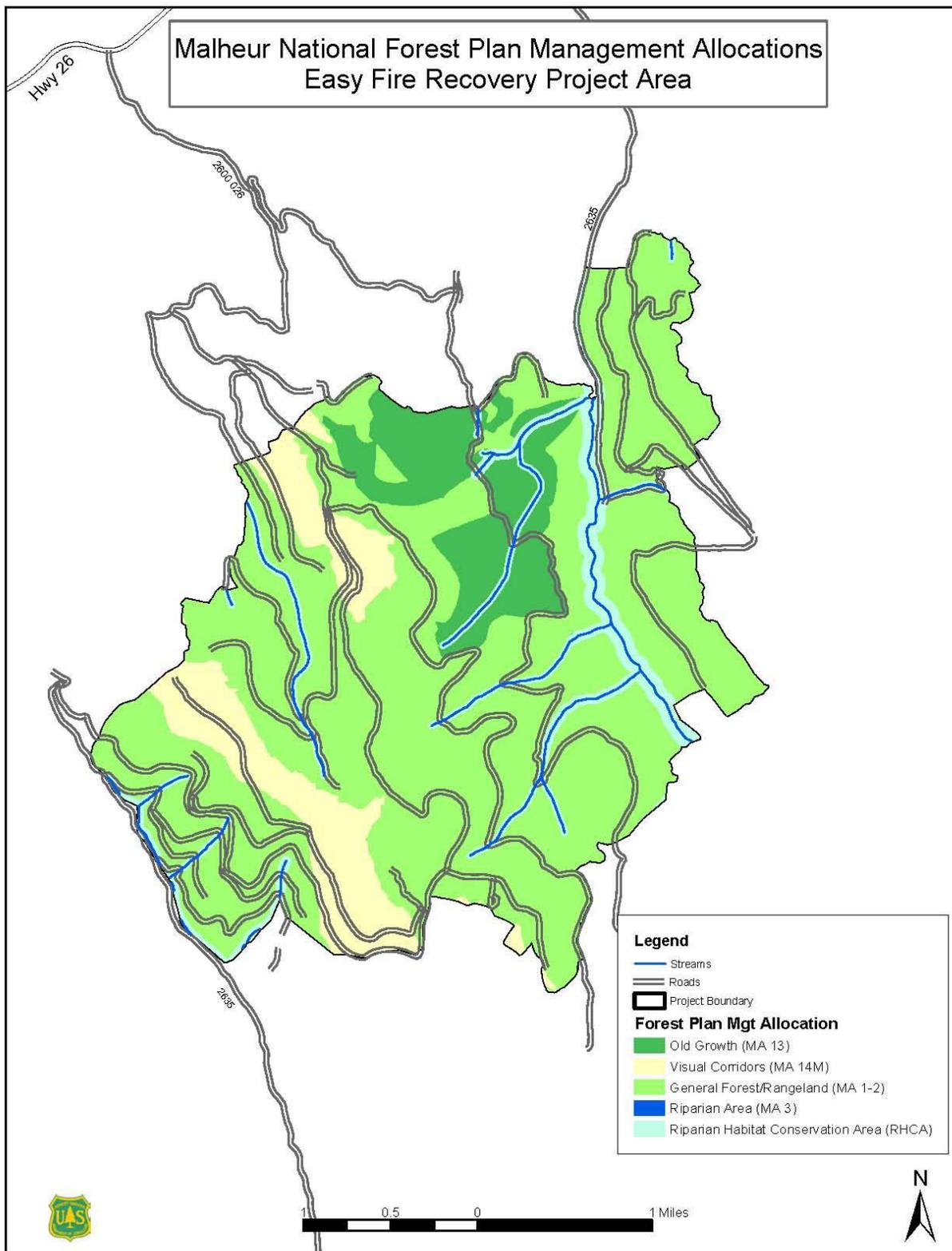
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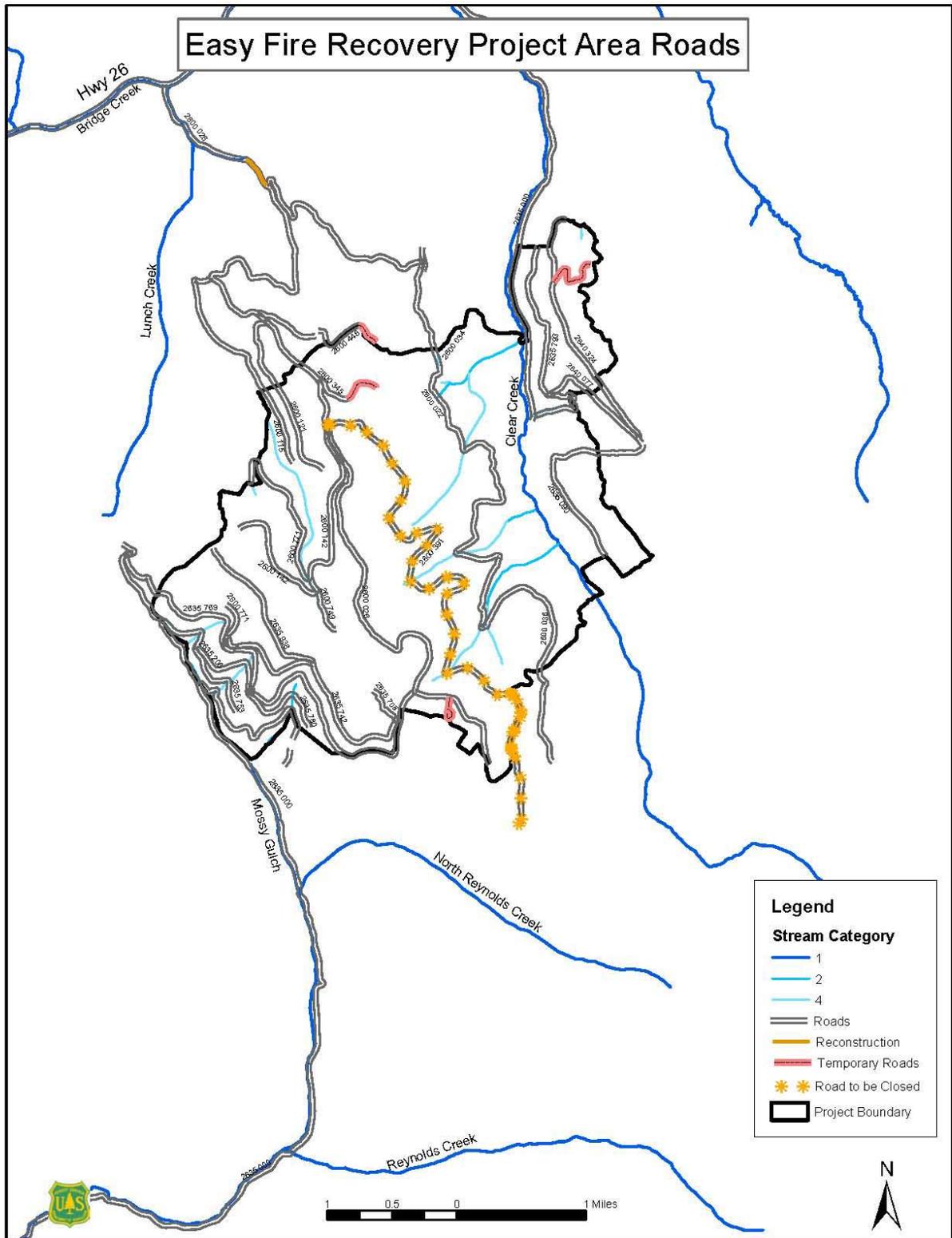
- Easy Fire Recovery Area
- Subwatershed Boundary
- Major Roads
- Category 1
- Category 2
- Category 4
- Areas of Summer Steelhead Presence
- RHCA

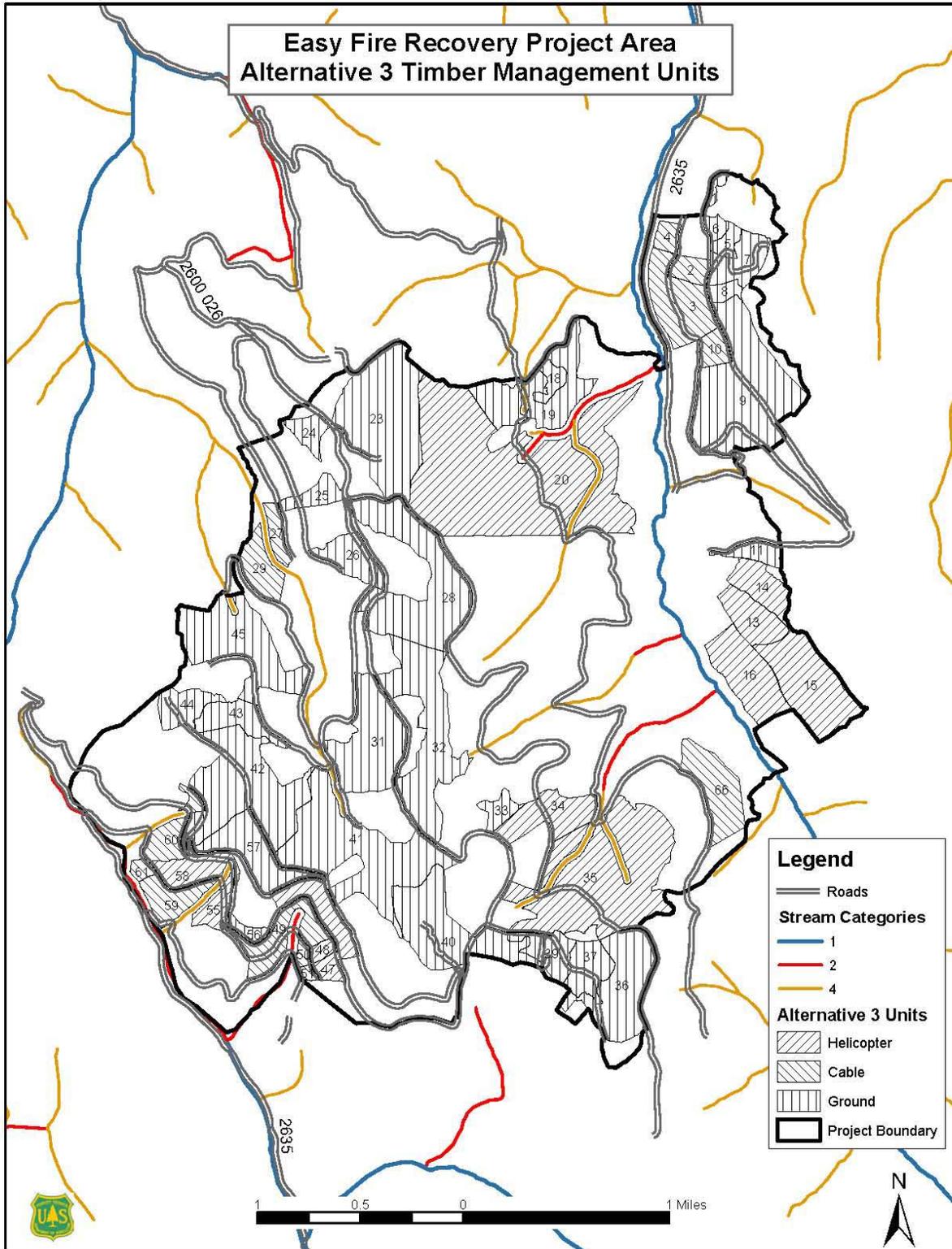
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Figure 14









**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2003/01566

January 16, 2004

Roger Williams
Forest Supervisor
Malheur National Forest
P.O. Box 909
John Day, OR 97845

Re: Endangered Species Act Section 7 Informal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Proposed Easy Fire Recovery Project, Prairie City Ranger District, Malheur National Forest, Upper John Day Subbasin, Grant County, Oregon

Dear Mr. Williams:

This correspondence is in response to your request for consultation under the Endangered Species Act (ESA). Additionally, this letter serves to meet the requirements for consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

ENDANGERED SPECIES ACT

The Malheur National Forest (MNF) proposes to harvest timber damaged in the Easy Fire which occurred in 2002.

On December 24, 2003, the National Marine Fisheries Service (NOAA Fisheries) received a letter, biological assessment (BA), and other project information from the MNF and a written request for concurrence with a finding that the proposed action is "not likely to adversely affect" (NLAA) Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) within the project area. This consultation is undertaken pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR Part 402.

The proposed Easy Fire Recovery Project (Project) consists of several components. The MNF proposes the following as part of the Project: (1) Maintenance of 64.3 miles of haul route roads; (2) salvage regeneration harvest on 2,667 acres; (3) post and pole salvage with natural regeneration on 153 acres; (4) fuel treatments that consist of grapple pile and burn piles on 780 acres, lop & scatter on 850 acres, whole tree yarding on 828 acres, yard limbs with log on 311 acres, and hand pile and burn piles on 52 acres; (5) reforestation within harvest units on 2,560



acres; (6) reforestation outside harvest units on 1,358 acres; (7) animal damage control (big game repellent) on 3,918 acres; (8) new wildlife gates on Road 2600391 (closes 5.2 miles); (9) rehabilitation of skid trails in all ground-based yarding units (subsoiling where the soil is suitable, waterbarring, and erosion control seeding and fertilization); and (10) rehabilitation of 1.5 miles of temporary spur roads used for harvest on this project (subsoiling, waterbarring, and erosion control seeding and fertilization).

This project will harvest 52 units for a total of 2,820 acres. No harvest will be conducted within PACFISH¹ riparian habitat conservation areas (RHCAs). Additionally, areas adjacent to RHCAs that had a high burn severity (Burned Area Emergency Rehabilitation (BAER) burn severity) will not be harvested, thereby minimizing impacts to fish, water, and soil resources. Although 2% (57 acres) of the area to be harvested is considered sensitive due to high burn severity and locations on steeper slopes (31 to 60%), the location of these sensitive areas are generally small, fragmented areas at least 0.25 miles from streams. Only fire-killed trees and trees expected to die as a result of fire injury will be removed. Live trees that jeopardize the safety of the harvest operations will also be harvested. Incidental live trees may also be removed during road building and landing construction. One to two snags per acre will be left within harvest units to provide for down woody material requirements.

The majority of timber harvest will occur in Clear Creek subwatershed (1,890 acres), followed by 525 acres in Reynolds Creek subwatershed, and 405 acres in Bridge Creek subwatershed. The principal yarding method will be tractor (1,608 acres) with a substantial amount of helicopter yarding (910 acres) utilized as well. 302 acres will be cable yarded. All harvest units are on slopes with a low probability of mass failure.

Hazard trees along haul routes will be felled inside RHCAs but left onsite to serve as down woody debris. No change in road densities will occur to included subwatersheds as no new permanent roads will be constructed. Approximately 1.5 miles of temporary road will be constructed to allow harvest access. All temporary roads are outside of RHCAs and will be stabilized and decommissioned after harvest activities.

Timber will be transported from the project area only when road surfaces are dry or frozen. Roads used for transport cross a maximum of seven perennial streams, depending upon the haul route. Most perennial stream crossings are via improved roads over stream sections that are upstream of known distribution of MCR steelhead. Approximately 12.3 miles of haul road are within RHCAs associated with perennially flowing streams, while the remaining roads are outside of the RHCAs. Only one major haul route parallels part of the first three streams, Road 2635. However, this road is in good condition and rocked at stream crossings (culverts) and along riparian areas. Also, there is vegetation between the roads and streams, further protecting the aquatic resource. Haul will only occur in dry or frozen conditions.

Road activities will also include routine haul road maintenance, except for the addition of gridrolled aggregate on 0.25 miles of Road 2600026. All road maintenance will occur in dry

¹ Environmental Assessment for the Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California. (USDA FS and USDI BLM 1995)

conditions. Water drafting may occur at three sites defined in the BA. Pumps used for water drafting will be screened according to NOAA Fisheries juvenile screening criteria,² and will follow guidelines from a previous consultation on road maintenance on the MNF (refer to: NOAA Fisheries No. 2002/00420). In the water drafting guidelines for road maintenance on the MNF, flows will not be reduced by more than 10% of the existing flow.

Prescribed fire used for fuel treatment in this project will consist of burning piles only. There is no broadcast burning planned at this time for any portion of the Project area. Therefore, riparian areas will not be affected by fire, as fuel treatments will only occur within harvest units, which are all outside RHCAs.

Based on information provided by the MNF, NOAA Fisheries concurs with the MNF determination that the Easy Fire Recovery Project is NLAA for the following reasons:

1. No harvest will occur within RHCAs or in severely burned areas on steep slopes adjacent to RHCAs.
2. No new permanent roads will be constructed and all temporary roads will be stabilized and decommissioned after the project is complete.
3. All road maintenance will occur in dry conditions.
4. All haul will occur in dry or frozen conditions.
5. The BA indicates that all matrix parameters will be maintained in the long term.

Therefore, the proposed project is not likely to cause adverse effects to MCR steelhead or their habitat in the Project area.

The MNF must reinitiate this consultation if: (1) New information reveals that effects of the action may affect listed species in a way not previously considered, (2) the action is modified in a way that causes an effect on listed species that was not previously considered, or (3) a new species is listed or critical habitat is designated that may be affected by the actions (50 CFR 402.16).

MAGNUSON-STEVENS FISHERIES CONSERVATION AND MANAGEMENT ACT

Federal agencies are required under §305(b)(2) of the MSA and its implementing regulations (50 CFR 600 Subpart K), to consult with NOAA Fisheries regarding actions that are authorized, funded, or undertaken by that agency that may adversely affect essential fish habitat (EFH). The MSA (§3) defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” If an action would adversely affect EFH, NOAA Fisheries is required to provide the Federal action agency with EFH conservation recommendations (MSA

² National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) available at <http://www.nwr.noaa.gov/1/hydrop/hydroweb/ferc.htm>

§305(b)(4)(A)). This consultation is based, in part, on information provided by the Federal action agency and descriptions of EFH for Pacific salmon contained in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan*³ developed by the Pacific Fishery Management Council.

The proposed action and action area are described in the BA. The project area includes habitat which has been designated as EFH for various life stages of chinook salmon (*O. tshawytscha*).

Because the habitat requirements (*i.e.*, EFH) for the MSA-managed species in the project area are similar to that of the ESA-listed species, and because the conservation measures that the MNF included as part of the proposed action to address ESA concerns are also adequate to avoid, minimize, or otherwise offset potential adverse effects to designated EFH, conservation recommendations pursuant to MSA (§305(b)(4)(A)) are not necessary. Since NOAA Fisheries is not providing conservation recommendations at this time, no 30-day response from the MNF is required (MSA §305(b)(B)).

This concludes consultation under the MSA. If the proposed action is modified in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations, the MNF will need to reinstate EFH consultation with NOAA Fisheries in accordance with NOAA Fisheries implementing regulations for EFH at 50 CFR 600.920(k).

Please direct questions regarding this letter to Brett Farman of my staff in the Eastern Oregon Habitat Branch of the Oregon State Habitat Office at 541.975.1835, ext. 228.

Sincerely,



D. Robert Lohn
Regional Administrator

cc: Larry Bright, USFS
Paul Bennett, USFS
Brooks Smith, USFS
John Morris, BLM
Marisa Meyer, USFWS
Tim Unterwegner, ODFW

³ PFMC (Pacific Fishery Management Council). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
 La Grande Field Office
 3502 Highway 30
 La Grande, Oregon 97850
 Phone: (541) 962-8584 FAX: (541) 962-8581



Reply To: 8330.01134 (04)
 File Name: 2003EasyFireRecovery_LOC.doc
 TS Number: 04-0980

Roger Williams
 Forest Supervisor
 Malheur National Forest
 P.O. Box 909
 John Day, OR 97845

Subject: Informal Consultation and Conference on the Effects of the Easy Fire Recovery Project on Bull Trout and Bull Trout Proposed Critical Habitat (1-17-04-I-0113)

Dear Roger:

This concurrence responds to the Malheur National Forest's (Forest) request for informal consultation with the Fish and Wildlife Service (Service), dated December 22, 2003, in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Your request was received by the Service on December 23, 2003, and documents your evaluation of the impacts on bull trout (*Salvelinus confluentus*) and their proposed critical habitat from the proposed Easy Fire Recovery Project. The proposed fire recovery project is located in the Bridge, Clear, and Reynolds Creeks and Dry Fork Subwatersheds, Grant County, Oregon.

Based on information provided in the final biological assessment (Assessment) dated December 2003, the Forest has determined that the proposed Easy Fire Recovery Project *may affect, but is not likely to adversely affect* bull trout. Additionally, the Service finds that the project-related impacts are *not likely to adversely affect* proposed bull trout critical habitat.

These concurrences are based upon information provided in the following documents: the final Assessment; the final rule listing bull trout in the Columbia River Basin as threatened (63 FR 31647); our files; and Forest Level 1 Team (Level 1 Team) meetings. A complete administrative record of this consultation is on file at the La Grande Field Office, La Grande, Oregon.

Proposed Action

The proposed Easy Fire Recovery Project consists of salvage regeneration harvests on 2,667 acres, post and pole salvage with natural regeneration on 153 acres, rehabilitation of skid trails in all ground based yarding units (subsoiling where the soil is suitable, waterbarring, and erosion control seeding and fertilization), rehabilitation of 1.5 miles of temporary spur roads used for harvest (subsoiling, waterbarring, and erosion control seeding and fertilization), maintenance of 64.3 miles of haul route roads, reforestation within harvest units on 2,560 acres, reforestation outside harvest units on 1,358 acres, animal damage control (Big Game Repellent) on 3,918

Mr. Roger Williams

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acres, new wildlife gates on Forest road 2600391 (closes 5.2 miles), and some fuel treatments. Proposed fuel treatments include grapple pile and burn piles on 780 acres, lop and scatter on 850 acres, whole tree yarding on 828 acres, yard limbs with log on 311 acres, and hand pile and burn piles on 52 acres.

Timber Harvest and Yarding

The proposed project includes harvest on 52 individual units for a total of 2,820 acres. No harvest would be conducted within riparian habitat conservation areas (RHCAs) or on sites with high Burned Area Emergency Rehabilitation (BAER) burn severity designations that are adjacent to streams. Approximately two percent (57 acres) of the area to be harvested is considered sensitive due to steep slopes (31-60 percent) and a high BAER burn severity designation. These areas are generally fragmented, small acreages that are at least 0.25 miles from any streams.

The majority of the proposed harvests would occur in the Clear Creek Subwatershed (1,890 acres). In addition, 525 acres in the Reynolds Creek Subwatershed and 405 acres in Bridge Creek Subwatershed are proposed for harvest. The principal yarding method would be tractor yarding (1,608 acres), with a substantial amount of helicopter yarding (910 acres) utilized as well. Only 302 acres would be cable yarded; these locations occur on slopes that have a low probability for mass failure.

Stand Prescriptions

Salvage/Regeneration units (2,667 acres). Only fire-killed trees and trees expected to die as a result of fire injury would be harvested. Live trees that pose a threat to the safety of the harvest operations and live trees impeding road and landing construction might also be removed. These units would be planted with western larch, ponderosa pine, western white pine, and Douglas-fir (Douglas-fir would not be planted in Armillaria root rot centers). One to two snags per acre would be left within harvest units to provide for down woody material requirements. Snag retention requirements would be met by leaving large patches of snags (outside of harvest units), ranging in size from 100 acres to 570 acres, totaling 1524 acres. Since snags would not be distributed on a 40 acres basis, an amendment to Forest-wide Standard and Guidelines would be needed.

Post and Pole units (53 acres). Post and pole sized fire-killed trees (mostly lodgepole pine) and post and pole sized trees expected to die as a result of fire injury would be harvested. Live trees that pose a threat to the safety of the harvest operations and live trees impeding road and landing construction might also be removed. No planting would occur in these units. It is expected that natural regeneration of lodgepole pine would be sufficient to reforest these units. Two to three snags per acre would be left within the units to meet down woody material requirements. Snag retention requirements would be met using the same large snag patches as described in the Salvage/Regeneration unit section.

Hazard trees would be cut along all open roads and closed roads that are opened for implementation of the proposed recovery project. Hazard trees within all proposed harvest units

Mr. Roger Williams

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would be removed using the same logging system as the harvest unit (i.e., tractor, helicopter, and/or cable), while hazard trees outside the proposed units would be removed with equipment operated only on the road prism. Hazard trees within RHCAs would be felled and left onsite to serve as down woody debris.

Temporary Road Reconstruction (reopening of decommissioned roads) and Construction (temporary logger spurs only)

Proposed road activities include routine haul road maintenance and dust abatement, except for the addition of a grid-rolled aggregate on 0.25 miles of Forest road 2600026 and the construction and hydrologic closing of temporary roads.

The following sites are proposed water sources for dust abatement and reconstruction:

1. Clear Creek, just north of Highway 26 and east of the Blue Mountain Work Center, located off Forest road 2600878 on Forest road 2600877. The legal description is T11S, R35E, Section 33, NE ¼ of the NE ¼.
2. Easy Creek, just off of Highway 26 on Forest road 2600026. The legal description is T12S, R35E, Section 7, NW ¼ of the NW ¼.
3. Clear Creek, near the junction of Forest road 2635 and Forest road 2640077. The legal description is T12S, R35E, Section 22, SW ¼ of the SE ¼.

No change in road densities would occur since no new road systems would be constructed. The proposed recovery project includes construction of approximately 1.5 miles (approximately 1.4 miles within the project area and approximately 0.1 miles outside the project area) of temporary roads to allow access to harvest units. Of these new temporary road miles, approximately 1.0 miles are currently decommissioned roads that would be re-opened as temporary roads, and 0.2 miles are existing dozer fire lines (0.1 mile within project area and 0.1 mile outside project area). These new temporary roads and re-opened, decommissioned roads would remain for 1-2 years until harvest activities are completed. All miles of temporary road would be stabilized and decommissioned after harvest activities. Temporary roads constructed or reconstructed specifically for the proposed recovery project would be closed with a long-term, active closure technique immediately following the season of harvest. Long-term active closures involve the removal of culverts, subsoiling the roadbed, building water diversion structures (waterbars/dips) where necessary, and blocking access to the old road prism.

Reynolds Creek Subwatershed. A site-specific access travel management plan was completed for the Reynolds Creek Subwatershed in the Mossy Analysis (Decision signed 1/22/97). The Mossy Decision notice states that approximately 32.4 miles of road would be closed by gate, obliteration, or earthen barrier. This would reduce the road density to 2.8 mi./sq. mile in summer range and 2.3 mi./sq. mile in winter range. Prior to the Easy Fire, a portion of the Mossy access plan had been implemented. It is foreseeable that the Mossy access plan would continue to be implemented in the Reynolds Creek Subwatershed.

Mr. Roger Williams

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Bridge Creek Subwatershed. The Punch Timber Sale Environmental analysis (decision signed 8/16/91) would close approximately 17 miles in the Bridge Creek Subwatershed. The Punch analysis showed the existing road density at 6.28 mi./sq. mile in the Bridge Creek Subwatershed. The Punch access management decision would reduce the road density below 5.0 miles per square mile in the Bridge Creek Subwatershed. The Punch access plan was partially implemented at the time of the Easy Fire. It is foreseeable that the Punch access plan would continue to be implemented in the Bridge Creek Subwatershed.

Clear Creek Subwatershed. An access travel management plan was developed in the Clear Analysis (Decision signed 1996) for the entire Clear Creek Subwatershed. The Clear Creek decision would reduce the road density to 3.2 mile/sq. mile year round and 2.7 mi./sq. mile with seasonal closure of Forest road 2600391. Several miles of road closures and decommissioning have been already implemented in the Clear Creek Subwatershed. This Clear decision was superceded by a bull trout consultation where additional native surface roads were identified to be closed, reducing the road density to 2.9 miles/sq. mile for most of the year. In addition, Forest road 2600391 would be closed seasonally for the fall and winter months reducing the road density to 2.4 miles/sq. mile seasonally. It is foreseeable that the Clear Project bull trout BA road densities would continue to be implemented in the Clear Creek Subwatershed.

Prescribed Fire

This project consists of using prescribed fire only for burning piles. There is no broadcast burning planned for any portion of the project area. Additionally, riparian areas would not be affected by fire, as fuel treatments would only occur within harvest units, which are all outside RHCAs.

Tractor yarded units. On approximately 828 acres, whole trees would be yarded with limbs attached, limbs would be removed and piled at the landings, and the piles would be burned. In addition, approximately 780 acres would be grapple piled (thumb and shovel) and burned.

Skyline yarded units. On approximately 250 acres, whole trees would be yarded with limbs attached, limbs would be removed and piled at the landings, and the piles would be burned. One unit (52 acres) would be whole tree yarded with tops attached, tops would be removed and piled at the landings, and the piles would be burned. In addition, the 52 acres would be hand piled and the piles would be burned.

Helicopter yarded units. All 910 acres would be lopped and scattered to reduce the fuel bed depth to less than 18 inches. No burning would be involved.

Bull Trout and Proposed Bull Trout Critical Habitat

Upper Middle Fork John Day (MFJD) River

The Upper MFJD River bull trout subpopulation is classified as “probably extinct” (Buchanan *et al* 1997). In addition, the Granite Boulder Creek and Big Creek subpopulations are classified as “high risk of extinction” and the Clear Creek subpopulation is classified as “high risk of

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extinction” (Buchanan *et al* 1997). Prior to 1990, bull trout were found in Indian, Big Boulder, Butte, Davis, and Vinegar Creeks. In addition, bull trout were found in the MFJD River below Indian Creek and from Clear Creek upstream to Phipps Meadow. Currently, bull trout are found in Big, Granite Boulder, and Clear Creeks (Buchanan *et al* 1997).

A total of ten streams within the Middle Fork John Day River Subbasin are proposed for bull trout critical habitat designation. These streams include Indian, Big, Deadwood, Big Boulder, Granite Boulder, Butte, Davis, Vinegar, and Clear Creeks, and the Middle Fork John Day River. Clear Creek is proposed for bull trout critical habitat due to the stream having occupied bull trout spawning and rearing habitat (USDI 2002).

Clear Creek is the only stream within the Easy Fire Recovery project area with documented bull trout presence. However, it is assumed that use has occurred, or will soon occur, in Lunch Creek. Two years ago, access around Bates Mill on Bridge Creek was established, thereby providing bull trout with access to Lunch Creek. Clear Creek is currently listed as a water quality limited stream for summer temperature on the 2002 Oregon Department of Environmental Quality (ODEQ) 303d list from river mile 0 to river mile 12.7.

Very little data is available to determine the size of the bull trout subpopulation in Clear Creek. In 1992, surveys were conducted by Oregon Department of Fish and Wildlife (ODFW) which included the sampling of bull trout in two locations on Clear Creek. Results of the survey estimated a spawning density of 17 bull trout per mile. Using a minimum of three miles as an estimate of habitat, the estimated bull trout population in Clear Creek is 51 spawners. This estimate is rough, as the sampling was not randomized nor conducted without block nets (Claire and Gray 1993).

Upper John Day River (UJDR)

The John Day River metapopulation is classified as “low risk of extinction” (Buchanan *et al* 1997). Historical information prior to 1990 reveals that isolated sightings of bull trout were recorded only in Dads, Dixie, Beech, Laycock, and Pine Creeks of the UJDR Subbasin. However, small bull trout populations currently exist in Reynolds, Deardorff, Rail, Call, Roberts, and Indian Creeks, and in the upper John Day River (Buchanan *et al* 1997).

ODFW is currently implementing a life history study on bull trout in this subbasin. In 1991, ODFW recorded a bull trout spawner density of 0. Size ranges of bull trout sampled at that time ranged between 30 and 140 mm, indicating resident adults were not present or present at very low numbers. In the same year, ODFW recorded a bull trout spawner density in North Fork Reynolds Creek of 15. During this survey, bull trout sizes ranged from 90 to 230 mm indicating multiple age classes were present. In 1990, ODFW estimated the total spawner density in the Upper John Day River to be a minimum of 304, with sizes ranging from 60 to 300 mm, indicating all life history stages were present.

A total of eleven streams within the Upper John Day River Subbasin are proposed for bull trout critical habitat designation. These streams include North Fork Reynolds, Reynolds, Deardorff, Rail, Call, Roberts, Strawberry, Indian, Pine, and Canyon Creeks, and the John Day River.

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North Fork Reynolds Creek is proposed for bull trout critical habitat due to the stream having occupied bull trout spawning and rearing habitat (USDI 2002).

Bull trout are found in two streams near the Easy Fire Recovery Project area. North Fork Reynolds Creek and Mossy Gulch parallel the southwest project area boundary and could potentially be affected by project activities. North Fork Reynolds Creek and Mossy Gulch are not currently listed as a water quality limited streams on the 2002 ODEQ 303d list.

Conclusion

The Service concurs with your determination that the proposed Easy Fire Recovery Project *may affect, but is not likely to adversely affect* bull trout. In addition, the Service believes the effects to bull trout or proposed bull trout critical habitat, resulting from implementation of the recovery project, are considered insignificant. The Service's concurrence with this determination is based on the following:

1. It is anticipated there would be no measurable impacts to fish or fish habitat or change in baseline conditions since no harvest would occur within RHCAs or on areas with moderate to steep slopes (> 31 percent slope) that have a high burn severity rating and are located adjacent to streams.
2. Haul road maintenance (approximately 64.3 miles) may have short-term impacts on substrate from increased sediment during and immediately after implementation due to re-grading roads, cleaning plugged culverts, and cleaning blocked ditch lines. However, short-term increases in suspended sediment are not expected to reach levels that would measurably degrade downstream habitat from its current condition. In addition, it is unlikely that potential effects would measurably affect proposed bull trout critical habitat within or downstream of the proposed project in the long-term.
3. No direct effects are anticipated and indirect effects are minimized, through the implementation of the conservation measures included within the proposed action, to the point they would be insignificant, negligible, or discountable.
4. There is potential for long-term benefits to proposed bull trout critical habitat such as improved drainage, reduced potential for road failure at stream crossings, and reduced chronic sediment input to streams.

This concludes informal consultation pursuant to sections 7(a)(2) and 7(c) of the Act. However, if information reveals effects of the action may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; the action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this consultation; and/or, new species is listed or critical habitat is designated that may be affected by this action, the Forest will need to re-initiate consultation.

We appreciate your concern for listed species. The Forest is encouraged to continue to explore opportunities to manage pro-actively for the benefit of native species, and to promote the

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conservation of listed species as directed by section 7(a)(1) of the Act. If you have any questions on this concurrence, or require more information regarding this consultation, please contact Marisa Meyer or me at (541) 962-8584.

Sincerely,

Gary S. Miller
Field Supervisor

cc:

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