TO: LEVEL 1 TEAM; NATIONAL MARINE FISHERIES SERVICE
FM: JON RAYBOURN, FISHERIES BIOLOGIST
CC: PROJECT FILE
RE: CONSULTATION ON FUEL HAZARD REDUCTION PROJECT
DATE: JUNE 5, 2003

PROJECT: Rogue River Fuel Hazard Reduction Project

SPECIES AND HABITATS: Southern Oregon/Northern California (SONC) coho salmon and its Critical Habitat; Essential Fish Habitat for Commercially-Harvested Anadromous Fish Stocks. Essential Fish Habitat and Coho Critical Habitat are the same areas in this project and for the purposes of this document are considered equivalent.

EFFECTS DETERMINATION: NLAA

PROJECT LOCATION:

Agency: Medford District, Grants Pass Resource Area
HUC - 4: Lower Rogue River
HUC - 5: Rogue-Recreation Section
HUC - 6: Hellgate Recreational Section of the Rogue National Wild & Scenic River (Dunn and Applegate reaches). Other streams and watersheds intersect the project area only at their confluences with the Rogue (e.g., Grave, Galice, Pickett, Taylor, Hog, Stratton, Jumpoff Joe, Limpy, Shan, and Dutcher Creeks, and the Applegate River).

EA #: OR 110-03-xx (Rogue River Fuel Hazard Reduction)
WA: Rogue-Recreation Section Watershed Analysis, Medford BLM, January 1999

EXECUTIVE SUMMARY:

The Rogue River Fuel Hazard Reduction Project constitutes a May Effect, Not Likely to Adversely Effect action regarding coho salmon and/or coho critical habitat because of the low risk of sediment delivery resulting from: road maintenance and renovation activities, hazardous fuel reduction treatments, underburning, and use and decommissioning of landings and skid roads. Additionally, riparian canopy and subsequent shade will be sufficient to maintain all life history stages of fish. Considering these factors the project will produce discountable, benign, and insignificant effects to coho and/or coho critical habitat at the sixth and fifth fields.

Any existing non-vegetated skid trail or landing located in the riparian reserve will be decommissioned following use. Decommissioning will reestablish vegetation and subsequently reduce erosion and encourage revegetation of the sites.

Underburning will occur on streams containing coho and coho critical habitat. Ignition would not take place within 50 feet of the stream, but a backing fire could cross into the no treatment area to create a mosaic burn. Burning would be done when conditions allow for a cool

controlled burn, most likely in the fall, winter or early spring, therefore having an extremely small chance of mortality among larger trees. Burn objectives include the reduction of fuels created by vegetation treatments and consumption of smaller diameter down woody debris.

It is highly unlikely that salmonid survival and production will be adversely affected by fuel reduction treatments within the riparian reserves, due to the no treatment buffers on intermittent and perennial streams, retention of trees 12" DBH or larger within 150 feet of streams, and retention of trees 8-12" DBH within 75 feet of perennial streams.

I. PROJECT DESCRIPTION

A. BACKGROUND

This project is a Healthy Forests Initiative Project and is based upon the goals of the National Fire Plan. A majority of the project area is within a designated community at risk (CAR) or a wildland urban interface (WUI) area outside of a CAR.

The ***purpose of*** this proposed project is four-fold:

1. To reduce the current vegetative fuel hazard within the Hellgate Recreation Section of the congressionally designated Rogue National Wild & Scenic River (RNWSR);
2. To create vegetation / fuel conditions that will reduce fire behavior (intensity and rate of spread) such that in the event of a wildfire (a) the threat to communities and residences will be reduced, (b) the probability of residential and Wild and Scenic river values surviving will improve, and (c) suppression effectiveness as well as firefighter and public safety will be enabled.
3. To implement vegetation / fuel changes in a manner consistent with the protection and enhancement of the river's Outstandingly Remarkable Values (particularly scenic) and the management direction of the Medford District Resource Management Plan; and
4. To create a sustainable mosaic of vegetation and fuel types / profiles that are more reflective of healthy forest conditions and which will facilitate protection of property and Wild & Scenic river values into the future.

The ***need for*** this project is that the fire hazard within the Hellgate Recreation Section of the Rogue National Wild & Scenic River has been increasing for many years due to natural vegetation growth and fire exclusion. Fire risk is high due to extensive residential and recreation use. Property and wild and scenic river values would be significantly and adversely impacted if a high intensity, high severity wildfire occurred.

B. AFFECTED ENVIRONMENT

The project area includes the Applegate and Dunn reaches of the Rogue River, as well as approximately 0.25 miles of every stream that flows into the Rogue in these reaches. Fish species present in the Rogue mainstem and these tributary streams include: fall and spring chinook salmon, coho salmon, winter and summer steelhead, cutthroat trout, Pacific lamprey, Klamath small scale sucker, speckled dace, and sculpin species. SONC coho salmon are

federally listed as threatened and Pacific lamprey is a Bureau tracking species in Oregon. Chinook are not federally listed but are an Oregon Special Status Species. Klamath Mountain Providence Steelhead were ruled not warranted for listing in March 2001.

The RAMP EIS (USDI 2003) includes a detailed description of the status of fish populations and the condition of significant habitat features in Rogue in the project area. There are 14 main fall chinook salmon spawning areas on the Rogue itself. Steelhead trout spawn in at least 11 streams which flow into the Rogue within the project area. Coho salmon spawn in at least 8 streams within the project area. The Rogue mainstem provides rearing habitat for chinook as well as the fish that are spawned in the tributary streams.

Stream and fisheries conditions in the main tributary streams in the project area are included in the Grave Creek (USDI April 1999), Jumpoff Joe (USDI June 1998), Rogue-Recreation Section (USDI January 1999), and Murphy (USDI February 2000) watershed analyses. The Rogue and several tributaries in the project area are DEQ 303(d) listed as water quality-limited streams based on temperature and other factors. In general, the main tributary streams in the project area are characterized as having low large woody debris complexity, shade levels <60% and low levels of mature trees (>32-inch DBH) within 100 feet of the streams, based on Oregon Department of Fish and Wildlife (ODFW) Habitat Benchmarks. Salmon production and survival are limited in these streams by these factors.

C. PROPOSED ACTION

This project area encompasses a total of approximately 8,657 acres, which includes approximately 900 acres of river channel. The total number of acres proposed for treatment acres is 7,732. Approximately 4,270 acres are within the Riparian Reserve, and 3,462 are outside of Riparian Reserve.

The proposed action reflects three different scales of fuel hazard reduction work. The primary emphasis is on the creation of defensible space around structures (homes and businesses) in the project area. Outside of this defensible space, the proposed action treats ground fuels, ladder fuels and tree canopy fuels to different degrees. Design of the project focuses primarily on melding fuel reduction goals with visual resource management goals. Management goals and objectives for other resources such as fisheries are brought into the proposal through project design features.

The overall fuel reduction goal is to reduce the number of high-risk fire days. Treatments will not eliminate the risk of wildfire. Fuel treatment objectives are to: 1) reduce potential ground fire intensity by reducing fuels such that flame lengths are =4', b) reduce the potential for crown fire initiation by reducing surface and ladder fuels so that crown base height is 6 – 14', and 3) reduce the forest's ability to sustain a crown fire by reducing crown bulk density.

The reduction of crown bulk density would be an objective in high value areas (such as communities) where fire behavior modeling revealed a risk from a crown fire and the opportunity exists to reduce the risk through the removal of trees up to 21" DBH. Within

Riparian Reserves, trees with 12-21" DBH would only be removed outside of 150 ft. from a stream, and canopy closure of 60% would be retained (cf. Project Design Features, below).

From a visual resource management perspective, the BLM's VRM Class I standards guide the level of permissible change to the characteristic landscape. It determines how rapidly vegetation and fuel hazard conditions can be shifted from their current condition to a more fire resilient condition. Careful strategic design of the vegetation treatments is key to meeting this goal. Multiple entries and smaller incremental changes will, in some cases, be needed to meet VRM standards. The degree of acceptable change depends upon whether the treatment area is within a seen area or a seldom seen area (from the perspective of a casual observer on the river, at recreation sites or on the main roads) and the degree to which a particular location is a focal point. As a result, treatments along the Rogue and in many other Riparian reserves would be subtle and spread out over the 10 year life of the project.

A variety of methods would be used inside and outside of the riparian reserves to meet fuel hazard reduction objectives (slashing, handpiling, slashbusting, chipping, felling, etc.). Prescriptions within riparian reserves include provisions for maintaining stream shade, streambank stability, and future large woody debris recruitment. The following project features are designed to maintain important riparian functions: a) a no treatment area of 50' would be maintained along all streams; b) all trees >12?DBH within 150' of any stream would be retained; c) all trees >8?DBH within 75' of a perennial stream would be retained; and d) canopy closure within a riparian reserve would be maintained at 60+%. Where the existing closure is <60%, vegetation / fuel treatments would be limited to the understory.

Fuel hazard reduction would be accomplished through use of a slashbuster where possible. The slashbuster would not treat areas within 50 feet of perennial and intermittent streams, with the treads stopping at 75 feet. Where slashbuster operations are not possible, other methods would be used, as described above.

Prescribed burning could occur in riparian reserves to achieve fuel reduction and wildlife habitat objectives with the following caveats: a) hand piles closer than 50' of a stream would not be burned, b) no direct ignition would be done within the 50' no treatment zone, and c) underburns initiated outside of the 50' buffer would be allowed to back into this buffer as long as the underburn is of low intensity and the midlevel and upper canopies are not at risk. The burn plan for treatments adjacent to perennial streams would include the objectives of retaining an unburned strip of duff next to the stream averaging between 25-50 feet wide, as well as retention of large woody debris (LWD) within 50 feet. These objectives would be met through means such as igniting well outside 50 feet, watering down or removing fuels around at-risk LWD, constructing handlines, etc.

Within the riparian reserve, approximately 4.1 miles will continue to be maintained. Much of this maintenance is on the paved Galice Road and is within the riparian reserve as it crosses small streams which flow into the Rogue River. In the project area outside of riparian reserves, approximately 8.0 miles will continue to be maintained to current BLM standards for minimal hydrologic disturbance. In addition, an estimated 2 miles of existing skid trails within the

riparian reserves and 7 miles outside the riparian reserves would be decommissioned following use. Maintenance and decommissioning would be done in accordance with the project design criteria in the Southwest Oregon Biological Opinion for Programmatic Actions and the Medford District BMPs. Applicable practices have been incorporated into the Project Design Features (cf. below).

Existing operator spur roads would be used whenever possible to access fuel treatment areas. In addition, an estimated 1.0 miles of new, semi-permanent road construction (spur roads) located outside of riparian reserves is proposed. The roads would be decommissioned following use. No new permanent roads will be constructed in the riparian reserve or the matrix. All newly constructed spur roads will be decommissioned following use.

D. PROJECT DESIGN FEATURES

- Within riparian reserves, trees to be removed from the site would be directionally felled to pre-approved skid trails.

- To maintain stream shade: a) a no treatment area of 50' would be maintained along all streams; b) all trees >12?DBH within 150' of any stream would be retained; c) all trees >8?DBH within 75' of a perennial stream would be retained; and d) canopy closure within a riparian reserve would be maintained at 60+%. Where the existing closure is <60%, vegetation / fuel treatments would be limited to the understory.

- Hardwoods, especially California black oak, would be retained and encouraged where appropriate.

- Prescribed burning could occur in riparian reserves to achieve fuel reduction and wildlife habitat objectives with the following caveats: a) hand piles closer than 50' of a stream would not be burned, b) no direct ignition would be done within the 50' no treatment zone, and c) underburns initiated outside of the 50' buffer would be allowed to back into this buffer as long as the underburn is of low intensity and the midlevel and upper canopies are not at risk.

The burn plan for treatments adjacent to perennial streams would include the objectives of retaining an unburned strip of duff next to the stream averaging between 25-50 feet wide, as well as retention of large woody debris (LWD) within 50 feet. These objectives would be met through means such as igniting well outside 50 feet, watering down or removing fuels around at-risk LWD, constructing handlines, etc.

There will be no slashbuster treatments within 50' of perennial or intermittent streams. The machine's tracks / treads would be kept at least 75' from of these streams. Post slashbuster treatment burning would comply with burning within riparian reserve design criteria described above. Pre-existing coarse wood material greater than 10" diameter would be protected from shredding or damage. All snags would be protected. If a snag is felled for safety reasons, it would be retained and protected on site.

- No new skid trails or stream crossings would be constructed in riparian reserves. Existing skid trails could be used if they are stable and unrecovered. These trails would be decompacted and planted according to prescription, and covered with mulch or small diameter slash (less than 8? thick.

- Yarding tractors (D-4 size) used outside of riparian reserves would be confined to designated skid trails and would be restricted to soil moisture <25%. Main skid trails would be decommissioned (ripped and water barred) after use. Skid trails would be covered with slash, chipped material or debris to protect the mineral soil surface. Low ground pressure (<4 psi) equipment would be permitted without designated skid trails if soil moisture is <20% and it is able to operate on areas with at least 80% slash cover.

- Existing roads and temporary spurs would be utilized whenever possible to minimize new road construction. New roads would be located, designed and constructed to meet VRM guidelines. Temporary spurs would be obliterated after use by restoring natural drainage patterns and placing a combination of brush, logs, boulders, and/or stumps across the disturbed area.

- BLM roads used for bio-mass removal and haul would be maintained as needed. Road maintenance and decommissioning would comply with Best Management Practices (Medford District RMP, Appendix D-VII). If follow up treatment is scheduled a year or more after initial treatment, roads would be waterbarred, seeded, or mulched, or blocked as needed to prevent wet season vehicle use.

- Fire control lines, if needed, would be manually constructed (e.g., chainsaws, pulaskis, shovels). Waterbars would be installed based on soil type and slope. Suppression crews and equipment remain on site after prescribed burns to perform post-burn patrol, and mop-up would occur to prevent reburn or fire escape. Burn plans include escape contingency measures to provide standards for keeping burns within prescription. Any fire outside of the primary or secondary unit is not approved within the prescription. All slop overs and spot fires will be lined as soon as practical with 100% mop-up occurring and the location noted on the patrol map.

E. PRESCRIPTION TABLE

Rogue River Fuel Hazard Reduction				
Total Project Area = 8,657 Acres	**INSIDE RIPARIAN** Fuel Treatment (Acres)	**OUTSIDE RIPARIAN** Fuel Treatment (Acres)	**INSIDE RIPARIAN** Road Activities (miles)	**OUTSIDE RIPARIAN** Road Activities (miles)
Huc-5 Watershed **Rogue-Recreation Section** (93,316 acres)	Total Treatment = 4270	Total Treatment = 3462	Spur construction= 0 Decommission of existing skid trails estimated at <2.0 Maintenance = 4.1	Spur Construction and decommission following use estimated at < 1.0 Decommission of existing skid trails estimated at <7.0 Maintenance = 8.0

F. PROXIMITY OF COHO TO PROPOSED ACTIONS

The project area comprises the Applegate and Dunn Reaches of the Rogue River-Recreation Section and includes a corridor of land approximately 0.25 mile wide on each side. Coho salmon spawn in at least 8 streams within the project area. Coho critical habitat in the project area includes approximately 0.25 miles of each of these streams as they flow into the Rogue River, and in addition, 0.25 miles of all steelhead streams where coho are not currently found (at least 3 streams). Consequently, all treatments would be less than approximately 0.25 miles from coho and coho critical habitat.

Coho and coho critical habitat are present in the following: Hellgate Recreational Section of the Rogue National Wild & Scenic River (Dunn and Applegate reaches), Grave, Galice, Pickett, Taylor, Hog, Stratton, Jumpoff Joe, Limpy, Shan, Dutcher, Madams, and Pass Creeks, and the Applegate River. The only part of these creeks that is within the project area is the lower 0.25 mile at the confluence with the Rogue.

III. EFFECTS OF PROPOSED ACTIONS TO COHO AND COHO CRITICAL HABITAT

A. ROAD MAINTENANCE AND DECOMMISSIONING

Within the riparian reserve, approximately 4.1 miles will continue to be maintained. In the project area outside of riparian reserves, approximately 8.0 miles will continue to be maintained to current BLM standards for minimal hydrologic disturbance. In addition, an estimated 2 miles of existing skid trails within the riparian reserves and 7 miles outside the riparian reserves would be decommissioned following use.
It is anticipated that the long term beneficial effects from road maintenance and decommissioning will maintain downstream salmon survival and production. Long term beneficial effects from road activities include sediment reduction, improving road conditions for peak runoff flows, and better water drainage.

Minimal, insignificant, short term pulses of sediment may occur from road maintenance and decommissioning but the effects are not likely to adversely affect coho or coho critical habitat. The amount of sediment delivery would be so small as to not cause an increase in streambed embeddedness, an increase of fines in the gravel, or turbid water. Road maintenance and/or renovation will have negligible affects to coho migration, spawning, egg incubation, rearing, and feeding. Sediment delivery associated with road maintenance and renovation will not cause significant degradation or modifications to coho habitat.

B. OPERATOR SPUR CONSTRUCTION AND DECOMMISSIONING

Existing operator spur roads would be used whenever possible to access fuel treatment areas. In addition, an estimated 1.0 miles of new, semi-permanent road construction (spur roads) located outside of riparian reserves is proposed. The roads would be decommissioned following use. No

new permanent roads will be constructed in the riparian reserve or the matrix. All newly constructed spur roads will be decommissioned following use.

The operator spur roads to be constructed and decommissioned are short and discontinuous in nature and would be located on stable ridge tops and midslopes. The location of roads on ridge tops and midslopes will not affect floodplain connectivity. Sediment delivery would be less than negligible, due to the location of the roads on ridge tops and midslopes. Road density will not be increased, because the roads will be decommissioned following use. Sediment delivery to streams from decommissioned skid roads would be eliminated by buffers of undisturbed vegetation and duff between the skid roads and the streams.

The construction and decommissioning of operator spur roads will have negligible effects to riparian habitats, stream habitats, and hydrologic function at the sixth field level. The construction and decommissioning of the proposed operator spur roads will not result in significant habitat degradation or modification of coho habitat, because of their location on stable ridge tops and midslopes. Sediment delivery associated with operator spur road construction and decommissioning will not cause significant degradation or modifications to coho habitat, because sediment delivery would be short-term and minimal in quantity. The effects of these actions will not likely affect coho as they complete their life history requirements such as migration, spawning, egg incubation, rearing and feeding.

C. USE AND DECOMMISSIONING OF LANDINGS AND SKID ROADS

Some existing roads and landings have been constructed in the past within the riparian reserve. If these roads and existing landings are stable and unrecovered, they would be reused to minimize additional new road or landing construction. These skid roads or landings would be decommissioned following use, with such methods as ripping/decompaction, water barring, seeding, tree planting, and blocking, after use. No new skid roads or new stream crossings will be constructed in riparian reserves.

A net decrease in skid roads and landings in the riparian reserve will occur. Tractors will be restricted to the use of existing skid roads thereby reducing areas of compaction and maintaining stream bank stability. The use and subsequent decommissioning of pre-existing but unrecovered skid roads in the riparian will provide a long term benefit for aquatic resources by reducing sediment delivery and re-establishing canopy cover on riparian roads. Decompacting skid roads will increase soil absorption and infiltration.

Any skid trails and landings that are decompacted would be located on stable areas more than 50 feet from streams, and sediment delivery to coho habitat would be unlikely because of improved infiltration and the retention of a buffer of undisturbed duff. Behavior such as feeding, migration, and spawning as well as the life history requirements of coho will not likely be affected. Based on an analysis of the effects, we have determined that the use and decommissioning of pre-existing skid roads in the riparian reserve are not going to significantly degrade or modify coho habitat.

D. FUEL HAZARD REDUCTION TREATMENTS IN THE RIPARIAN RESERVE

On all streams, handpile burning and underburning would be outside of 50 feet. Ignition would not take place within 50 feet of the stream, but a backing fire could cross into the no treatment area to create a mosaic burn. Burning would be done when conditions allow for a cool controlled burn, most likely in the fall, winter or early spring, therefore having an extremely small chance of mortality among larger trees. The burn plan for treatments adjacent to perennial streams would include the objectives of retaining an unburned strip of duff next to the stream averaging between 25-50 feet wide, as well as retention of large woody debris (LWD) within 50 feet. These objectives would be met through means such as igniting well outside 50 feet, watering down or removing fuels around at-risk LWD, constructing handlines, etc.

Small woody material would be consumed in the fire, but large coarse woody material would most likely be left intact. The movement of prescribed fire within the riparian areas is dependent on fuel distribution and moisture, relative humidity, and fuel loading. During underburns in riparian areas, higher fuel moisture and relative humidity combine to slow the movement of fire, reducing the risk of mortality of large trees and consumption of snags and large down wood. The cool, low intensity fires will most likely not result in the consumption of snags or large trees within the riparian reserve. Units with moderate to high fuel levels will be handpiled and burned, reducing the risks associated with underburning. Burn objectives would include the retention of root networks that act to stabilize banks of streams with the potential to deliver sediment to coho habitat. Handlines constructed previously in riparian areas have been found to retain infiltration and not channel runoff into streams (pers. observ., Raybourn 2002). Waterbarring on these handlines has been used as a precaution to minimize erosion, although it has been found to be unnecessary in some cases.

Sediment

Direct Effects - During a controlled burn, it is unlikely that fire would back down all the way into the no treatment area and to the edge of any stream. However, if this did happen, small amounts of sediment and ash could be suspended in the stream. The small amounts of sediment involved, combined with the likelihood of high flows at the time of suspension make it very unlikely that this event would have an adverse effect on coho, coho critical habitat, Essential Fish Habitat, or any other fish or aquatic resources. If sediment were to reach the Rogue under the same conditions, it is very unlikely that it would adversely affect the fish species present. This would be due to the small amount of fine sediment compared to the volume of water in the river.

Indirect Effects- Reducing fuel loading in the drainages through fuel treatments and prescribed burning would decrease the risk of catastrophic fire resulting in high severity burning. By reducing the likelihood of catastrophic events, the potential for erosion and sedimentation from increased runoff would be diminished. Lowering the chance of increased sedimentation from a stand destroying fire would increase the likelihood of salmonid survival in the egg to fry stage. Decreasing sediment delivery and associated turbidity indirectly increases the chance of survival of juvenile salmonids by avoiding gill scour and associated mortality from disease.

Channel Morphology

Direct Effects - The direct effects to channel morphology anticipated would result from the possibility that a backing fire could cause a tree or snag to fall into a stream. A log falling into the stream channel could result in the scouring of a pool and/or the recruitment of gravel and storage of sediment. These effects would be beneficial and long term.

Indirect Effects - By reducing the risk of catastrophic fire events, the risk of negative impacts on channel morphology would be decreased. Slope failure would be less likely to increase. Pulses of sediment which can change channel morphology by filling pools and burying riffles would be less likely. Degradation of spawning gravels and loss of pool rearing habitat would be less likely to occur, and so the survival of salmonids in the egg, fry, and juvenile stages would not decrease.

Temperature

Direct Effects - Vegetative treatments are not anticipated to affect stream shade and temperature because the restrictions on cutting trees adjacent to perennial streams would be sufficient to protect shade (e.g., retention of all trees >8" DBH within 75 ft. of perennial streams). However, if a backing fire caused a tree or snag to fall adjacent to a perennial stream, then there could be a direct effect on stream shade and therefore, temperature. In both cases, the effects anticipated would be negligible and short term due to the infrequency of the event, the distribution of the event over time and the landscape, and the ability of the surrounding canopy to grow into a light gap and reestablish shade.

Indirect Effects - By reducing the risk of a catastrophic fire event occurring, an extensive high severity burn that would diminish shade and increase stream temperatures in a given drainage is less likely. Juvenile salmonids which depend on cool water for rearing would benefit because the adverse effect from even a short term increase in temperature resulting from a stand replacement fire would be lessened.

Large Woody Debris

Direct Effects - Underburning would result in a mosaic pattern of lightly burned areas that are discontinuous and surrounded by unburned shredded slash and vegetation. Small woody material would be consumed in the fire, but large coarse woody material would be left intact. The cool, low intensity fires would most likely not result in the consumption of snags or large trees within the riparian reserve. The movement of prescribed fire within the riparian areas is dependent on fuel distribution and moisture, relative humidity, and fuel loading. During underburns in riparian areas, higher fuel moistures and relative humidities combine to slow the movement of fire, reducing the risk of mortality of large trees and consumption of snags and large down wood. In addition the potential removal of trees 12-21" DBH would only take place outside of 150 ft. from streams and only where 60% canopy closure could be retained. Within 1 site potential tree of streams, future recruitment of down wood and large woody debris would be maintained.

Indirect Effects - By reducing the risk of a stand destroying fire in the riparian reserves of the project area, the recovery of mature forests would be advanced and the opportunity for future recruitment of large woody debris into these streams would be increased. Large diameter (>24? DBH) trees are required adjacent to streams for the recruitment of "key pieces". Key pieces are important for creating habitat complexity for rearing juvenile salmonids and cover for adults during migration. Large wood is critical in determining the productivity of the stream, as it affects channel stability, stream hydraulics, pool formation and quality, nutrient and gravel retention, and macroinvertebrate diversity. The future recruitment of large trees into streams increases the possibility for recovery of properly functioning large woody debris and increases the production and survival of salmonid populations dependent on the tributary streams of the project area.

Potential effects to streams from thinning within the Riparian Reserve are anticipated to be highly localized, unmeasurable, negligible, and short term at the project level (6th and 7th field scales) and fifth field scale. The effects to coho or coho critical habitat are not likely to be adverse because of the efforts to eliminate sediment delivery mechanisms and disturbance through project design features.

Based on an analysis of the above effects, we have determined that the effects of the proposed fuel hazard reduction treatments would not be likely to disrupt normal behavior patterns such as migration spawning, egg incubation, rearing and feeding. Significant modifications or degradations of habitat will not occur. The habitat is expected to improve as late successional characteristics are achieved.

F. SLASHBUSTER TREATMENTS

The slashbuster would not treat areas within 50 feet of perennial and intermittent streams, with the treads stopping at 75 feet. The slashbuster machine will be restricted to slopes generally less than 40%. The slashbuster will only cross intermittent and perennial streams at preexisting crossings. Low intensity (winter/spring) underburning would occur after mechanical treatment within 1-10 years if needed to reduce fuel hazard risk. Fires will be allowed to back into the no treatment areas, but no ignition will occur within 50 feet of streams

Effects from slashbuster and subsequent underburning will be highly localized, unmeasurable, negligible, and have short term impacts. Streambank stability will be maintained with the tracks of the slashbuster stopping at 75 feet. Due to the fact the tracks are riding on an 8" to 12" layer of shredded /chopped vegetation, only 2 - 4% of the project area will have signs of soil compaction. This will result in the reduction of surface disturbance, erosion and sedimentation, and soil compaction. Associated underburning would result in a mosaic pattern of lightly burned areas that are discontinuous and surrounded by unburned shredded slash and vegetation. Pre-existing coarse wood material greater than 10" diameter would be protected from shredding or damage. All snags would be protected. If a snag is felled for safety reasons, it would be retained and protected on site.

Based on an analysis of the above effects, we have determined that the proposed slashbuster and subsequent underburning will not cause significant degradation or modifications to coho habitat. The slashbuster and the underburning will have negligible affects to coho migration, spawning, egg incubation, rearing, and feeding.

SUMMARY/CONCLUSION

Potential effects to fish and aquatic resources from fuel hazard reduction within the Riparian Reserve are anticipated to be highly localized, negligible, and short term at the project level (6th and 7th field scales) and fifth field scale. Mechanical vegetation treatments and handpile burning are not anticipated to have any direct effect. Prescribed underburning may incidentally cause ash and sediment to enter streams immediately adjacent to a burn. The amount, timing and duration of sediment delivery would be so small and of short duration that it would not kill aquatic insects used as food and would not embed spawning gravels affecting the eggs and alevins. Any ash or sediment that might reach coho or coho critical habitat would be negligible and would not likely disrupt spawning, migration, egg incubation, rearing or feeding and would not cause degradation or modification of habitat. The turbidity would be within the range of natural variability for the streams affected. Further, any sediment would be delivered during the wet season when flows are higher, thereby reducing effects to coho and other salmonids. Long term increases in canopy cover will contribute to lowering summer water temperatures. Increased recruitment of large woody debris into streams will improve channel complexity and instream habitat. The future recruitment of large woody debris would not be reduced, therefore having no negative effect on future instream habitat conditions. Improved rearing habitat would increase the survival of juvenile salmonids. Retention of shade on perennial streams will prevent stream temperature increases. It is anticipated that the long term beneficial effects will maintain downstream salmon production and survival and the environmental conditions will be maintained. The effects to coho or coho critical habitat are not likely to be adverse because of the efforts to eliminate sediment delivery mechanisms, retain shade, and provide for future LWD recruitment through project design features.

DICHOTOMOUS KEY FOR MAKING SECTION 7 DETERMINATION OF EFFECTS

Name and location of action: Grants Pass Resource Areas, Medford District
Project: Rogue River Fuel Hazard Reduction Project

1. Are there any proposed/listed anadromous salmonids and/or proposed/designated critical habitat in the watershed or downstream from the watershed?

   NO ..... No effect
   YES ..... **May affect, go to 2**[1]

2. Will the proposed action(s) have any effect whatsoever[1] on the species and/or critical habitat?

   NO ..... No Effect
   ..... **YES Go to 3**

3. Does the proposed action(s) have the potential to hinder attainment of relevant properly functioning indicators (from checklist)?
   ..... **NO Go to 4**
   YES ..... Likely to adversely affect[2]

4. Does the proposed action(s) have the potential to result in "take"[3] of proposed/listed anadromous salmonids or destruction/ adverse modification of proposed/designated critical habitat?

   A. There is a negligible (extremely low) probability of take of proposed/listed anadromous salmonids or destruction/adverse modification of proposed/designated critical habitat .....
   .....**Not likely to adversely affect**

   B. There is more than a negligible probability of take of proposed/listed anadromous salmonids or destruction/adverse modification of proposed/designated critical habitat .....
   ..... Likely to adversely affect[4]

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[1] "Any effect whatsoever" includes small effects, effects that are unlikely to occur, and beneficial effects, i.e. a "no effect" determination is only appropriate if the proposed action will literally have no effect whatsoever on the species and/or critical habitat, not a small effect, an effect that is unlikely to occur, or a beneficial effect.

[2] Document expected incidental take on reverse side of this key.

[3] "Take" - The ESA (Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "harass" as "actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering".

III. ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS

A. TEMPERATURE

The Rogue River Recreation Section ("Rogue-Rec") is 303(d) listed by the Oregon Department of Environmental Quality (DEQ) as water quality limited due to high summer temperatures. The Rogue-Rec fifth field watershed is not properly functioning for temperture. The current condition would be maintained.

Direct Effects

Vegetative treatments are not anticipated to affect stream shade and temperature because the restrictions on cutting trees adjacent to perennial streams would be sufficient to protect shade. In addition, if a backing fire caused a tree or snag to fall adjacent to a perennial stream, then there could be a direct effect on stream shade and therefore, temperature. In both cases, the effects anticipated would be negligible and short term due to the infrequency of the event, the distribution of the event over time and the landscape, and the ability of the surrounding canopy to grow into a light gap and reestablish shade.

Indirect Effects

By reducing the risk of a catastrophic fire event occurring, an extensive high severity burn that would diminish shade and increase stream temperatures in a given drainage is less likely. Juvenile salmonids which depend on cool water for rearing would benefit because the adverse effect from even a short term increase in temperature resulting from a stand replacement fire would be avoided to a degree. The above actions would not decrease shade cover and therefore will not affect stream temperatures at the watershed level.

B. SEDIMENT

The watershed is currently "at risk" for sediment and turbidity. The current condition would be maintained and the watershed will remain "at risk" for sediment.

Direct Effects

During a controlled burn, it is unlikely that fire would back down all the way into the no treatment area and to the edge of any stream. However, if this did happen, small amounts of sediment and ash could be suspended in the stream. The small amounts of sediment involved, combined with the likelihood of high flows at the time of suspension make it very unlikely that this event would have an adverse effect on coho, coho critical habitat, Essential Fish Habitat, or any other fish or aquatic resources. If sediment were to reach the Rogue under the same conditions, it is very unlikely that it would adversely affect the fish species present. This would be due to the small amount of fine sediment compared to the volume of water in the river.

Indirect Effects

Reducing fuel loading in the drainages through fuel treatments and prescribed burning would decrease the risk of catastrophic fire resulting in high severity burning. By reducing the likelihood of catastrophic events, the potential for erosion and sedimentation from increased runoff is diminished. Lowering the chance of increased sedimentation from a stand destroying fire increases the likelihood of salmonid survival in the egg to fry stage. Decreasing sediment delivery and associated turbidity indirectly increases the chance of survival of juvenile salmonids by avoiding gill scour and associated mortality from disease.

C. POOL QUALITY

Pool character and quality are currently "at risk" in the watershed. On the watershed level, pool quality will remain "at risk".

The quality of some pools located in the project area would over time, improve as late successional conditions increase in riparian reserves. Fuel reduction treatments in the riparian reserve would accelerate late successional conditions, such as, structural diversity, large tree diameter, and future large woody debris supply, thereby increasing shade and large woody debris recruitment at site specific locations within the project area.

D. OFF-CHANNEL HABITAT

Off-channel habitat is "at risk" within the watershed. The current condition would be maintained. Channelization resulting from past logging practices has prevented some streams from meandering and forming side channels. Sediment delivery has compromised off-channel habitat by filling the areas in with fines At site specific locations within the project area, off-channel habitat could improve as large woody debris is recruited and side channels become functional again.

E. REFUGIA

The proposed actions will not fill in pools with sediment or decrease shade cover. Refugia will remain "at risk" at the watershed level.

F. WIDTH/DEPTH RATIO

Elevated sediment loads within the watershed have increased channel width and decreased channel depth as pools become filled. The amount of sediment delivered to critical habitat from implementing the proposed actions would be discountable and insignificant. The width/depth ratio at the watershed level will continue to be "at risk" from activities unrelated to this proposed action.

G. STREAMBANK CONDITION

Streambank conditions within the watershed are "at risk" and will remain at this level. At the site specific locations within the project area, streambank conditions will not be degraded. Fuel reduction

treatments will not take place within the no treatment zone of the riparian reserve. Ignition will not take place within the no treatment zones, but a backing fire could cross into the no treatment zones imitating a naturally occurring low intensity ground fire. These actions will not cause a reduction in streambank conditions. Trees greater than 12"DBH, outside of the 150 foot buffer, would be directionally felled and lined out by a skidder working from an existing unrecovered skid trail or road. No new stream crossings will occur. Alterations to streambanks are not anticipated because of absence of equipment entry into the no treatment zones.

H. FLOODPLAIN CONNECTIVITY

The floodplain connectivity is naturally limited and is further degraded due to roads, channelization, agricultural practices, and downgrading of the channels on private and federal lands. Channelizing the streams has disconnected the floodplain from the channel and has decreased fish rearing capability over the past century. The streams in the watershed are prevented from meandering and forming side channels. The connectivity will not be restored at the watershed level as a result of the proposed actions; it will be maintained at the current "at risk" conditions.

I. PEAK/BASE FLOWS

The proposed actions will not restore currently "at risk" peak/base flows at the watershed level, but will maintain them. Decommissioning preexisting skid trails used in the riparian reserves and ripping and planting temporary operator spurs will increase infiltration of exposed groundwater, but will have no detectable effect on returning peak/base flows to more natural levels

J. DRAINAGE NETWORK INCREASE

Long term beneficial effects of ripping and seeding operator spur roads, and the decommissioning of preexisting skid trails used within the riparian reserve include improved infiltration and drainage within the project area. The proposed actions will not affect the drainage network at the watershed level and it will remain not properly functioning.

K. ROAD DENSITY AND LOCATION

The road density within the project area will be reduced as a result of decommissioning 0.5 mile of road in the matrix and decommissioning any preexisting skid roads used in the riparian reserves. There will be construction of operator spur roads outside of the riparian reserve, however these roads will be decommissioned following use. No new road construction is proposed within the riparian reserve. Within the project area the road density will not be reduced, but unrecovered skid trails would be returned to riparian function. Road density and location of roads will remain not properly functioning at the watershed level.

L. DISTURBANCE HISTORY

The aquatic environment within the watershed has been degraded as a result of past land use practices.

Major changes in the watershed have occurred from agricultural water diversions, timber harvesting and road development. Diversions from streams for irrigation and mining purposes combined with century old water rights have significantly decreased the amount of water available to fish, especially during low flow periods. Timber harvesting in riparian reserves in parts of the watershed has caused a loss of large woody debris and a diminished recruitment of future large woody debris. Road development near streams has channelized the streams, limiting stream meander. Presently there is little connectivity between the streams and the floodplains. The disturbance history indicates that the aquatic environment is not properly functioning.

M. LANDSLIDE RATES

Within unstable areas where there is active soil movement (such as slip plains, step benches, recent debris flows or debris slides) there will be no vegetative treatment. Within areas with indications of past movement that are potentially unstable, some vegetative treatment may occur where long term root strength can be maintained or increased. This would include fuel treatments such as hand piling and slashing. The landslide rates at the watershed level will not be affected and they will remain "at risk". The proposed actions will not promote landslides within the project area.

N. RIPARIAN RESERVE

In the past, timber harvesting in the riparian reserve in parts of the watershed caused a loss of large woody debris and a diminished recruitment of future large woody debris. The proposed actions will accelerate the stand to late successional conditions, increase the future recruitment of large woody debris, reduce fuel loading in the riparian reserve, and reduce the chance of a stand replacing fire. The riparian reserves are "at risk" within the watershed, but will be improved at site specific levels within the project area in the long-term. The current condition would not change at the sixth field scale, however.

Checklist for Documenting Environmental Baseline and Effects of Proposed Action(s) on Relevant Indicators

Name and location of action: Rogue River Fuels Pilot Project

Watersheds: Rogue-Rec. Section HUC-5

FACTORS / INDICATORS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
	Properly Functioning [1]	At Risk [1]	Not Propr.[1]	Restore [2]	Maintain [3]	Degrade [4]
Water Quality: Temperature			WA		EA	
Turbidity		WA			EA	
Chemical Contam/Nutrients	PJ				EA	
Habitat Access: Physical Barriers			WA		EA	
Habitat Elements: Sediment		PJ			EA	
Large Woody Debris		PJ			EA	
Pool Character and Quality		PJ			EA	
Off-channel Habitat		WA			EA	
Channel Cond. & Dyn. Width/Depth Ratio		WA			EA	
Streambank Cond.		PJ			EA	
Floodplain Connectivity		WA			EA	
Flow/Hydrology: Changes in Peak Flow		PJ			EA	
Watershed Condition: Road Dens. & Loc.			PJ		EA	
Disturbance History			PJ		EA	
Landslide and Erosion Rates			PJ		EA	
Riparian Reserves		PJ				

1 Environmental Baseline conditions are derived from Forest Service, BLM and ODFW stream survey data and synthesis of watershed analysis findings. Document your baseline condition findings with the source, e.g. WA (watershed analysis), NEPA, SS

(stream surveys- specify whether BLM, FS,ODFW,other), PJ (professional judgment), Monitoring (MON), etc. Explain with a footnote at bottom of checklist your abbreviation if not listed here.

2 Effects of the Action(s) are derived from scoping for the environmental document (NEPA) or the environmental document supporting the proposed action(s). Document your sources with abbreviations and explanatory footnotes as discussed above.

3 These three categories of function ("properly functioning", "at risk", and "not properly functioning") are defined for each indicator in the "Matrix of Factors and Indicators" (Table 1.)

4 For the purposes of this checklist, "restore" means to change the function of an "at risk" indicator to "properly functioning" or to change the function of a "not properly functioning" indicator to "at risk" or "properly functioning", moving conditions towards recovery.

Name of Biologist: J. Raybourn Date: 6-5-03

IV. ESSENTIAL FISH HABITAT

The Magnuson-Stevens Act designates Essential Fish Habitat (EFH) for coho and chinook salmon. Portions of the proposed project occur within EFH. Actions which have the most potential to produce adverse effects are underburning, road maintenance, and the use and decommissioning of landings and skid roads in the riparian reserve. The project design features and best management practices adequately mitigate or eliminate the potential adverse effects to EFH. The executive summary discusses the analysis for the effects of the proposed actions.