Decision Memorandum on Action and for Application of:
Categorical Exclusion 516 DM2, Appendix 1, 1.12 – Hazardous Fuel Reduction
PLAN CONFORMANCE AND CATEGORICAL EXCLUSION DETERMINATION
Bureau of Land Management (BLM)

Project Name:	Upper Bear Valley Pile Burn	CX Log #:	OR-014-CX-08-03
Location:	T40S R7E Sec11		
BLM Office:	Lakeview District , Klamath Falls Resource Area	County:	Klamath County, Oregon

DESCRIPTION OF THE PROPOSED ACTION (INCLUDING PURPOSE AND NEED)

Burn approximately 9 piles of residual woody material. The piles are located within the 273 acre Upper Bear Valley thinning project. Implementation will occur under moist conditions when potential for spread is minimal.

The purpose of the proposed action is to reduce the fuel loading within the project area to meet the need to reduce wildfire hazard. The project is within the wildland urban interface as identified in the Keno Community Wildfire Protection Plan. These piles are a by-product of the thinning / bio-mass utilization project (OR-014-CX-05-17) that occurred in Fiscal Years 2006 & 2007. All burning will be completed in compliance with an approved burn plan.

IMPLEMENTATION DATE

This project is expected to be implemented in Fiscal Year 2008.

PLAN CONFORMANCE

The proposed project has been reviewed and found to be in conformance with one or more of the following BLM plans, programmatic environmental analyses or policies:

Klamath Falls Resource Area Plans

- Klamath Falls Resource Area Record of Decision and Resource Management Plan (1995), as amended (1999) pages 56, 75-77
- Integrated Weed Control Plan (IWCP) and Environmental Assessment (EA) OR-014-93-09

District and Regional Plans

- National Fire Plan (A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan) (2001)
- Klamath Interstate Habitat Management Plan (1982)
- Western Oregon Transportation Management Plan (1996; Updated 2002)
- Vegetation Treatment on BLM Lands in Thirteen Western States FEIS and ROD (1991)
- Supplement to the Northwest Area Noxious Weed Control Program FEIS and ROD (1987)
- Lakeview District Fire Management Plan – Phase 1 (1998)
- Wildland and Prescribed Fire Management Policy (1998)
- 2007 Final Supplement to the 2004 FSEIS to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines.
- Klamath Falls Resource Area Fuels Programmatic Consultation Letter of Concurrence #1-10-06-I-0104.

LIMITATIONS

There are a number of limitations on the use this hazardous fuels reduction CX. The project:

(a) Shall not exceed 1,000 acres for mechanical methods (crushing, piling, thinning, pruning, cutting, chipping, mulching, and mowing) and shall not exceed 4,500 acres for prescribed fire,
(b) Shall be conducted in wildland-urban interface or in condition classes 2 or 3 in fire regime groups I, II, or

III outside the wildland-urban interface,

(c) Shall be identified through a collaborative framework as described in A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan,

(d) Shall be conducted in accordance with BLM and DOI procedures and applicable land/resource management plans (refer to Plan Conformance section above),

(e) Shall not be conducted in wilderness areas or where it would impair the suitability of WSA's for preservation as wilderness,

(f) Shall not include the use of herbicides or pesticides,

(g) Shall not involve the construction of new permanent roads or other new permanent infrastructure,

(h) May include the sale of vegetative materials if the primary purpose is hazardous fuels reduction.

COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

The proposed action is categorically excluded from further analysis or documentation under the National Environmental Policy Act (NEPA) in accordance with 516 DM2, Appendix 1, 1.12 (Mechanical Treatment/Prescribed Fire) provided none of the Extraordinary Circumstances listed in 516 Departmental Manual 2, Appendix 2 (5/27/04) are met. The proposed action will:

Extraordinary Circumstances	**Yes**	**No**
2.1 Have significant adverse effects on public health or safety?		X
2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas?		X
2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)]?		X
2.4 Have highly uncertain and potentially significant environmental effects or unique or unknown environmental risks?		X
2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		X
2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects?		X
2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office?		X
2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?		X
2.9 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment?		X
2.10 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?		X
2.11 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).		X
2.12 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?		X

The proposed action would not create adverse environmental effects, meet any of the above extraordinary circumstances, or fail to comply with Executive Order 13212 (Actions to Expedite Energy-Related Projects) – to avoid direct or indirect adverse impact on energy development, production, supply, and/or distribution

SURVEYS AND CONSULTATION

Surveys and/or consultation may be needed for special status plants and animals, for cultural resources, and other resources as necessary (appropriate fields are Initialed and Dated by responsible resource specialist):

Surveys	Are Completed	Will Be Completed	Are Not Needed
SS Animals			MDB 1/16/08
SS Plants			LW 2/22/08
Cultural Resources	MAD 1/4/08		
Consultation	**Is Completed**	**Will Be Completed**	**Is Not Needed**
SS Animal Consultation*	MDB1/16/08		
Botanical Consultation			LW 2/22/08
Cultural Consultation		MAD 1/4/08	
*(SS = Special Status)			

SUMMARY OF FINDINGS AND CX DETERMINATION

The proposed action would not create adverse environmental impacts or require the preparation of an environmental assessment (EA) or environmental impact statement (EIS). The proposed action has been reviewed against the criteria for an Exception to a categorical exclusion (listed above) as identified in 516 DM 2, Appendix 2, and does not meet any Exception. The application of this categorical exclusion is appropriate, as there are no extraordinary circumstances potentially having effects that may significantly affect the environment. The proposed action is, therefore, categorically excluded from additional NEPA documentation.

Prepared By: Eric Johnson

Reviewed by: Klamath Falls Interdisciplinary Team

Approved By: (Signature)	Name: Donald K Hoffheins *<u>/s/ DK Hoffheins</u>*	Title: Acting Field Manager	Date: 3/12/08

ADMINISTRATIVE REVIEW OPPORTUNITY

Protest

The Notice of Decision published in the Herald & News, constitutes the decision document for purposes of protests under 43 CFR Subpart 5003-Administrative Remedies. Protests of this decision must be filed within fifteen (15) days after publication of Notice of Decision. Protests should be sent to:

Manager
Klamath Falls Resource Area
2795 Anderson Avenue, Building 25
Klamath Falls, OR 97603

Protests should contain a written statement of reasons for protesting the decision. To be considered complete, a protest must contain, at a minimum:

(a) The name, mailing address, telephone number, and interest of the person filing the protest,
(b) A statement of the issue or issues being protested,
(c) A statement of the specific parts of the analysis being protested by referencing specific pages, paragraphs, sections, tables, maps, etc. included in the document,
(d) A copy of all documents addressing the issue or issues that you submitted during the planning process or a reference to the date the issue or issues were discussed by you for the record,
(e) A concise statement explaining why the Field Manager's decision is believed to be incorrect. Document all relevant facts. Reference or cite the planning documents, environmental analysis documents, and/or available planning records.

A protest that merely expresses disagreement with the Field Manager's proposed decision, without any supporting data/information, will be dismissed.

CONTACT PERSON

For additional information concerning this project, contact:
Eric Johnson, Klamath Falls Resource Area, 2795 Anderson Avenue, Building 25, Klamath Falls, Oregon 97603-7891 or telephone: 541-883-6916.

APPENDIX A – PERTINENT PROJECT DESIGN FEATURES (PDFS) FROM THE 2006 FUELS PROGRAMMATIC CONSULTATION

The following list of Project Design Features (PDFs) is a partial listing of the PDFs used on the Klamath Falls Resource Area fuels program projects. These PDFs were developed through consultation with the US Fish and Wildlife Service (FWS) completed March 2006. This list includes only those PDFs pertinent to species federally listed as threatened, endangered, proposed, or candidates for such listing, and their habitats. Additional project design features are applied to each project on a case by case basis for the protection/management of other species of wildlife and other resources.

General Design Features:

- A wildlife biologist will approve the annual fuels reduction plan and fuels personnel will be informed about T&E concerns.
- For each selected fuels reduction unit, the wildlife biologist will provide input to the appropriate treatment and provide any T&E concerns associated with that unit.
- For each selected prescribed burn unit, a plan will be completed that details the preferred weather conditions, the range of conditions that will allow burning and the methods of control needed. Emergency and escaped fire conditions and control methods are also discussed.
- An annual monitoring report will be generated to inform FWS of the completed projects from the previous year and proposed fuel treatment projects for the upcoming year.

Situations that will trigger re-initiation or further discussions with FWS:

- If an eagle nest is occupied, then spring burning will not be allowed until site-specific discussions/consultations are completed with FWS.
- If a spotted owl is nesting in an area, then spring burning will not be allowed until site-specific discussions/consultations are completed with FWS on this matter.
- The need to construct fire lines directly adjacent to or crossing a stream occupied by fish, especially suckers.
- Emergency situations that go outside planned operations (e.g. escaped fire in eagle or owl areas, retardant spill near riparian zones, newly discovered nest sites near or in burn units). (FOR ESCAPED FIRE EMERGENCIES, CONSULTATION CAN OCCUR AFTER THE EMERGENCY RESPONCE ACTION).
- Re-initiation of consultation will occur concurrent with or after BLM takes Emergency action to contain a spill or escaped fire. The requirement to re-initiate consultation shall not preclude the BLM from taking immediate, emergency action to prevent additional resource damage resulting from an accident or escaped prescribed fire.
- If the level or rate of habitat modification or disturbance will exceed any of the levels described in the Biological Assessment (BA) and associated Biological Opinion (BO).
- If the project does not meet the criteria discussed in the BA or are beyond the scope of the PDFs.

For fuel treatment units adjacent to or containing Bald Eagle nest sites:

- No fuel treatments will be planned within the core area (as identified by the BLM wildlife biologist) of a bald eagle nest site during the nest season. Nesting season is considered January 1st – August 15th. The wildlife biologist may adjust these dates if the young have fledged prior to Aug. 15th (usually the fledging date plus 2 weeks). The core area will consist of the withdrawn area around the nest and the disturbance area around the nest. Generally the disturbance area is considered ¼-mile or ½ mile line-of sight. This distance may vary depending on topography and site-specific information.
- Smoke management will be planned in such a way to avoid adverse effects of residual smoke on active or possibly active nest sites adjacent to burn units.
- A BLM wildlife biologist will be consulted about eagle use of the area before the fuel treatments are initiated to ensure the eagle situation is closely monitored.
- A biologist/designee will monitor the nest area during the burns to ensure that objectives and PDFs are met (smoke management, fire intensity, etc).

- In areas where prescribed fire activities are being planned, remove the brush, ladder fuels and large down woody material within the dripline (approximately 30+ ft.) of the eagle nest trees and potential or identified perch/roost trees to reduce ladder fuel. Personnel will be required to complete one or more of the following:
    1. Pull back of 10 and 100 hour fuels 30' from the base of the nest trees/ perch trees
    2. Construct fire line around the nest trees/perch trees
    3. Use foam, water, or other retardants to protect the nest tree (foam would not be allowed if the nest tree is in a riparian zone).
    4. Ladder fuels would be removed from the dripline (30ft.)
    5. "slashbust" or mow problem fuels.
- Fuel treatments can proceed in the core area, if no nesting has occurred by May 15. There is no documented bald eagle incubation initiation after May 1 in Oregon (Frank Isaacs, e-mail to Broyles June 13, 2005, on file at BLM. If the nest is occupied or spring burning is preferred because of excess fuel loading or to meet other resource objectives, then spring burning will not be allowed until site-specific discussions/consultations are completed with FWS on this matter.
- Aircraft used during prescribed fire operations would maintain a buffer >1/2 mile distance from the nest during the nesting season (this distance may vary if topographical features allow). No buffer would be necessary outside the nesting season. This 1/2 mile restriction would be waived immediately, if necessary, if the burn boss declares an escaped fire or if there is a need to waive the restriction for a medical evacuation.
- In cases when verifying nesting status is necessary prior to activities taking place, survey protocols used by Oregon Eagle Foundation annual bald eagle survey will be followed.

For units adjacent to or containing bald eagle roost sites:

- If no birds are seen roosting in the area, fuel treatments may be initiated and continue as long as the conditions are favorable. If bald eagles are using the area for roosting, the units would only be entered between 9:00 AM and 3:00 PM during the seasonal restriction period (Nov. 15-Mar. 15).
- Smoke management will be planned in such a way as to minimize effects of residual smoke on occupied or possibly occupied known roost sites adjacent to burn units (time of day and wind direction are factors to consider).
- A BLM wildlife biologist will monitor eagle use in the area before the fuel treatments are initiated to ensure that the eagle situation is closely monitored and that the action takes place under favorable weather conditions.
- In areas where prescribed fire activities are being planned, remove the brush, small trees, and large down woody material within the dripline (approximately 30+ ft.) of the potential (>20") or identified perch/roost trees to reduce ladder fuel. The vegetation to be removed would be "slashbusted" or cut and piled away from the nest tree and burned.

For units adjacent to or containing spotted owls, NRF habitat, dispersal habitat, or in areas of designated Critical Habitat:

Implementation of the following Project Design Features will result in projects being considered as being not likely to adversely affect: spotted owls, NRF habitat, dispersal habitat, and designated spotted owl Critical Habitat.

- No fuels treatments will be planned within the core area (as identified by the BLM biologist) of a nesting spotted owl during the nest season, or within ¼ mile of an active or possibly active nest. The seasonal restriction period will be March 1-Sept. 30. This restriction can be lifted by the BLM biologist on or after June 30 if it is determined that the nest is no longer active or that young owls are not present in the project area. The core area will normally be the 100-acre reserve as required under the Northwest Forest Plan (NFP) but may be expanded due to potential disturbance to the nest. For spotted owl sites that were located after Jan. 1, 1994, and thus are not protected by a Northwest Forest Plan Un-mapped Late Successional Reserve ("100 acre core"), the BLM biologist will designate a 100 acre core for fuels project planning and implementation purposes.
- Smoke management will be considered during prescribed fire activities to try to reduce the effects of residual smoke on nest sites adjacent to burn units

- In areas containing spotted owls, a BLM biologist will monitor spotted owl use of the area before the fuel treatment is initiated to ensure that the owl situation is closely monitored.
- If the nest is occupied or spring burning is preferred because of excess fuel loading or to meet other resource objectives, then spring burning will not be allowed until site-specific discussions/consultations are completed with FWS on this matter.
- A biologist/designee will monitor the nest area during the burns to ensure objectives and PDFs are met (smoke management, fire intensity, etc).
- Burn prescriptions will require proper fuel moisture and atmospheric conditions so adequate large woody material (LWM) will be retained for prey habitat.
- The general objective for burns would be to create a mosaic of burned and unburned habitat in the unit to maintain some habitat for prey production.
- No more than 50% of an owl core would be treated during a single season (for example, if 50% of the core is treated in spring 2006, no additional core acreage would be treated any sooner than spring 2007).
- In NRF habitat maintain a diversity of understory brush, and herbaceous layer vegetation (islands of undisturbed vegetation), while still reducing the continuity of the fuel.
- In NRF habitat maintain visual screening along open roadways to minimize disturbance.
- In northern spotted owl NRF habitat, maintain the understory structure by retaining a diversity of the sub-merchantable understory conifer trees (Douglas-fir, white fir, sugar pine, cedar, ponderosa pine). In mechanical treatment areas this would be done by site-specific designs described in the individual task orders. During prescribed fire activities the overall objective is to create a mosaic of burned and unburned areas. Ignition techniques and pull back on smaller trees may also be used to maintain the understory structure and desirable understory species.

For units adjacent to or containing fish habitats or riparian areas (riparian reserves):
Fuel treatment objectives within the Riparian Reserves with sucker or bull trout habitat are to protect the overhead canopy from catastrophic fire and increase the productive vigor of trees and plants within the riparian areas. At the same time retain and protect the LWM and overhead cover important to stream function and aquatic habitats. The riparian zone buffer widths in the various PDFs below are not necessarily biologically based but rather used to set a minimum standard that both protects aquatic habitat and simplifies designing treatment units. In areas where a (for example) 50-foot boundary does not make practical sense, and some other boundary is more appropriate, there will be an opportunity on a case-by-case basis for the hydrologist and fisheries biologist to assess the effect of a potential "new" treatment boundary on aquatic species and habitats, and make recommendations accordingly.

Mechanical fuels treatments in riparian reserves:
Treatment methods that would disturb the least amount of soil (yarding over snow or frozen ground, limiting activities to the dry season, pulling line to each tree, and minimizing skid trails) would be used in the Riparian Reserves. No ripping, piling, or mechanical site preparation (except for designated skid trails crossings, roads, or yarding corridors) would occur in Riparian Reserves.

To protect the thermal regime adjacent to streams and to maintain stream bank stability a no-mechanical-entry spacing for treatments would occur from the natural topographic break to the stream. In areas where a topographic break is not evident the following guidelines would be implemented:

- On intermittent streams with slopes less than 10 percent a 50 foot no entry buffer would be established on each side of the stream.
- On intermittent streams with slopes greater than 10 percent an 80 foot no entry buffer would be established.
- On perennial and/or fish bearing streams with less than 10 percent slopes a minimum 100 feet no entry buffer would be established.
- On perennial and/or fish bearing streams with slopes greater than 10 percent a no entry buffer 160 foot would be established.

Hand treatments in riparian reserves:
Hand treatments would be recommended within the no-mechanical-entry zones in order to meet fuel management objectives.

Ignitions within the riparian reserves:
The objectives of PDFs for ignitions in Riparian Reserves are:

1. Avoid getting slash fuel in water
2. Minimize the amount of sediment delivered to water
3. Reduce ladder fuels and undesirable vegetation (e.g. encroaching juniper)
4. Meet general fuels reduction objectives

- In general, ignition of broadcast fires should not occur within a minimum of 50 feet from the stream channel within the riparian reserves. The specific distance for lighting fires within the Riparian Reserve depend on topography, habitat, ignition methods, and fuel moisture.
- Ignition line location nearest the stream should be based on topography and ignition methods and should be sufficient to protect water quality, LWM, and stream overhead cover. If it's wet don't pour fuel on it. If LWM directly touches the high water mark of the stream, or the LWM may be affected by high flows, don't ignite it. If there is a thick vegetation cover that extends out from the stream to the line of ignition then move the line of ignition into the forest stand, away from the stream.
- Mobile ignition methods, e.g. ping-pong ball ignition, recommend an increased ignition distance from the stream of at least 50 feet on slopes of 35 percent or less. On slopes greater than 35 percent increase ignition distance to 100 feet.
- Recommend the ignition line location near large open meadows associated with the stream channels, be located at the toe of the slope above the meadow elevation as much as possible in order to protect meadow vegetation.
- When igniting fuels on the lower end of the fuel moisture content scale, increase ignition spacing from stream in order to further protect LWD and overhead cover components.

Aspen restoration within riparian areas:
Riparian zone aspen stands that are being restored through vegetation management and burning would be exempt from the above listed riparian zone PDFs. However, treatments in riparian zone portions of aspen stands would be subject to hydrologist and fisheries biologist design and approval of treatment methods and techniques. The specific objectives of the treatments would be:

- Minimize treatment induced impacts to water quality and aquatic habitat.
- Remove competing vegetation from around the aspen clone, and
- Encourage aspen regeneration.

Roads and temporary fire trail access in riparian reserves:

- In general, new roads are not constructed for fuels management projects. However, in rare cases a new road may be needed. No new road will be constructed within a Riparian Reserve unless it replaces an existing road in poor condition that the KFRA Manger has determined is causing more resource damage (erosion /sediment etc.) than the new road would. If possible, use new technology and construction methods for building temporary roads into treatment units (including but not limited to wood chip constructed roads).
- Use of existing closed or brushed over roads and landings within the RR will be subject to review and approval by the resource advisor. The resource advisor may ask for Area Manager review if he/she feels it is necessary.
- Minimize grading of the existing roads to maintain the existing ground cover and vegetation and to decrease sediment movement.
- If a road that is currently vegetated or brushed over needs to be opened for access for a fuels project or burn, the vegetation will be cut by hand and debris will be placed back on the road after the burn or other treatment is complete. If the road was impassible prior to being brushed out, it will be returned to an equally impassable condition after the fuels program access is no longer needed.
- Roads and temporary fire trails used in fuels reduction operations, and substantially impacted or disturbed by those operations, would be treated to reduce erosion and sediment production as identified

by the resource advisor. Treatments could include blocking, water-barring, ripping, or planting.

Chemical fire retardants and fueling in riparian reserves:

- No use of chemical retardants would occur within the full width of the riparian reserve (per KFRA RMP).
- In cases of escaped or wildfire control soap based retardants may be applied to within 50 feet of a stream that contains water.
- No refueling of mechanical equipment or vehicles within the riparian reserves unless approved by a resource advisor.
- No staging areas will occur in the riparian reserves, unless approved by a wildlife biologist.

Streamside pumping sites:

- Pumping on small streams should not reduce the downstream flow of the stream by more than half the flow.
- If possible avoid the construction of temporary pump chances. When necessary, use temporary plastic dams to create chances and remove these dams when not actively pumping.
- All pumping located on fish bearing streams must have a screen over the intake to avoid entrainment of small fish.
- Recommend that pump intake be suspended near the thalweg (deepest/highest quantity of flow) of the stream. Avoid placing pump intakes on the substrate or edges of the stream channel.

Consultation requirements in emergency situations (escaped RX fire etc.):

Project design features listed above are meant to apply to planned operations, not emergencies. In the event of an emergency on a BLM operation, the BLM, its cooperators, and its contractors are authorized to take emergency action to address the emergency situation without first consulting with the FWS. Emergency consultation may be necessary, but it can occur after the situation is under control.

DO NOT WAIT FOR CONSULTATION TO BE STARTED OR COMPLETED BEFORE TAKING NECESSARY ACTION TO ADDRESS AN EMERGENCY.

APPENDIX B - WEED MITIGATION MEASURES

- All vehicles and equipment will be cleaned off prior to operating on BLM lands. Removal of all dirt, grease, and plant parts that may carry noxious weed seeds or vegetative parts is required and may be accomplished with a pressure hose.

- High concentrations of noxious weeds in the immediate area of mechanical operations shall be mowed to ground level prior to the start of project activities.

- All equipment and vehicles operating off of main roads shall be cleaned off prior to leaving the job site when the job site includes noxious weed populations. Removal of all dirt, grease, and plant parts that may carry noxious weed seeds or vegetative parts is required and may be accomplished with a pressure hose.

APPENDIX C - SOILS QUALITY PDFS AND BMPS

Soil Quality PDFs and BMPs (BMPs are from KFRA RMP Page D-11)

- Limit detrimental soil conditions to less than 20 percent of the total acreage within the activity area. Use current soil quality indicators to monitor soil impacts. Sites where the 20 percent standard is exceeded will require treatment, such as ripping, backblading or seeding.
- Retain and establish adequate vegetative cover in accordance with RMP BMPs to reduce erosion.
- Retain enough small woody (dead and down) material to sustain soil nutrients. See RMP BMPs for specifications. In ponderosa pine forest land, nine tons per acre of duff and litter (approximately ½ inch deep).
- Seed and/or mulch exposed and disturbed soil surfaces with native seed when seed is available.
- Recommend placement of residual slash on trail upon completion of mechanical treatments.
- Limit mechanical operations to soil moistures below 20 percent at a six inch depth. Even lower soil moisture levels are preferable on fragile soils.
- Cable yarding and restricted use of mechanized equipment is required on slopes that are greater than 35 percent.
- Construct fireline by hand on slopes greater than 35 percent.
- Hand pile and burn within 100 feet of Riparian Reserves.

APPENDIX D - WATER AND FISH MITIGATION

Project Design Features (PDFs) for Fuels Treatments within Riparian Reserves with No Listed Fish Species

The purpose of this document is to provide guidance to fuels management personnel for designing fuels projects that include treatments within Riparian Reserves. These PDFs should be used for units adjacent to or containing riparian areas and/or fish habitats. Objectives of fuels treatments within riparian reserves (RRs) are: protection of vegetation and soils from catastrophic fire, (including overhead canopy for stream shading); restoration of riparian areas to the potential natural community for the site; increased productive vigor vegetation within the riparian areas; and retention and protection of coarse woody debris (CWD) and overhead cover for stream function and aquatic habitats.

The following information is from the Klamath Falls Resource Area Resource Management Plan.

- Riparian Reserves are lands along streams and unstable and potentially unstable areas where special standards and guidelines direct land use."
- Riparian areas, for the purposes of these PDFs, are defined as lands adjacent to perennial and intermittent streams, springs, lakeshores, wetlands, and reservoirs. Riparian areas have vegetation and soils with physical characteristics showing permanent surface or subsurface water influence.
- Streams covered under these PDFs include perennial streams, (streams that generally flow year round) and intermittent streams (streams that generally run for at least 30 days per year, and have a definable channel and evidence of annual scour or deposition.)
- Wetlands are areas that are inundated by surface or ground water for a sufficient frequency and duration to support vegetation adapted to saturated soil conditions.
- There should be an opportunity on a case-by-case basis to assess the effect of the buffer width on riparian areas and aquatic species and habitats.

Riparian Reserve Types And Widths For The Klamath Falls Resource Area	
Riparian Reserve Type	Reserve Width (for each side of streams/wetlands)
Fish-bearing streams	At a minimum, the reserve width will include: ▪ Slope distance equal to the height of two site potential trees (240 feet); or, ▪ The stream channel and the area extending to the top of the inner gorge; or, ▪ The area extending to the outer edges of riparian vegetation; or, ▪ The 100-year floodplain; or, ▪ The extent of unstable or potentially unstable areas, whichever is greatest.
Perennial non-fish-bearing streams and Intermittent (seasonal) non-fish-bearing streams and constructed ponds and reservoirs and wetlands greater than one acre	At a minimum, the reserve width will include: ▪ Slope distance equal to the height of one site potential tree (120 feet); or, ▪ The stream channel (or waterbody/wetland) and the area extending to the top of the inner gorge; or, ▪ The area extending to the outer edges of riparian vegetation; or, ▪ The 100-year floodplain (for streams) or the extent of seasonally saturated soil (for waterbodies and wetlands); or, ▪ The extent of unstable or potentially unstable areas, whichever is greatest.
Wetlands less than one acre and unstable or potentially unstable areas	At a minimum, the reserve width will include: ▪ The wetland and the extent of seasonally saturated soil; or, ▪ The area extending to the outer edges of riparian vegetation; or, ▪ The extent of stable or potentially unstable areas, whichever is greatest.
Lakes and natural ponds	At a minimum, the reserve width will include: ▪ Slope distance equal to the height of two site potential trees (240 feet); and, ▪ The body of water or wetland and the area to the edges of riparian vegetation; ▪ The extent of seasonally saturated soil; ▪ The extent of unstable or potentially unstable areas; whichever is greatest.
Springs	Reserve widths vary according to the size of the associated wetland (see above).

Ignitions within the riparian reserves:

- Ignition of broadcast fires should not occur within a minimum of 50 feet from the stream channel within the riparian reserves. (The specific distance for lighting fires within the RR will depend on topography, habitat, ignition methods, and fuel moisture.)
- Ignition line location nearest the stream should be based on topography and ignition methods and should be sufficient to protect water quality, CWD, and stream overhead vegetative cover. No ignition of CWD directly touching the high water mark of the stream, or of CWD that may be affected by high flows should occur. Where there is thick vegetative cover that extends out from the stream, ignition lines should be located in the forest stand, away from the stream.
- Mobile ignition methods, i.e. ping-pong ball ignition, ignition distance from the stream
    1. 50 feet on slopes of 35 percent or less
    2. 100 feet on slopes greater than 35 percent
- Ignition lines near large open meadows, associated with the stream channels should be located at the toeslope above the meadow elevation as much as possible to protect meadow vegetation.
- When igniting fuels on the lower end of the window of moisture content, increased ignition spacing from stream would be recommended to further protect CWD and overhead cover components.

Roads and temporary fire trail access in riparian reserves:

- No new roads will be constructed within the RR unless they replace an existing road that is causing more resource damage. If possible, use new technology construction methods for building temporary roads into treatment units (including but not limited to wood chip constructed roads.)
- Use of existing roads and landings within the RR will be reviewed and approved by the resource advisor.
- Minimal or no grading of the existing roads will be done to maintain the existing ground cover and vegetation and to decrease sediment movement.

Chemical fire retardants in riparian reserves:

- No use of chemical retardants would occur within the full width of the riparian zone (per KFRA RMP.)
- In cases of escaped or wildfire control, soap based retardants may be applied to within 50 feet of a stream

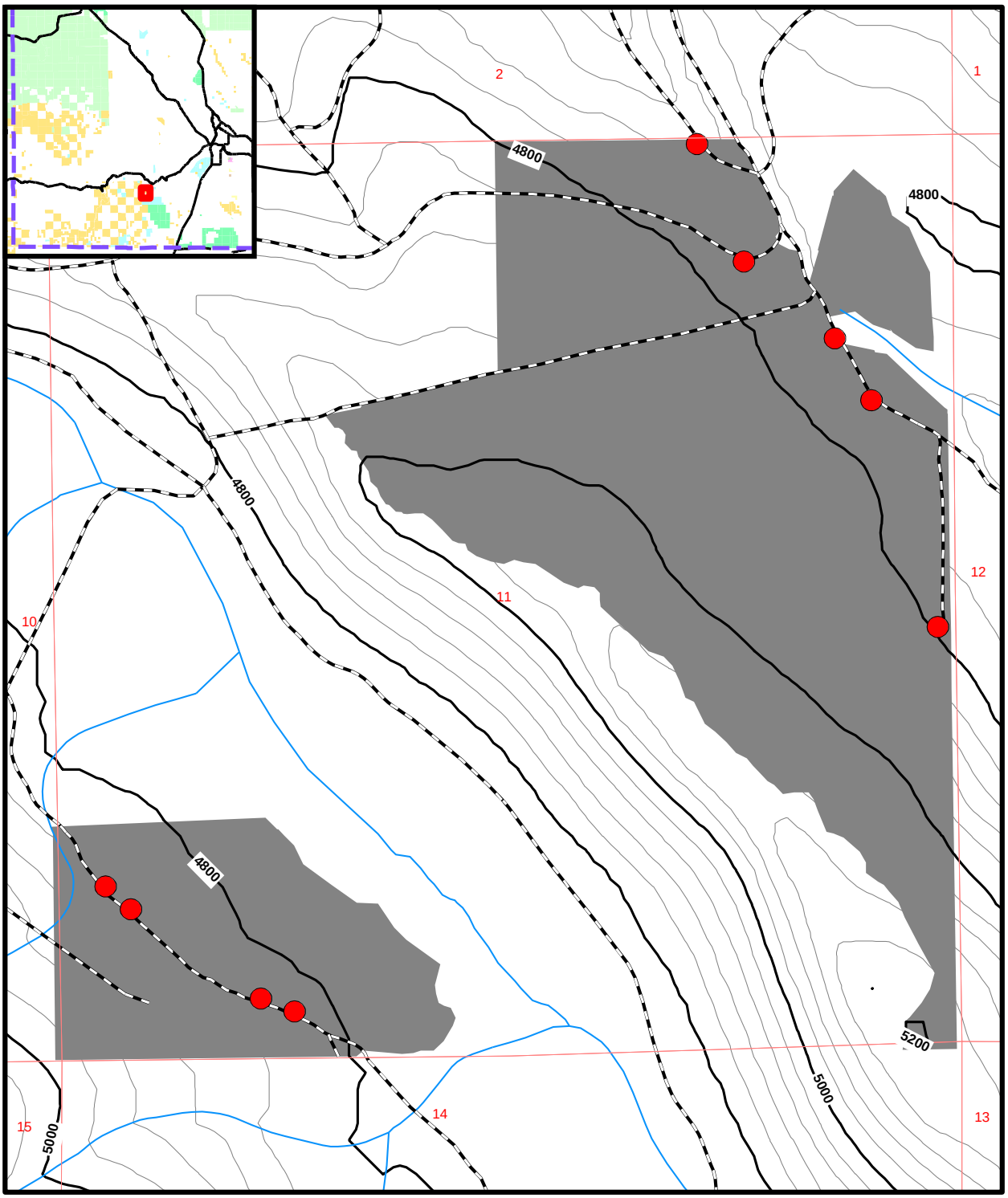
that contains water.

Streamside pumping sites:

- Pumping on small streams should not reduce the downstream flow of the stream by more than half the flow.
- If possible, avoid the construction of temporary pump chances. When necessary use temporary plastic dams to create chances and remove these dams when not actively pumping.
- All pumping located on fish bearing streams must have a screen over the intake to avoid entrainment of small fish.
- The pump intake should be suspended near the thalweg (deepest/highest quantity of flow) of the stream. Avoid placing pump intakes on the substrate or edges of the stream channel.

Post-fuels treatments for access roads and temporary fire trails:

- Install drainage dips, or water bars, in accordance with RMP BMPs to reduce surface run-off.
- A layer of duff (average of ½ inch after final burn) will be retained to protect soil from erosion during the wet season.
- Mulch and seeding or other methods of soil stabilization should be applied to any exposed soil surfaces prior to the wet season to reduce surface erosion.
- Surface roads in accordance with RMP BMPs (Roads C-1-8) for all naturally surfaced roads not proposed for decommissioning or closure.
- Design blockages (close or decommission) upon completion of treatments to minimize non-authorized use of roads and trails within treatment areas.
- Placement of residual slash on trails upon completion of mechanical treatments should occur.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1
4800
4800
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12
11
10
5200
5000
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15
14
13
N
W
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S
0
660
1,320 Feet
Upper Bear Valley Pile Burn
T40S R7E Sec11
EJ 12/18/2007
Section Line
Pile
Road
Stream
Contours (40 ft.)
Minor
Major
Project Area