United States Department of Agriculture | Forest Service | Umpqua National Forest

Umpqua National Forest
2900 NW Stewart Parkway
Roseburg, Oregon 97470
(541) 672-6601 FAX 957-3495

File Code: 1950
Date: October 30, 2008

Dear Interested Citizen:

Enclosed is the final Decision Memo for the Tallow Salvage Sale Project. I have decided to implement the proposed action as described in the Decision Memo. The proposed action authorizes salvage of about 220 acres of blowdown trees on Matrix land yielding about 3.2 million board feet of timber and authorizes treatment of activity generated fuels, construction and subsequent obliteration of 0.3 miles of temporary roads, and other connected actions. The final Decision Memo is available on the Forest's website at www.fs.fed.us/r6/umpqua or by calling the Supervisor's Office at the numbers listed below.

This decision is subject to appeal pursuant to Forest Service regulations 26 CFR 215.11(a). The appeal must meet the requirements specified by 36 CFR 215.14. The Appeal Deciding Officer is the Forest Supervisor. Appeals must be sent to Forest Supervisor, USDA Forest Service, Umpqua National Forest; Attn. 1570 Appeals. 2900 NW Stewart Parkway, Roseburg, OR 97471. Appeals that are hand delivered may be brought to the Supervisors Office during the hours of 8:00 am – 4:30 pm, Monday through Friday, except for legal holidays. The fax number is 541-957-3495. Appeals may also be electronically mailed to: appeals-pacificnorthwest-umpqua@fs.fed.us. The appeal, including attachments, must be filed with the Appeal Deciding Officer within 45 days of the date that the legal notice of decision is published in the Roseburg News Review, which is the exclusive means for calculating the time to file an appeal. Those wishing to appeal should not rely upon dates or timeframe information provided by any other source. For electronically mailed appeals, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of the receipt of the appeal, it is the sender's responsibility to ensure timely receipt by other means. Implementation may occur on, but not before the 15th business day following the date of appeal disposition. In the event of multiple appeals, the implementation date will be established following the last appeal deposition [36 CFR 215.9(b)]. If no appeal is filed, implementation may occur on, but not before, the 5th business day following the close of the appeal filing period [36 CFR 215.9(a)].

Additional information on the proposal can be obtained from Stuart Carlson, (541)-643-9768, email slcarlson@fs.fed.us, or Debbie Anderson, (541)-957-3466, email danderson01@fs.fed.us at the Forest Supervisor's Office, 2900 NW Stewart Parkway, Roseburg, Oregon 97471; the Supervisor's office is open from 8:00 am until 4:30 pm, Monday through Friday, excluding legal holidays. Thank you for your interest in the Tallow Salvage Sale Project.

Sincerely,

/s/ Roshanna Stone

ROSHANNA STONE
District Ranger

Enclosure

United States Department of Agriculture

Forest Service

Pacific Northwest Region

Tallow Salvage Sale

Umpqua National Forest

Tiller Ranger District

Date: October 2008

DECISION MEMO

Introduction and Project Location

In the early winter months of December 2007, a windstorm passed through the Tiller Ranger District; primarily in the Jackson Creek 5th field watershed, which subsequently caused some of the trees in mature natural stands to fall over and/or break. The area that was impacted to the greatest extent by this windstorm is located on the north side of Jackson Creek from Deep Cut Creek in an easterly direction towards Luck Creek.

The Tallow Salvage Sale project (Figure 1) encompasses approximately 219 acres of mature forest stands on the north side of Jackson Creek on the Tiller Ranger District. The project is located in all or portions of T30S, R1E Sections 1, 2, 3, 4, 5, 9, 10 and T29S R1E Sections 26, 27, 32, 33, 34, 35, Willamette Meridian, Douglas County, Oregon. The 1990 Umpqua National Forest Land and Resource Management Plan (LRMP), as amended, allocates the project area to Management Area #11 (Big Game Winter Range) and Matrix land as described in the Northwest Forest Plan. The project is located outside of Riparian Reserves, the South Umpqua Experimental Forest and Critical Habitat for the Northern spotted owl.

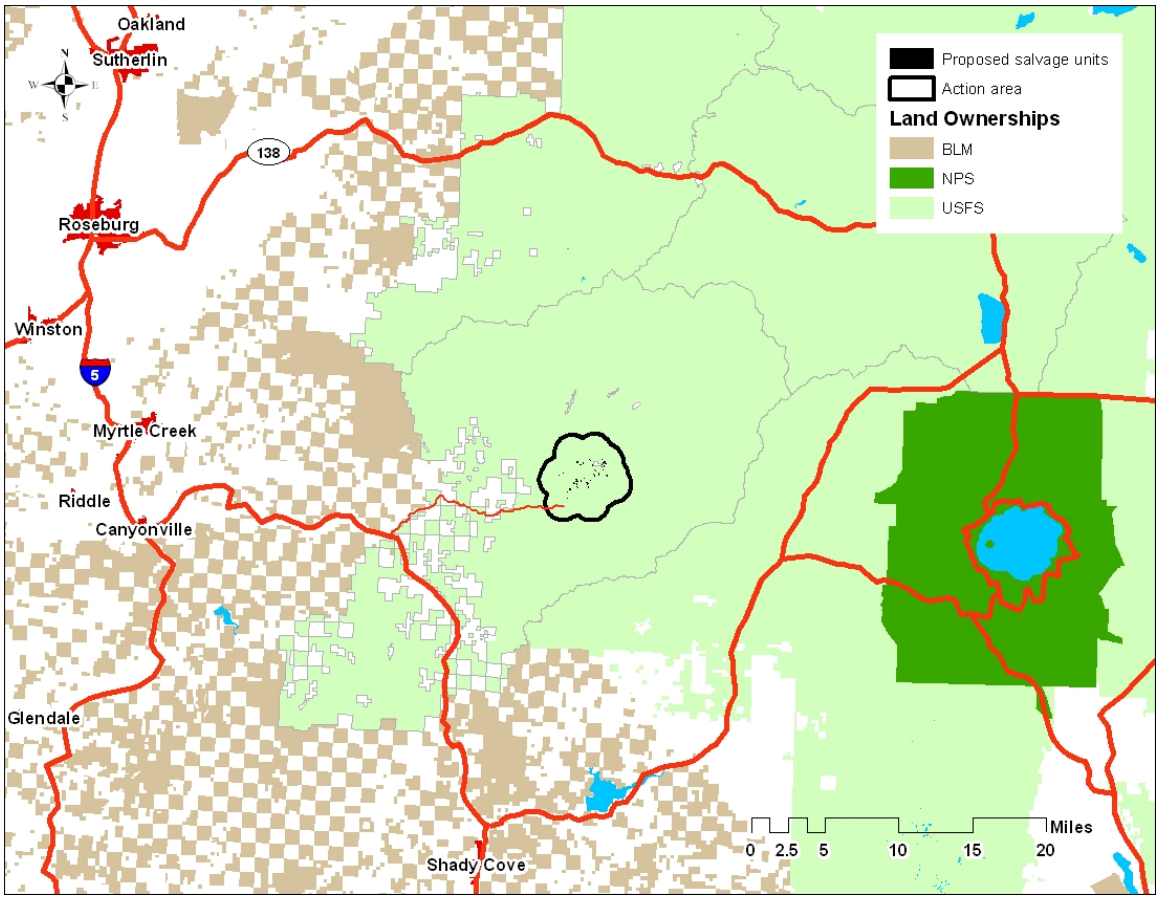


Figure 1. Location map for the Tallow Salvage Sale action area on the Umpqua National Forest.

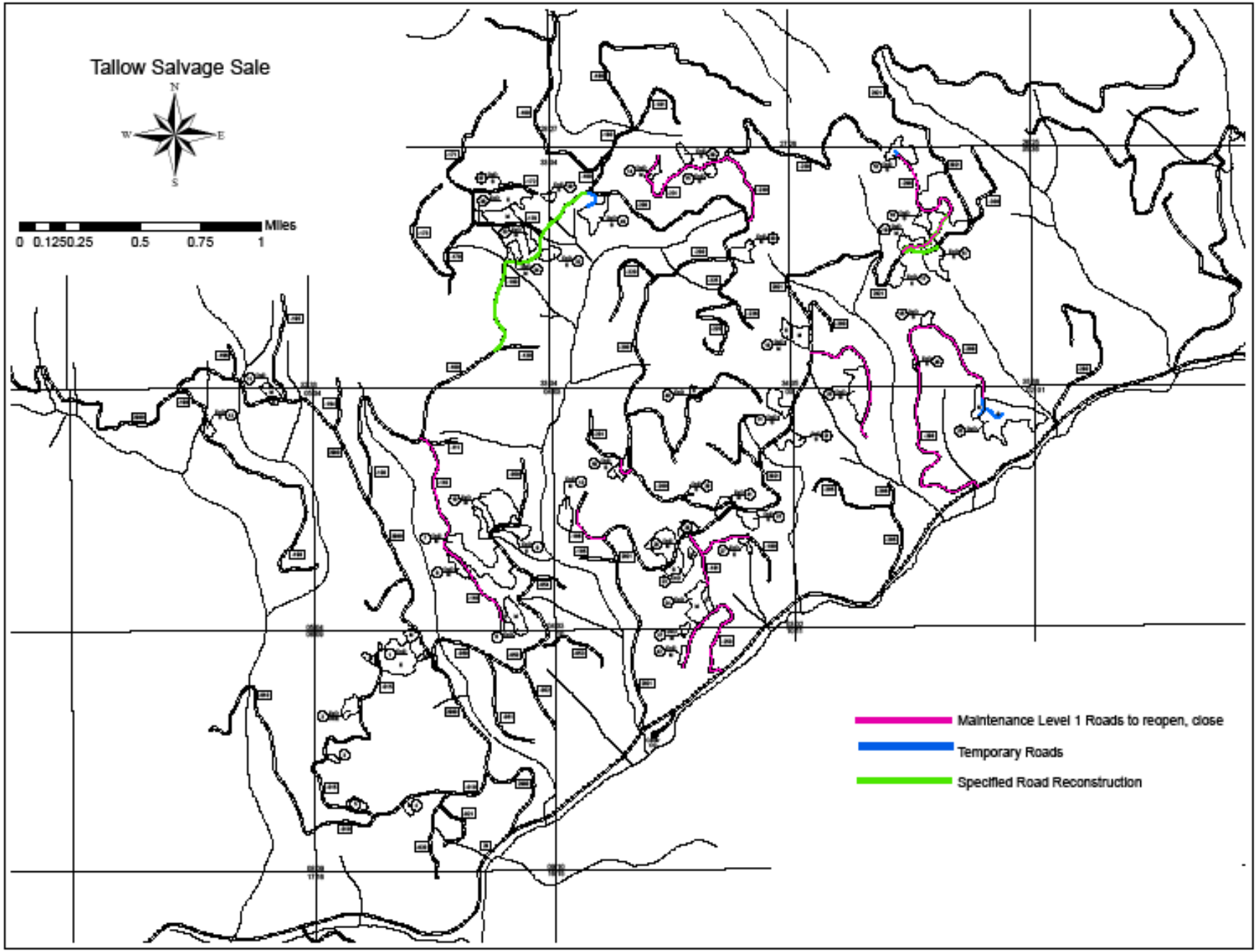
PURPOSE AND NEED

The Purpose and Need for the Tallow Salvage Sale is to harvest some of the wind-thrown trees before the economic value of the wind-thrown trees is lost. There is a need to produce timber from the Matrix land allocation, where, according to the Northwest Forest Plan (NWFP), most of the timber harvest and silvicultural activity should take place. Page B-9 of the Record of Decision (ROD) for the NWFP states: "in the Matrix, objectives for management after stand replacing events will generally differ from those for Late-Successional Reserves. Economic benefits of timber production will receive greater consideration. For example, the commercial salvage of dead trees will be less constrained, and replanting disturbed areas will be a high priority." In addition, there is a need to replant disturbed acres to maintain productivity.

There is also a need to reduce fuel loads created by the wind-storm to a more historic condition. The project area is classified as historic Fire Regime 1. The Fuels specialist report in Appendix 4 of the Project Record characterizes Fire Regime 1 as an area where historically, fires occurred with a frequency of 0-35 years, in a pine dominated area, with grasses being the primary fire carrier. The Fire Regime Condition Class (FRCC) is a description of the departure of the area from its historic fire regime. The higher the condition class, the more fire return intervals that have been missed. The project area is currently classified as Fire Condition Class 3, which is a high departure from the historic condition. Characteristics of Condition Class 3 include:

- Fire regimes are highly altered from their historical range;
- The risk of losing key ecosystem components is high;
- Fire frequencies have decreased by multiple return intervals; and
- Vegetation attributes are highly altered from their historic ranges.

Areas under Condition Class 3 tend to need high levels of restoration treatments to restore areas to their historical fire regimes and improve condition class. Salvaging some of the down trees in the Tallow area, along with subsequent slash treatments, would help move the area back toward its historic fire regime in the areas treated.


Tallow Salvage Sale
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Maintenance Level 1 Roads to reopen, close
Temporary Roads
Specified Road Reconstruction

PROPOSED ACTION

Specific action components for the harvest units of the Tallow Salvage Sale are summarized in Table 1. The Proposed Action for the Tallow Salvage Sale includes the following:

Timber Harvest

A total of about 219.1 acres would be harvested within lands allocated to the Matrix under the Northwest Forest Plan to remove an estimated 3.2 MMBF (million board feet) of wind-thrown trees using a variety of logging systems[1] which include:

- Ground based logging on about 104.6 acres which will remove about 1.20 MMBF;
- Yoader skyline logging on about 51.0 acres which will remove about 635 MBF (thousand board feet);
- Skyline logging on about 60.3 acres which will remove about 1.3 MMBF; and
- Yoader skyline logging with a ground based swing on about 3.2 acres which will remove about 30 MBF.

Fuels Treatments

All acres proposed for harvest would have fuels reduction treatments of activity generated fuels which include approximately:

- 164.8 acres of under-burning (including hand fire-line construction around the perimeter of the area that would be under-burned);
- 32.9 acres of hand-piling and burning (piles would be constructed approximately 15 feet away from healthy live trees, stumps, and large down woody material);
- 31 large diameter healthy undamaged ponderosa pine trees would have all of the slash and a portion of the duff layer pulled back for a distance of twenty (20) feet around these trees prior to hand-piling and burning or under-burning activities; and
- 21.4 acres where the tops of the wind-thrown trees would be yarded to landing areas and then piled with other landing slash concentrations.

Replanting

Approximately 14.2 acres in units 25, 39, 50 and 52 would be replanted with Plug+1 sugar pine (150 trees per acre); Douglas-fir (100 trees per acre); ponderosa pine (100 trees per acre); and incense-cedar (50 trees per acre). Animal damage protection, including netting or big game repellant, will be applied after planting, as needed. Reforestation is needed in these areas due to the lack of adequate quantities of healthy live trees.

[1] Acres which would be harvested with a ground based logging system would use a variety of logging methods including: Loader (loader and a delimber); and Mechanized (grapple skidder or tractor, delimber, and a log loader). Acres which would be harvested with a yoader skyline logging system would use a yoader skyline yarder, delimber, and a log loader. Acres which would be logged with a conventional skyline logging system would use a large swing yarder, delimber, and a log loader. Acres which would be logged with a yoader and a ground based swing would use a yoader to skyline log uphill then a grapple skidder or tractor would yard these logs downhill to a landing area. A delimber and a log loader would also be used.

Sub-soiling

Approximately twenty-three (23) acres of sub-soiling would occur within the harvest units at the following locations:

- All of the ground based skid trails that are used to remove timber (about 17 acres);
- All of the landings used for ground-based logging operations (about 5 acres); and
- All of the temporary roads used for this salvage sale (about 1 acre).

Sub-soiling would be accomplished with an excavator equipped with a "winged-ripper" to fracture the soil to a twenty (20) inch depth unless rock is encountered. Upon completion of sub-soiling activities, these areas would have slash scattered over them to provide for effective ground cover.

Re-vegetation of Exposed Soils

Approximately forty (40) acres of re-vegetation of exposed soils would occur at the following locations:

- All of the ground based skid trails that are used to remove salvaged timber (about 17 acres);
- All of the skyline landings used for skyline logging (about 5 acres);
- All of the landings used for ground-based logging operations (about 5 acres);
- All of the Maintenance level 1 System Roads used for this salvage sale (about 12 acres); and
- All of the temporary roads used for this salvage sale (about 1 acre).

Re-vegetation of the exposed soils created by operations associated with this salvage sale would occur through the application of a mixture of seed from a variety of grass species found within the Tallow Salvage Sale planning area. Re-vegetation on these areas is proposed to minimize sediment delivery into sensitive resource areas, and to reduce the chance for the establishment of noxious weeds/invasive plant species in these areas. The use of a native grass seed mix would also provide forage opportunities for a variety of big game wildlife species.

Noxious Weed Treatments Year 1 and Year 2

Within the Tallow Salvage Sale harvest units, several species of noxious weeds are present and include Himalayan blackberry, Scotch broom, Meadow knapweed, Tansy ragwort, St. Johnswort, Bull thistle, Medusahead rye, and Sulfur Cinquefoil.

These existing populations of noxious weeds would be treated by manual control methods to prevent the further spread into areas where these species are not currently found, including the forty acres of exposed soils as described above.

Effective Ground Cover

Within one year after fuels reduction activities have been completed, effective ground cover will be in place on a minimum of 45% or 65% of the area, depending on the soil erosion hazard for the soil type in a particular salvage harvest unit.

Temporary Roads

Temporary roads would be constructed to access suitable landing locations for timber harvest activity in units 25, 49, and 52.

The new temporary road which would be constructed in unit 25 is about 0.18 miles long and would provide access to an estimated 500 MBF of wind-thrown timber. This temporary road would have uphill haul grades which approach 20% to access suitable landing locations to skyline log wind-thrown trees uphill away from Jackson Creek.

The temporary road which would be constructed in unit 49 is about 0.10 miles long and would provide access to an estimated 55 MBF of wind-thrown timber. This temporary road would have uphill haul grades to access a suitable landing location to Yoader skyline log uphill away from streams. Approximately half of this temporary road already exists, while the remaining portion would be new temporary construction. Small quantities of second growth green trees in the existing portion of this temporary road would need to be cut for an adequate work area. Any of the green trees cut outside of unit #49 within the temporary road clearing limits would be left on site as down wood. After sub-soiling has been completed on this temporary road, these trees would be scattered over the former road prism to provide effective ground cover and to discourage off highway and other motorized vehicles from traveling on this former road prism.

The new temporary road which would be constructed in unit 52 is about 0.02 miles long and would provide access to an estimated 100 MBF of wind-thrown timber. This temporary road would have downhill haul grades to access suitable landing locations to skyline log wind-thrown trees uphill away from a wetland.

Upon completion of use, all 0.30 miles of these temporary roads would be obliterated by sub-soiling the former road prism to a twenty (20) inch depth; scattering slash after sub-soiling has been completed to provide adequate quantities of effective ground cover on exposed soils; and blocking the entrance of these former roads with cull logs, root-wads or boulders to discourage vehicle travel on these areas.

System Road Maintenance

Routine road maintenance work activities would be conducted on approximately 36 miles of National Forest System roads prior to harvest operations, during harvest operations and upon completion of harvest operations.

Routine road maintenance work activities include the following:

- Logging out (removing downed trees, large rocks, etc.);
- Brushing the sides of the roads to improve visibility;
- Blading the running surface of gravel roads including turnouts to remove ruts and potholes;
- Cleaning existing culvert inlets and outlets to provide proper drainage;
- Application of water or Magnesium chloride to control dust during log hauling on National Forest system roads;
- Hazard tree felling to meet Oregon OSHA requirements;

Approximately 6.37 miles of Maintenance Level 1 system roads which are closed by earthen barricades would be opened for timber harvest activity and closed after operations have been completed. After use has been completed, all of these roads

would be blocked by earthen barricades, waterbars/crossdrains would be installed to provide drainage, and the entire length of these roads would be seeded with a mixture of native grass species to reduce soil erosion and to provide forage opportunities for big game wildlife species.

The following Maintenance Level 1 system roads would be used by this salvage sale:

- 2900-298: Approximately 1.53 miles long. Provides access to Tallow Salvage units 25, 45, and 46. Portions of this road are located within Riparian Reserves. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2921-280: Approximately 0.60 miles long. Provides access to Tallow Salvage unit 20. This road is not located within a Riparian Reserve. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2921-298: Approximately 0.74 miles long. Provides access to Tallow Salvage units 16, 19 and 52. Portions of this road are located within Riparian Reserves. In addition to the work which has been identified to open and close a Maintenance Level 1 system road there are additional work items that are needed to be completed on this road prior to log hauling. This work is described under System Road Reconstruction.
- 2921-181: Approximately 0.14 miles long. Provides access to Tallow Salvage unit 24. This road is not located within a Riparian Reserve. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2921-180: Approximately 0.53 miles long for the segment that would be used. Provides access to Tallow Salvage units 23, 24 and 27. Portions of this road are located within a Riparian Reserve. In addition to the work which has been identified to open and close a Maintenance Level 1 system road; two armored drain dips would need to have an additional lift of clean 3 inch to 4 inch pit run material (rock) placed in the drain dips if they are wet during harvest operations. Approximately 10 cubic yards of material would be needed at each of these locations. Material would come from the Grassy Ridge Quarry on system road 2980-100.
- 2900-250: Approximately 0.68 miles long. Provides access to Tallow Salvage units 24, 42, and 47. Portions of this road are located within a Riparian Reserve. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2921-230 and -231: Approximately 0.32 and 0.58 miles respectively. Provides access to Tallow Salvage units 14, 15, and 39. These roads are not located within a Riparian Reserve. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2921-201: Approximately 0.10 miles long for the segment that would be used. Provides access to Tallow Salvage unit 50. The portion of this road that would be used is not located within a Riparian Reserve. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.

- 2921-196: Approximately 0.20 miles long for the segment that would be used. Provides access to Tallow Salvage unit 13. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.
- 2980-110: Approximately 0.95 miles long. Provides access to Tallow Salvage units 6, 7, and 8. No additional special work would be conducted on this road beyond what has been previously identified to open and close a Maintenance Level 1 system road.

System Road Reconstruction

Reconstruction on the following National Forest system roads would need to be completed prior to log hauling operations for all of the volume that would be hauled over these road segments:

- 2980-100: The section of this road from the 2980-400 road up to the 2921-200 road would have a four (4) inch lift of crushed rock applied to the running surface (including turnouts). It is estimated that a total of 660-700 cubic yards of crushed rock would be applied on this system road. Portions of the 2980-100 road where this work would occur are located within a Riparian Reserve. Material would come from the Big Stump Quarry on system road 29.
- 2921-000: The section of this road from the 2921-298 road up to the eastern unit boundary of Tallow Salvage unit 51 would have a four (4) inch lift of crushed rock applied to the running surface (including turnouts). It is estimated that a total of 150 cubic yards of crushed rock would be applied on this system road. The section of this road where this work would occur is not located within a Riparian Reserve. Material would come from the Big Stump Quarry on system road 29.
- 2921-298: In addition to the work which has been previously identified to open and close this Maintenance Level 1 system road; two small slumps located in the lower portion of the road would need to be repaired in order to provide an adequate road width for logging equipment to use this road. The first slump area would need to have some large rocks placed at the base of this slump, along with an estimated 100 cubic yards of 6 inch minus chunky pit run material. The second slump area would need approximately 20 cubic yards of 3 inch to 6 inch pit run material. The first slump area is located within a Riparian Reserve but the second slump area is not located within a Riparian Reserve. Material to repair both of these slump areas would come from the Grassy Ridge Quarry on system road 2980-100.

Table 1 describes the Proposed Action for the Tallow Salvage Sale.

Table #1 Tallow Salvage Sale Proposed Action Unit Summary.

Unit #	Acres	Acres to Plant	Temp Roads	Effective Ground Cover (%)	Volume to Remove (thousand board feet)	Fuels RX[2]	Logging System[3]
						Type	Type
1	3.1	0	0	65	60	HP	GSE
1	11.4	0	0	65	230	UB	S
2	3.1	0	0	45	50	YT	GSE
3	0.7	0	0	45	10	YT	YS
4	0.8	0	0	45	20	YT	YS
5	2.3	0	0	45	35	UB	GSE
6	0.7	0	0	45	10	UB	YS
6	5.0	0	0	45	50	UB	GSE
7	15.2	0	0	45	150	UB	GSE
8	2.2	0	0	45	20	UB	GSE
9	3.0	0	0	45	15	UB	YS
10	12.3	0	0	65	125	UB	GSE
11	0.3	0	0	65	5	YT	YS
11	2.1	0	0	65	20	YT	GSE
12	1.5	0	0	65	15	UB	YS
13	4.0	0	0	65	80	UB	GSE
14	1.2	0	0	45	20	HP	GSE
15	1.4	0	0	65	20	YT	YS
16	1.4	0	0	65	15	UB	YS
16	17.8	0	0	65	360	UB	S
17	3.2	0	0	45	35	UB	YS
18	4.2	0	0	45	40	UB	GSE
18	1.6	0	0	45	15	UB	YS/GSE Swing
19	2.6	0	0	45	10	HP	GSE

[2] Fuel treatments include: UB – Underburn, HP –Hand Pile and Burn and YT – Yard Tops.
[3] Logging Systems include: Ground Based Logging (GSE); Yoader Skyline (YS); Skyline (S); and Yoader Skyline/Ground Based Swing (YS/GSE Swing).

Unit #	Acres	Acres to Plant	Temp Roads	Effective Ground Cover (%)	Volume to Remove (thousand board feet)	Fuels RX[2]	Logging System[3]
						Type	Type
20	9.4	0	0	45	140	UB	GSE
21	3.4	0	0	45	50	UB	YS
22	3.4	0	0	45	35	UB	YS
23	3.2	0	0	65	15	HP	YS
23	0.5	0	0	65	5	YT	GSE
24	6.7	0	0	45	70	UB	GSE
24	1.6	0	0	45	15	UB	YS
25	15.7	4.0	0.18	65	470	UB	S
25	2.8	0	0	65	30	UB	GSE
26	6.8	0	0	65	70	UB	GSE
27	1.2	0	0	65	15	YT	YS
28	2.4	0	0	65	25	UB	GSE
29	0.4	0	0	65	5	YT	GSE
30	3.5	0	0	65	15	HP	GSE
31	3.9	0	0	65	40	HP	S
32	2.5	0	0	65	25	UB	YS
33	2.0	0	0	65	20	YT	GSE
34	1.8	0	0	65	20	YT	GSE
36	5.5	0	0	65	80	UB	GSE
36	11.3	0	0	65	230	UB	YS
37	0.6	0	0	65	10	HP	YS
38	1.1	0	0	65	10	HP	YS
39	1.8	1.8	0	65	55	UB	S
40	0.2	0	0	45	5	HP	GSE
40	1.2	0	0	45	10	YT	YS
41	2.2	0	0	45	20	HP	GSE
42	1.1	0	0	65	15	YT	GSE
45	1.6	0	0	65	15	HP	YS/GSE Swing
46	0.4	0	0	65	5	YT	YS

Unit #	Acres	Acres to Plant	Temp Roads	Effective Ground Cover (%)	Volume to Remove (thousand board feet)	Fuels RX[2]	Logging System[3]
						Type	Type
47	0.9	0	0	65	10	YT	GSE
49	5.7	0	0.02	65	55	UB	YS
50	3.5	3.5	0	65	15	YT	YS
51	4.8	0	0	65	70	HP	S
52	4.9	4.9	0.10	65	100	HP	S
Totals	**~ 219 Acres**	**~ 14.2 Acres**	**~ 0.30 Miles**		**~ 3180 MBF**		

Note: All acres, lengths and volumes are based on GIS and GPS data and are within +/- 10% of the actual on-the-ground disturbance that will occur.

Mitigation Measures

In order to comply with Management Area 11 Big Game Winter Range restrictions, timber sale related activities may be curtailed from December 1 to April 30. Any salvage related activity within this timeframe would require pre-approval by the District Wildlife Biologist.

All salvage units are greater than 260 meters from the seven Northern Spotted Owl (NSO) activity centers, as are the haul routes (Figure 2). To the extent practical, conduct as much of the noise-generating work outside of the critical nesting season (March 1 to July 15) as possible.

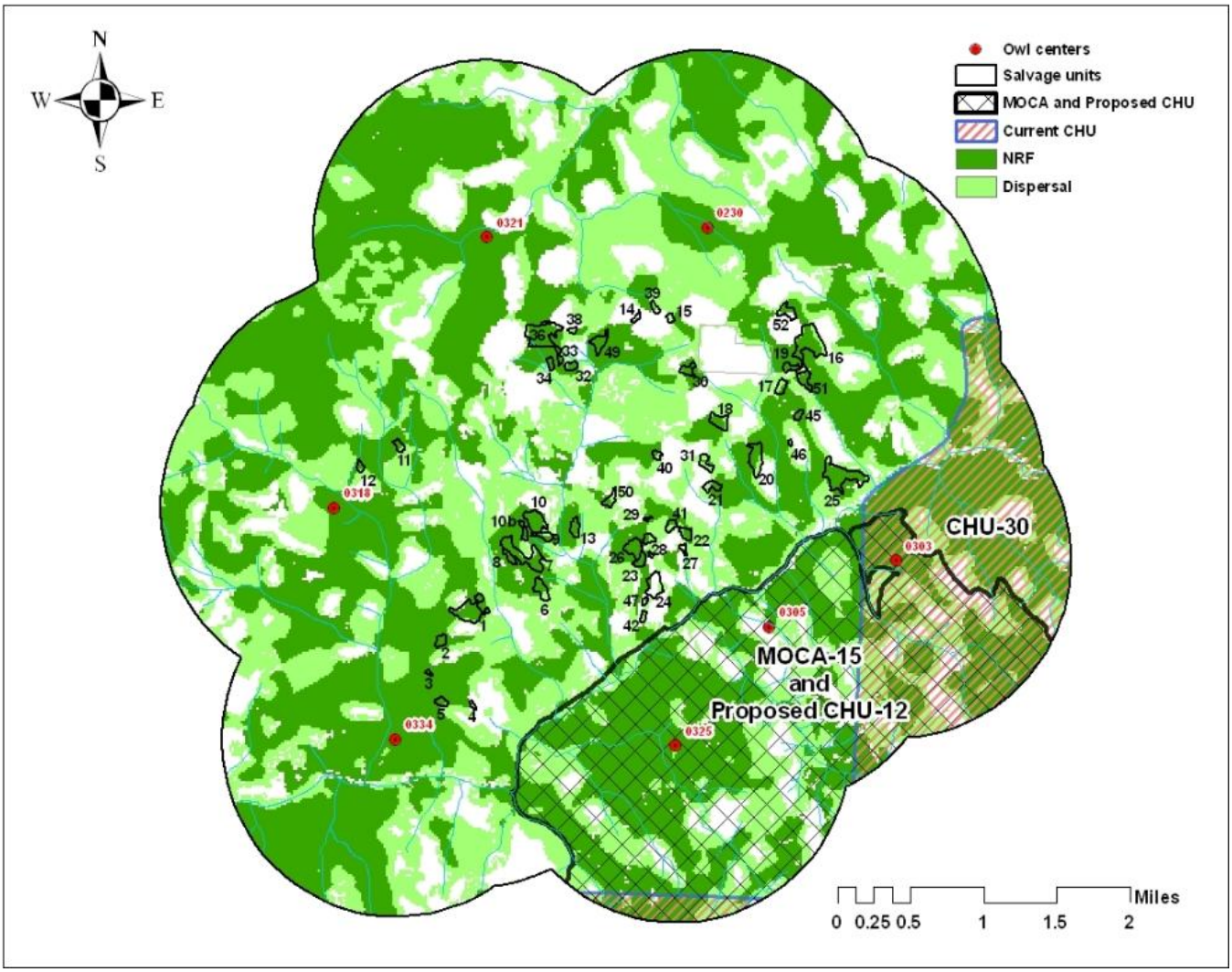

Figure 2. The Tallow Salvage Sale Northern spotted owl action area. Figure 2 prepared by Ray Davis, Forest Wildlife Biologist for the Umpqua National Forest and is included in the Biological Assessment for the Tallow Salvage Sale.

Best Management Practices/Management Requirements

Best management practices and management requirements will be implemented in order to meet laws, regulations, and policies. In most cases, they have been designed to reduce or eliminate potential environmental effects. General Water Quality Best Management Practices (USDA-FS 1988) are prescribed to protect beneficial uses and to address water quality objectives as required by the Federal Clean Water Act and the Forest Plan, as amended. A complete BMP checklist is incorporated into this decision and can be found in the Project Record.

Decision and Rationale

I have decided to implement the Tallow Salvage Sale project as proposed and described above, in order to meet the purpose and need for this project.

Salvage is appropriate in the Matrix land allocation; in this case, only a portion of the area affected by blowdown will be salvaged (about 13%), leaving about 87% of the acres affected by the winter storms unsalvaged.

The use of either a ground based logging system or a skyline logging system is appropriate since both of these logging systems have the ability to protect all of the sensitive resource values found within the Tallow Salvage Sale harvest units. The use of a “yoader” skyline logging system is a very effective method to yard wind-thrown trees without causing excessive damage to green trees or to sensitive soil resources. In addition, a “yoader” skyline machine is self supporting and does not require any guy-lines or the need to cut or notch any live green trees. Minor changes to logging systems may occur during the implementation of this salvage sale but it is not expected that more than 5% of the acres will have any changes made. Any minor changes which are implemented on the ground will still provide the same level of resource protection as previously described.

The fuel treatments recommended to be used to treat activity generated fuels are appropriate and will enable the Umpqua National Forest to begin the process of returning the planning area to a more historic fire regime, albeit in a small scale, in this important big game winter range area.

There is sound rationale to proceed with the previously mentioned reforestation activities in Tallow Salvage Sale units 25, 39, 50 and 52 where few, if any trees, survived the wind-storm. At this time, there does not appear that any of the remaining acres in the Tallow Salvage Sale need any reforestation activities due to the presence of adequate quantities of healthy green trees in these areas. The use of a variety of tree species used during the reforestation activities is appropriate, since all of these species are found in these geographic areas.

The sub-soiling of the areas previously mentioned in this document is important in order to ensure that the activity areas for the Tallow Salvage Sale do not exceed the maximum quantity of compacted soil conditions within these areas, thereby meeting Umpqua LRMP Standards and Guidelines. Sub-soiling areas in other timber sales on the Umpqua National Forest with similar types of equipment has shown to be very effective in reducing soil compaction that occurs during timber harvest activities.

Re-vegetating exposed soil created by this salvage sale is very important so that soil erosion is minimized (thus meeting Umpqua LRMP Standards and Guidelines), and so that the chance for the establishment of noxious weeds/invasive plant species is

minimized. The application of a seed mix of native grass species on this bare ground will help minimize these concerns and it will also provide important forage opportunities for a variety of big game wildlife species found in the project area.

Treating noxious weeds and applying prevention standards will meet the Standards and Guidelines for prevention of noxious weeds (as described by the 2005 Record of Decision for the Pacific Northwest Region FEIS for the Invasive Plant Program).

Maintaining adequate quantities of effective ground cover after harvest operations and fuel treatment activities have been completed is very important in order to protect the sensitive soil resource values found within the planning area. The retention of effective ground cover will also minimize the impacts to sensitive aquatic resource values found within the project area, thus meeting Umpqua LRMP Standards and Guidelines.

While scoping indicated that some members of the public do not agree with building temporary roads, there is a need to construct temporary roads to provide access to the salvage volume in Tallow Salvage units 25, 49, and 52. All of these temporary roads will be constructed on gentle topography or on ridge-tops, where the chance for sediment delivery into the Riparian Reserve land allocation is very minimal. Upon completion of use, all of these temporary roads will be obliterated to standards so that soil resources are protected and so motorized vehicles cannot travel on these former road prisms. This type of temporary road construction has been minimized to the extent practical. Only 0.30 miles of temporary roads will be constructed with this salvage sale. I considered not constructing these temporary roads based on scoping comments and instead using a helicopter to harvest the wind-thrown trees in these areas. However, the economic trade-offs with using a helicopter logging system was substantial in comparison with using a more conventional logging system in conjunction with temporary road construction. Not salvaging these units was also considered, but because the temporary road construction is so minimal, I believe that the tradeoffs associated with such minimal temporary road construction are worth the small scale impacts as described above.

Maintenance of National Forest system roads is very important in order to protect resource values in lands adjacent to these roads. The opening and subsequent closing of approximately 6.37 miles of Maintenance Level 1 system roads is appropriate in order that we can harvest this wind-thrown timber with conventional logging systems. While some of these roads are located within a Riparian Reserve, the use of these roads during time-frames when weather conditions is appropriate and I am confident that aquatic resource values can be protected when these roads are being used. Reconstructing portions of National Forest system roads 2980-100, 2921-000, and 2921-298 is very important so that the integrity of these roads is maintained over the long-term. Reconstruction of the two slumps on the 2921-298 road would result in short-term impacts to riparian forest conditions by disturbing soil, vegetation, and changing localized habitat conditions at the site scale. The duration of these impacts are expected to be less than 1 or 2 years. The work in the two armored drain dips on the 2921-180 road are not on a fish bearing stream so there is no potential to harm fish related to this work. The reconstruction of the two slumps on the 2921-298 road would result in slightly improved long-term benefits where erosion from water flowing over the system road and through the fill is currently contributing sediment into a Class IV stream. Stabilizing these slumps on the 2921-298 road with the reconstruction work previously mentioned would improve this situation.

Findings as Required by Law, Policy and Regulation

Finding of Consistency with Applicable Forest Service Management Direction and the National Forest Management Act

I have reviewed the specialist reports for the Tallow Salvage Sale. All of these documents support the purpose and need for the project and outline specific actions to meet the purpose and need and to comply with the Standards and Guidelines and Management Area direction outlined in the Umpqua LRMP. This decision is tiered to the Final EIS for the Umpqua National Forest Land and Resource Management Plan (1990).

Several areas defined as unique habitats exist within the area. The LRMP for the Umpqua National Forest assigns "Prescription C5-1 Unique Wildlife Habitat" to these areas. Prescription C5-1 states "No salvage permitted except where removal of timber killed by catastrophic events such as wind-throw, wildfire, drought or severe insect or disease infestation will not further adversely impact wildlife habitat values." A no-cut buffer of 150 feet is generally assigned to unique habitats. These guidelines were developed in the context of old-growth, even-aged management of the remaining old-growth forest to protect areas from high impact logging. Tallow Salvage Sale units 6, 7, 23, 25, 32, 33, 45, 51, and 52 have unique habitats within 150 feet of their boundaries. The Wildlife Biologist for the Tallow Salvage Sale has concluded that it is appropriate to remove some of the wind-thrown trees within 150 feet from these Unique Wildlife Habitats, as long as those wind-thrown trees which lie within the boundary of the unique habitats are left in place. The removal of the wind-thrown trees within 150 feet from these areas will not further adversely impact wildlife habitat values because:

- The removal of the wind-thrown trees will remove the obstructions on the ground which will allow access into important forage areas for big game species in big game winter range;
- The treatment of activity generated fuels in these salvage areas by under-burning, hand piling and burning will increase the quantity and quality of forage available for a variety of big game species;
- The sub-soiling of skid trails and landing areas and the subsequent re-vegetation of the bare ground with a mixture of native grass species will also increase the quantity and quality of forage available for a variety of big game species.

I have also reviewed the Jackson Creek Watershed Analysis as it relates to this project. In that document, a recommendation was made to not conduct any additional ground-based timber harvesting within this 5th field watershed, until such time that recovery of the sensitive soils had been achieved. However, it is appropriate to use ground-based logging systems in portions of the Tallow Salvage Sale, since areas off of the skid trails will be sub-soiled to avoid the creation of detrimental soil conditions associated with this project. To further address the sensitive soil resource values found within the ground-based harvest units, no heavy equipment to "grapple-pile' activity generated logging slash concentrations is proposed; instead, hand-piling and burning or under-burning this slash is proposed.

Based on scoping comments, I also reviewed the locations of all of the salvage units to see if these areas were impacted to some extent by the Tallow wildfire, which was a fire that was a part of the Tiller Complex fires of 2002. All or portions of Tallow Salvage Sale units 6-10, 13, 32, 34, and 50 were impacted by the 2002 Tallow fire. While this fire

resulted in the mortality of trees, none of these dead trees were subsequently salvaged after that fire activity. With the exception of Tallow Salvage Sale unit #50, all of the other units previously impacted by the 2002 Tallow fire burned at the low intensity level with minimal impacts to sensitive resource values. However, Tallow Salvage unit #50 burned at a higher intensity level. Based on this information, I feel that the fuel treatments recommended for all of these salvage units are appropriate and will not adversely impact the soil resources within these salvage units, and the slash treatment for Unit #50 is yarding tops attached. In addition, the retention of 45-65% effective ground cover (EGC) will further protect the soil resources found in these areas.

Based on the above reviews of the specialist's reports, the LRMP and the Watershed Analysis, I find that:

- This project will not prevent attainment of the goals and objectives of the Aquatic Conservation Strategy.

The Umpqua National Forest LRMP was developed and approved in 1990 using the provisions of the planning rule in effect prior to November 9, 2000 (the 1982 planning rule). The Forest Service now has a new planning rule (36 CFR 219, published in the Federal Register on April 21, 2008) referred to as the 2008 planning rule. The 2008 rules specifically states at 36 CFR 219.14(b)(4) that, for plans developed under the 1982 rule, the 1982 planning rule is without effect. There remain no obligations from that regulation, except those that are those specifically in the plan. The only requirement specifically provided in the 2008 rule related to projects is at 36 CFR 219.8(e), requiring that projects and activities must be consistent with the applicable plan components. As required by 36 CFR 219.8(e), I have found that this project is consistent with the Standards and Guidelines in the 1994 Northwest Forest Plan, as amended and the 1990 Umpqua National Forest Land and Resource Management Plan, as amended.

Based on my review of the interdisciplinary analysis for this project, I find that the project is consistent with the standards, guidelines, and amendments of the Umpqua National Forest Land and Resource Management Plan, as amended by the Northwest Forest Plan and is therefore consistent with the National Forest Management Act. Therefore, I find that the Tallow Salvage Sale Project is consistent with all applicable Forest Service management direction.

Finding of Consistency with State Historic Preservation Office Policies

Based on my review of the heritage resource report, I find that the project is consistent with the National Historic Preservation Act. Consultation has been completed with the Confederated Tribes of the Grand Ronde, Confederated Tribes of the Siletz, and the Cow Creek Band of Umpqua tribe of Indians by Debra Barner, Heritage Program Manager for the Umpqua National Forest. Under the treaties with the Tribes, no trust resources or reserved treaty rights are given for the lands managed by the Umpqua National Forest. Therefore, no effects to trust resources or reserved treaty rights would occur with the proposed Action for the Tallow Salvage Sale.

Finding of Non-Jeopardy to Endangered, Threatened or Sensitive Species and No Adverse Effect to Species Covered Under the Fisheries Conservation and Management Act

The District Fisheries Biologist has determined in the Biological Assessment that this project would have no effect on any threatened species or their critical habitat, no effect on Essential Fish Habitat, and no impact on any sensitive species. This project complies

with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act.

The District Wildlife Biologist has determined in the Biological Evaluation that this project would “Not Likely to Adversely Affect” the Northern spotted owl or their critical habitat, and would have no impact on Management Indicator or Rare and Uncommon Wildlife Species. This project “may impact individuals or their habitat, but will not likely contribute towards a Federal listing or cause a loss of viability to the population or species” for Johnson’s hairstreak, Coronis fritillary, Evening fieldslug, Salamander slug, Oregon shoulderband, and the Chace’s sideband, which are species on the R6 Regional Forester’s sensitive species list.

A thorough analysis pertaining to the retention of down woody material within and outside of the salvage units was completed. Numerous transects were run in the field within representative sample areas to identify the existing quantity of down woody material in all decay classes is present on the landscape at this time. There are 48 proposed salvage units and these units total 219.1 acres scattered across the Tallow Butte area, located entirely within Matrix allocation. These 219.1 acres account for about 13% of the estimated total amount of blow-down within the action area. Stated another way, about 87% of the blow-down within the action area will remain un-salvaged and will provide pockets of high levels of down wood. About 215 acres of the proposed salvage were in areas considered as nesting, roosting, and foraging (NRF) habitat for the Northern spotted owl. Units 39, 50 and 52 are no longer considered NRF, because the windstorm blew almost all trees down. A four-acre patch of unit 25 is also no longer considered NRF. These larger blow-down patches (2-5 acres in size) will be reforested after salvage and fuels treatments. The project wildlife biologist has determined that this project is “Not Likely to Adversely Affect” the Northern spotted owl because of the small scale of the project and the negligible change to its habitat. The wildlife biologist also determined that salvaging would result in reducing fuel loads adjacent to areas that currently provide NRF habitat.

The project was designed to retain down wood to provide for 1% cover for every acre of each salvage unit. The following table will be used to achieve this project design feature (Table 2) and compliance with Standards and Guidelines.

Table 2. Down wood guidelines used to achieve 1% cover per acre of salvaged unit. For example, retaining two 30" dbh trees and one 20" dbh tree/acre would achieve 1% down wood cover per acre. Different combinations of down tree retention can achieve 1% cover (%COV); V(m^3) is the volume equated the down wood.

DBH (in)	%COV	V(m^3)
10	0.1	0.8
15	0.12	2.0
20	0.2	4.0
25	0.3	6.6
30	0.4	10.1
35	0.5	14.6
40	0.6	20.2
50	0.7	33.3
60	1	50.5
70	1.1	68.6
80	1.4	89.5

Note: these DBHs apply to the entire blown down tree bole

Based on the ground data, this project design feature should maintain about 3-4% down wood cover post salvage (1% of new blowdown plus pre-existing older down wood). This amount of down wood cover is similar to that described by Hershey et al. (1998) for Northern spotted owl (NSO) nest sites in the western Cascades Physiographic Province. At nest sites, the mean volume of class 1 and 2 down wood was 52.3 m^3/ha (Hershey et. al 1998), which (using Table 2) roughly equates to 1% cover. The amount of wood cover being retained post-salvage is designed to maintain appropriate levels of down wood for NSO nesting and also exceeds Forest Plans standards and guidelines, and meets the 50% tolerance level in DecAID (for SW Oregon mixed conifer forests). Post salvage down wood volumes would remain ≥210 m^3/ha within salvaged units. Therefore, I find that the Tallow Salvage Sale Project does not jeopardize the continued existence of any endangered or threatened wildlife species.

The District Botanist has determined that this project would have "No Effect" on threatened or endangered species or their critical habitat, and No Impact on any Rare and Uncommon plants, bryophytes and lichens. The District Botanist has also determined that this project may impact Rare and Uncommon fungi individuals including: *Boletus pulcherrimus, Cortinarius barlowensis, Dermocybe humboldtensis, Gomphus kauffmani, Pseudorhizina californica, Leucogaster citrinus, Ramaria amyloidea, Ramaria aurantiisiccescens, Ramaria largentii, Ramaria spinulosa var. diminutive, Rhizopogon inquiatus, Rhizopogon exiguous,* and *Stagnicola perplexa.* The botanist has determined that the project "may impact individuals or their habitat, but will not likely contribute towards a Federal listing or cause a loss of viability to the population or species" for 39 vascular plant species, the 20 fungi species, the 12 lichen species, and the 24 bryophyte species on the R6 Regional Forester's sensitive species list (see Project Record).

Finding of the Absence of Adverse Effects to Extraordinary Circumstances

Scoping to determine the presence or absence of potential effects on extraordinary circumstances occurred in the April Umpqua National Forest Schedule of Proposed

Actions and a scoping notice was sent to interested people on June 13, 2008. A field trip to the area was also held and The Roseburg News-Review also featured the project in a front page article. From scoping, 14 requests for information or statements of interest were received; I have documented the scoping comments received and considered that input in finalizing the proposal (see Project Record).

In July of 2008, approximately ten blowdown logs and three hazard trees were removed for a restoration project from the outer portion of the Riparian Reserve adjacent to Unit 36 of the Tallow Salvage Sale. During the field trip, I had indicated that these logs would not be removed during the Tallow Salvage Sale. Since the down wood was subsequently removed for a restoration project, I have fully considered this changed condition since we scoped the project and based on recommendations by wildlife and fisheries personnel, I have determined that adequate downed wood still remains in this riparian reserve and that no changes are needed for this project.

The 30-day notice and comment period ran from September 18, 2008 to October 17, 2008. Three comment letters were received; all comments were read and were responded to in Appendix A. Two comment letters were in support of this project, while one letter from the conservation group Oregon Wild, does not support this project. I have reviewed all comments and I believe that we have minimized the impacts of this project and have designed the project in a responsible and conservative manner. Therefore, I conclude that there are no adverse effects to extraordinary circumstances that would trigger the preparation of an EA or EIS.

Based on my review of the interdisciplinary analysis, I find that this project does not adversely affect any of the extraordinary circumstances listed in 1909.15, 30.3(2). Specifically, I find that this project does not adversely affect: (a) endangered or threatened species or their critical habitats, or any Forest Service sensitive species; (b) floodplains, wetlands or municipal watersheds; (c) Congressionally designated areas such as wilderness or National Recreation Areas; (d) inventoried roadless areas; (e) Research Natural Areas; (f) Native American religious or cultural sites, or archaeological or historic properties and sites.

Finding of Consistency with All Applicable Federal Laws and Regulations

Based on my review of the actions associated with this project and all applicable specialists' reports, I find that the project is consistent with the Clean Air Act (as documented in the Fuels report), Clean Water Act (as documented by the hydrologist and fisheries biologist), National Forest Management Act, and the National Historic Preservation Act (as documented by the Forest archaeologist). A concurrence letter from the US Fish and Wildlife Service was received on August 28, 2008 and concurs with the "Not likely to Adversely Affect" determination for the Northern spotted owl. Therefore, I find that the Tallow Salvage Sale Project is consistent with applicable Federal laws and regulations.

Finding of Exclusion from Further National Environmental Policy Act Analysis

Based on my review of (1) the actions associated with this project; (2) the environmental consequences documented in the interdisciplinary analysis; (3) the consistency of this project with applicable laws, regulations, and management direction; (4) the non-jeopardy to endangered or threatened species or heritage resources; and (5) the absence of adverse effects to extraordinary circumstances; I find that this project is not significant in either context or intensity (40 CFR 1508.27) and that no substantial effects

to extraordinary circumstances are associated with this projects (FSH 1909.15). I also find that this project will produce no substantial adverse environmental effects, individually or cumulatively, on the physical, biological, or social components of the human environment. I have reviewed the past, present, and reasonably foreseeable actions in the area, including the activities that may contribute to cumulative effects which are listed in Chapter 3 of the Curtis Timber Sale Environmental Assessment; those same projects were considered by the resource specialists in their reports for Tallow. I do not believe that the Tallow Salvage Sale would contribute to adverse cumulative effects, given the scope, scale, and intensity of the project. Therefore, I find that the Tallow Salvage Sale Project is categorically excluded from analysis in an Environmental Assessment or Environmental Impact Statement (40 CFR 1508.4 and FSH 1909.15, Chapter 30.3, Part 1) and that the appropriate category of exclusion is Category 13 as identified in Forest Service Handbook 1909.15, Chapter 31.2, based on the proposed activities of less than 250 acres of salvage harvest with less than ½ mile of road building.

Appeals

Pursuant to the Federal District Court for the Eastern District of California September 20, 2005 clarification in Earth Island Institute v. Ruthenbeck, this decision is subject to administrative review (appeal) in accordance with 36 CFR 215. The 45-day appeal period begins the day following publication of this decision in the Roseburg News Review, the newspaper of record.

The Notice of Appeal must be filed with the Appeal Deciding Officer:

Forest Supervisor, Umpqua National Forest
Attn. 1570 Appeals
2900 NW Stewart Parkway Roseburg, OR 97471
Business Hours: 8:00 am-4:30 pm, M-F, excluding Federal Holidays.
Fax: 541-957-3495, Email: appeals-pacificnorthwest-umpqua@fs.fed.us

It is the responsibility of those who appeal a decision to provide the Forest Supervisor sufficient written evidence and rationale to show why my decision should be changed or reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, an appeal must include the following (36 CFR 215.14):

1. Appellant's name and address, with a telephone number, if available;
2. Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
3. When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request;
4. The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
5. Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
6. Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
7. Why the appellant believes the Responsible Official's decision failed to consider the comments and;
8. How the appellant believes the decision specifically violates law, regulation, or policy.

For electronically mailed appeals, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of the receipt of the appeal, it is the sender's responsibility to ensure timely receipt by other means.

Implementation

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, the 5th business day from the close of the appeal filing period (36 CFR 215.9(a)). If an appeal is filed, implementation may occur on, but not before, the 15th business day following the date of appeal disposition. In the event of multiple appeals, the implementation date will be established following the last appeal deposition (36 CFR 215.9(b)).

Contact Person

For additional information concerning this decision memo, contact Stuart Carlson, ID Team Leader; phone number (541) 643-9768; email address slcarlson@fs.fed.us.

Signature and Date

Roshanna Stone

Roshanna Stone
District Ranger, Tiller Ranger District

October 30, 2008

Date Signed

November 4, 2008

Date Published

Appendix A
Tallow Salvage Draft Decision Memo 30 Day Comments Summary
October 29, 2008

The 30 day comment period on the Draft Decision Memo for the Tallow Salvage began on September 18, 2008 with the publishing of the Legal Notice in the Douglas County News Review Newspaper. The comment period ended on October 17, 2008.

The following people submitted comments on the Draft Decision Memo:

1. Dave Monett, Monett Logging Inc.
2. Jacob Groves, American Forest Resource Council
3. Doug Heiken, Oregon Wild

All of the comments received on the Draft Decision Memo were considered in development of the Final Decision Memo. These comments, and how the Interdisciplinary Team and District Ranger considered those comments, are detailed below.

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
1	1	Salvage Logging	I think you need to do a lot more treatment to get the volume out.	The use of CE Category 31.2 #13 is proposed to meet the purpose and need of harvesting wind-thrown trees before economic value is lost. The use of this CE limits salvage activities to no more than 250 acres.
2	1	Economics	Salvage as soon as you can because the timber goes quick.	The Umpqua National Forest is proceeding in a timely fashion so that the removal of the wind-thrown trees in areas identified for salvage operations in the Draft Decision Memo can be harvested as soon as possible.
3	1	NEPA	Do what you can with the CE, but a lot more needs to be done and fairly quickly. More areas need to be salvaged.	The use of CE Category 31.2 #13 is proposed to meet the purpose and need of harvesting wind-thrown trees before economic value is lost. The use of this CE limits salvage activities to no more than 250 acres.
4	2	Economics	AFRC would like to see all timber salvage sales be economically viable. The most important aspect of an economical salvage project is to harvest the timber in a timely manner before the wood begins to deteriorate and become infested with insects. AFRC appreciates that the Forest Service has moved forward with this salvage project with a sense of urgency. By completing the appropriate NEPA in a timely manner, we feel that this salvage project will likely maximize the returns to government.	Thank you for your positive comment on this project.
5	2	NEPA	AFRC supports the proposed action, to salvage 219 acres of wind thrown trees in matrix land allocations totaling an estimated 3.2 mmbf.	Thank you for your positive comment on this project.
6	2	Economics/Logging Systems	AFRC feels that the Forest Service has used appropriate harvesting systems on the proposed salvage units and thus should help to contribute to an overall economical salvage project.	Thank you for your positive comment on this project.
7	2	NEPA/Timing Restrictions/Economics	Seasonal, recreational, and wildlife restrictions often make timber sales extremely difficult to complete within the contract timelines. Fire season restrictions on top of seasonal and wildlife restrictions can often limit workdays to 4-5 hours. All these restrictions and delays have a cost to the purchaser, resulting in lower	Thank you for your positive comment on this project.

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
			bids for the stumpage. AFRC is pleased that the Umpqua National Forest will work with purchasers to allow winter harvest and haul on some of the Tallow Salvage Sale where there are rocked or paved surfaces and natural resource values can be maintained. This will hopefully get most of the salvage units harvested before value is lost. The loggers need winter work and the mills generally need winter wood.	
8	3	Salvage Logging	We have significant differences with the Forest Service about salvage logging.	It is recognized that the commenter has these concerns, since they have been mentioned on previous salvage sales on the Umpqua National Forest over the past few years, as well as on other salvage sales in Region 6.
9	3	Salvage Logging	These disagreements are not just ideological disputes, because salvage logging has significant long-term impacts on large snags and dead wood which are essential features of healthy forests.	The impacts to snags and down wood have been disclosed in: The Draft Decision Memo for this project; The DecAid analysis completed for this project; The Wildlife Biological Evaluation for this project; On pages 5, 6, and 7 of the Wildlife Biological Assessment completed for this project; On pages 2, 4, 5, and in the Appendix A of the Letter of Concurrence from the US Fish and Wildlife Service for this project. It should be noted that on Page 6 of the Biological Assessment for the Tallow Salvage Sale prepared by Ray Davis (Forest Wildlife Biologist) it states in Section IV Description of the Proposed Action *"Stated another way, about 87% of the blow-down within the action area will remain unsalvaged and will provide pockets of NRF with high levels of down wood as described above."*
10	3	Down Woody Material/Salvage Logging	Dead wood is vastly under-appreciated but is slowly coming to recognize that maintaining moderate-to-high levels of dead wood is critical to the functioning of complex ecosystems, carbon storage, nutrient cycles, and hydrology.	The impacts to down woody material within the analysis area have been disclosed in the previously mentioned documents for Comment #9.
11	3	Salvage Logging/Forest Succession	Complex old forests come about through processes that involves disturbance and development through	The impacts to down woody material and forest succession within the analysis area has been disclosed in the previously mentioned documents for Comment #9.

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
			complex young and mid-seral forests. Salvage logging truncates succession and establishes structurally depauperate young forests that we already have in excess.	.
12	3	Salvage Logging	There is no sound ecological basis for removing large snags and large down wood when there is a regional shortage of large snags or large down wood and when the over-riding objective of management is to retain large trees, in part so that they can become large snags.	The removal of large snags will not occur with this project. The removal of large diameter wind-thrown trees will occur with this project and these effects have been disclosed in numerous documents found in the project record. It is recognized that minor quantities of green trees will need to be removed within areas identified for salvage activities but it is estimated that these will be primarily small diameter trees at landing areas, and within skyline corridors or tractor skid trails. It should also be noted that no salvage will be conducted within the Riparian Reserve land allocation. It should also be noted that in the Wildlife Biological Evaluation completed for this project, the impacts to the removal of large down woody material within the Jackson Creek 5th Field Watershed have been disclosed. Finally, the impacts to snags and down woody material are disclosed in the Letter of Concurrence completed for this project by the US Fish and Wildlife Service.
13	3	Cumulative Effects	Although this project is "small" in the grand scheme, there are always cumulative impacts.	As previously noted in the response to Scoping Comments which were used during the preparation of the Draft Decision Memo for the Tallow Salvage Sale; the Cumulative Effects have been disclosed for the Tallow Salvage Sale. The Curtis Density Management Project Environmental Assessment (EA) included the Tallow Salvage Sale as a “reasonable foreseeable action”. As such, the effects of the Tallow Salvage Sale have already been considered in Chapter 3 of the Curtis Density Management Project and were considered for this project, also.
14	3	NEPA/Salvage Logging	The salvage CE should never have been adopted because the agency has never reconciled salvage logging with the natural ecological processes that the agency is supposed to be stewarding. This will eventually require a programmatic NEPA analysis.	Thank you for your comment. A programmatic NEPA document conducted at the national level is outside the scope of this project.

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
15	3	Roads/Salvage Logging	The effects of salvage logging can be partially mitigated if no roads are built and all the large long-lasting live and dead trees are retained.	No new system roads will be constructed with this salvage sale. However, approximately 0.3 miles of new temporary road will be constructed with this salvage sale. The effects to resource values with the construction of the temporary roads, and with the removal of the wind-thrown trees within areas identified for salvage activities have been disclosed in the Draft Decision Memo for this project; various specialist reports in the project file, and in the Letter of Concurrence from the US Fish and Wildlife Service for this project.
16	3	Salvage Logging	The Significant impacts of salvage logging is a controversial issue and requires an EIS. Salvage logging has long-term consequences because it takes more than a century to develop large snags and large dead wood to replace those that are removed.	The effects of the salvage activities for the Tallow Salvage Sale were disclosed in the Draft Decision Memo for this project. Scoping occurred on the project prior to the publishing of the Draft Decision Memo. During Scoping, no issues were identified that required the completion of an Environment Assessment (EA) or for an Environmental Impact Statement (EIS).
17	3	Natural Disturbance Processes	This blow-down event was largely beneficial from an ecological standpoint.	The effects of the wind-storm which resulted in the Tallow Salvage Sale included beneficial effects to a variety of resource areas including aquatic resources. The effects have been disclosed in a variety of specialist reports contained in the project file.
18	3	Fire Suppression/Salvage Logging/Dead Wood	Due to fire suppression and salvage logging, forest patches with abundant dead wood are vastly under-represented compared to the historical condition.	The effects to dead wood have been disclosed in the Draft Decision memo for this project and in a variety of specialist reports contained in the Project File. These effects have also been disclosed in the Letter of Concurrence received for this project that was prepared by the US Fish and Wildlife Service.
19	3	Salvage Logging	Salvage logging will turn an ecological positive into a ecological negative.	The effects of this salvage sale have been disclosed in the Draft Decision memo for this project and in a variety of specialist reports contained in the Project File. These effects have also been disclosed in the Letter of Concurrence received for this project that was prepared by the US Fish and Wildlife Service.
20	3	Spotted Owls	7 spotted owl activity centers are located nearby and logging will remove dead wood used by spotted owl prey thereby reducing the quality of habitat for	The effects of the activities associated with the Tallow Salvage Sale on the northern spotted owl have been disclosed in the Letter of Concurrence received for this

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
			threatened species.	project that was prepared by the US Fish and Wildlife Service. In addition, the Wildlife Biological Evaluation also considered and disclosed the effects of this project on the Northern Spotted Owl.
21	3	Down Wood/Salvage Logging	The CE attempts to retain only enough down wood to meet short-term objectives for down wood without consider the need for long-term maintenance and recruitment on dead wood.	The effects of this salvage sale have been disclosed in the Draft Decision memo for this project and in a variety of specialist reports contained in the Project File. These effects have also been disclosed in the Letter of Concurrence received for this project that was prepared by the US Fish and Wildlife Service. A full analysis of down wood was conducted in order to retain an adequate amount of large wood, while still salvaging only a portion of the wood that blew down.
22	3	Spotted Owls	The CE makes a questionable finding of "no jeopardy" but that is not the role of the Forest Service, nor is this finding even attributed to anyone with any expertise in spotted owl biology.	The role of the Forest Service regarding Spotted owl biology is to prepare a “Biological Assessment” when a determination of Not Likely to Adversely Affect is made. The Biological Assessment is then sent to the US Fish and Wildlife Service for consultation. The US Fish and Wildlife Service has the authority to issue a Letter of Concurrence for the project, or to issue a separate decision. The US Fish and Wildlife Service have expertise in Spotted owl biology and thus made the finding that this project would not jeopardize the existence of the Northern spotted owl.
23	3	Roads	This project has a lot of road work, including reopening closed roads in riparian reserves.	The effects of the road work associated with the Tallow Salvage Sale have been disclosed in the Draft Decision Memo for this project, as well as in numerous specialist reports in the Project File.
24	3	Unique Habitats/Salvage Logging	Salvage logging in 9 harvest units will occur within 150 feet of unique habitats recognized in the Umpqua LRMP. This wind event was not catastrophic, nor will the salvage logging be insignificant.	The effects to Unique Habitats were disclosed in the Draft Decision Memo for this project and were considered by the wildlife biologist to not adversely impact wildlife species and also determined that access to stands for certain ungulate species would be improved by this project.
25	3	Salvage Logging/Fire	9 units were affected by both the 2002 Tallow fire and subsequent wind event. Salvage logging may cause significant compound & cumulative impacts.	The effects to the nine units which were impacted by the 2002 Tallow Fire were disclosed in the Draft Decision Memo for this project. The ID Team used this

Comment #	Letter Number	Subject	30 Day Comments on the Draft Decision Memo	Response
				information when recommendations were made for the appropriate quantity of effective ground cover (EGC) that should be retained in salvage units that were impacted by the 2002 fire. The ID team also used this information when recommending the appropriate fuels treatment of activity generated fuels created by this project.
26	3	Spotted owls	The recently adopted final recovery plan for the spotted owl urges the Forest Service to focus on retaining those features of the forest that take the longest to develop such as large trees and large snags.	The recently adopted final recovery plan for the Northern Spotted owl was used during the preparation of the Wildlife Biological Assessment for this project, which was thus in turn used by the US Fish and Wildlife Service when they prepared the "Letter of Concurrence" for this project.
27	3	Salvage Logging	"The costs and benefits of activities such as salvage logging and its appropriate role have emerged as national issues." U.S. Department of Agriculture, Forest Service. 1996. Status of the interior Columbia basin: summary of scientific findings. Gen. Tech. Rep. PNW-GTR-385. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station; U.S. Department of the Interior, Bureau of Land Management. 144 p. p 22.	The effects of the Tallow Salvage Sale have been disclosed in the Draft Decision Memo for this project, and in the Environmental Assessment (EA) for the Curtis Density Management Project. During "Scoping" for this project no issues were identified that required this project to be analyzed in its own Environmental Assessment (EA) or in an Environmental Impact Statement (EIS).
28	3	Fire Salvage	"Treatment of areas following occurrence of major fires is a complex and controversial topic. Complexities include the trade-offs among various resource management objectives, such as fire fuel management objectives and provision of wildlife habitat. Conflicts often exist between economic and ecological objectives … " K. Norm Johnson, Jerry Franklin, Debora Johnson. The Klamath Tribes' Forest Management Plan. Dec 2003. http://www.klamathtribes.org/forestplan.htm	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
29	3	Fire Salvage	"What are appropriate restoration treatment policies after a fire? The topic is contentious …" Franklin and	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of

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			Agee. 2003 "Forging a Science-Based National Forest Fire Policy," Issues in Science and Technology *Online.* Fall 2003. http://www.issues.org/issues/20.1/franklin.html	fire killed trees are not within the scope of this project and will not be discussed further.
30	3	Salvage Logging/Young Complex Forests	The Agency Must Completely Rethink its Salvage Policy, and prepare a new programmatic EIS on young complex forests. The agency must prepare a new programmatic EIS to consider the effect of salvage logging on young complex forests and the development of complex older forest. The agencies are still operating in the "dark ages" in terms of salvage policy. The agencies should not conduct any more salvage logging until they have fully disclosed and considered current scientific understandings about the role of disturbance in forest development.	Salvage activities are not being proposed in "young complex forests" which is defined by the commenter as forests under 10 years old. Based on this situation, this is outside of the scope for this project.
31	3	Salvage Logging/Young Forests	The agency must prepare a programmatic EIS to comprehensively disclose and consider: a. the natural range of variability and existing rarity of complex young forests (e.g., young forests that are unsalvaged after disturbances).	A programmatic EIS is outside the scope of this project. This project does not propose salvage in young forests.
32	3	Salvage Logging/Young Forests	The agency must prepare a programmatic EIS to comprehensively disclose and consider: b. the ecological values (such as wildlife habitat) associated with snags, dead wood, and complex young forests.	A programmatic EIS is outside the scope of this project. This project does not propose salvage in young forests. The ecological role and value of snags and down wood were evaluated by the project Wildlife Biologist and appropriate levels of snags and down wood were prescribed for retention in order to manage for species that require such habitat. In addition, this project salvages only a portion of the trees that were affected by the blow-down event and retains many acres of snags and down wood.
33	3	Salvage Logging/Young Forests	The agency must prepare a programmatic EIS to comprehensively disclose and consider: c. Given the regional deficit of young complex forests and the fact that many species, such as	A programmatic EIS is outside the scope of this project. This project does not propose salvage in young forests. The retention of unsalvaged blow down areas, along with the limited salvage that occurred after the 2002 fires on

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			woodpeckers and secondary cavity users, appear to be adapted to exploit the structure and resources available within disturbed forests, the agencies should comprehensively consider and disclose the direct and indirect effects of salvage logging on species associated with young complex forests. The Forest Service has numerous Management Indicator Species whose populations have not been monitored, so the agencies lack the information necessary to that the salvage logging program will maintain species viability.	the Tiller Ranger District helps minimize the impacts to snags that have been created by natural events over the past decade. The project wildlife biologist analyzed and prescribed adequate levels of snags and down wood for wildlife species of concern, including management indicator species.
34	3	Salvage Logging	The agency must prepare a programmatic EIS to comprehensively disclose and consider: d. the effects of salvage logging on the development of complex forest habitat;	A programmatic EIS is outside the scope of this project. The limited amount of salvage prescribed with this project will serve to help re-initiated a new forest, adding diversity to the landscape and surrounding stands. Areas not proposed for salvage will continue to provide early seral habitat and will be left to develop over time.
35	3	Fire Salvage	The agency must prepare a programmatic EIS to comprehensively disclose and consider: e. all the new science related to salvage logging and dead wood, including but not limited to: Beschta R.L., J.J. Rhodes, J.B. Kauffman, R.E. Gresswell, G.W. Minshall, J.R. Karr, D.A. Perry, F.R. Hauer, and C.A.Frissell, In Press. Postfire management on forested public lands of the western USA. Cons. Bio., 18:x-xx. And Rose et al.	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
36	3	Salvage Logging/Young Forests	The agency must prepare a programmatic EIS to comprehensively disclose and consider: f. "Conservation of diverse young forests has received little attention in forest policy." USDA PNW Research Station. *Science Findings.* Sept 2003. http://www.fs.fed.us/pnw/sciencef/scifi56.pdf "[T]here's a looming shortage of diverse young forests - where seedlings intermingle with fallen logs, standing dead snags, and shrubs - that provide specialized habitat for certain animals and plants. … there's a looming gap in	A programmatic EIS is outside the scope of this project. This project does not propose salvage in young forests. Areas that are proposed for salvage still retain some understory trees; limited reforestation is proposed with this project, thus retaining naturally found diversity within stands proposed for salvage and within stands and areas that were affected by the wind storm, but are not proposed for salvage..

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			diverse, young, early-successional conifer forest, the type of forest that once came in naturally after forest fires. These young forests, up to 10 years old, have a diversity of forest structures - fallen logs and dead snags - and a diversity of plant life. They are important habitat for the western bluebird and other birds that prefer open areas, as well as some shrub species. Today, because of intense timber management on private lands, young forests don't get the chance to develop much diversity." OSU. 2001. Press Release: Researchers Assess Forest Sustainability. http://oregonstate.edu/dept/ncs/newsarch/2001/Oct01/assess.htm According to the CLAMS project: "Diverse young forests: also rare but receiving less attention. Legacy tree habitat: uncertain future.." Ohmann, Spies, Gregory, Johnson. 2002. Vegetation Biodiversity in the Oregon Coast Range. http://www.fsl.orst.edu/clams/download/presentations/j02s_ohmann_10june02.pdf (slide 24).	
37	3	Fire Salvage	The agency must prepare a programmatic EIS to comprehensively disclose and consider: g. Hutto, R.L., 2006. Toward Meaningful Snag-Management Guidelines for Postfire Salvage Logging in North American Conifer Forests. Conservation Biology Volume 20, No. 4, 984–993. http://avianscience.dbs.umt.edu/documents/hutto_conbio_2006.pdf ("Species such as the Black-backed Woodpecker (*Picoides arcticus*) are nearly restricted in their habitat distribution to severely burned forests. Moreover, existing postfire salvage-logging studies reveal that most postfire specialist species are completely absent from burned forests that have been (even partially) salvage logged. I call for the long-overdue development and use of more meaningful snag-retention guidelines for postfire specialists, and I note that the biology of the most fire-dependent bird species suggests that even a cursory attempt to meet their snag needs would preclude postfire salvage	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			logging in those severely burned conifer forests wherein the maintenance of biological diversity is deemed important.")	
38	3	Fire Salvage	The agency must prepare a programmatic EIS to comprehensively disclose and consider: h. A recent study of birds that use post-fire mosaics highlighted the importance of resprouting shrubs and forbs on the re-establishment of nesting birds following wildfire. "Of the 39 species for which nests were found, 14 (37%) used cavities and 25 (63%) built open-cup nests. … Species that built cup nests used snags, residual live trees, resprouting hardwoods, and other ground vegetation and downed wood. The associations between the presence of breeding species and forb and shrub cover indicate that these are important components of the early establishment of bird populations following stand-replacing fires. These data suggest that post-fire management of resprouting hardwoods and herbaceous vegetation should consider potential impacts to bird species that nest and forage in burned forests." CFER 2007. Response of Birds to Fire Mosaics. CFER News. Winter 2007. http://www.fsl.orst.edu/cfer/pdfs/Vol7_1.pdf	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
39	3	Salvage Logging/Young Forests	The agency must prepare a programmatic EIS to comprehensively disclose and consider: i. BLM's Western Oregon Plan Revision DEIS (p. LII) admits that structurally complex young forests develop old forest characteristics twice as fast as structurally deprived initial conditions.	Thank you for your comment. A programmatic EIS is outside the scope of this project. Unsalvaged blow-down will continue to develop without human intervention, as suggested by the commenter.
40	3	Fire Salvage	Large-scale salvage harvesting is often begun soon after a wildfire, when resource managers make decisions rapidly, with longlasting ecological consequences	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
41	3	Fire Salvage	The agency often cites Franklin and Agee. 2003 "Forging a Science-Based National Forest Fire Policy," Issues in Science and Technology *Online.* Fall 2003.	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			http://www.issues.org/issues/20.1/franklin.html to support "active management" after fire. This paper simply does not support aggressive salvage logging. In fact, it has very short discussion of post fire logging that includes the following: Management of postburn areas, including timber salvage, needs to incorporate the concept of biological legacies. Salvaging dead and damaged trees from burns involves the ecology of a place, not simply economics and fuels. In addition to effects on postfire wildlife habitat, there are also effects of salvage logging on soils, sediments, water quality, and aquatic organisms. Significant scientific information exists on this topic as well as on biological legacies. Biological legacies differ by orders of magnitude in natural forests, a fact that should guide restoration programs. Where stand-replacement fires are characteristic, such as with lodgepole pine and Pacific Coast Douglas fir forests, massive areas of standing dead and down trees are usual; salvage operations generally are not needed and do not contribute to ecological recovery, even though they do provide economic return. On the other hand, uncharacteristic stand-replacement fires in dry forests can produce uncharacteristic levels of postfire fuels, including standing dead and down trees. Removing portions of that particular biological legacy may be appropriate as part of an intelligent ecological restoration program, and not simply as salvage. (emphasis added)	

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			At most this paper supports removal of a portion of the uncharacteristic fuels. The only fuels that would be "uncharacteristic" and the small trees that grew up as a result of fire suppression. If the tree was there before fire suppression, than it should remain after a stand replacing fire. Only small fuels should be removed. This intent is clear from Jerry Franklin's work on The Klamath Tribes' Forest Management Plan. Specific principles to guide removal of trees, snags, and logs from burned sites are as follows: 2) Trees (live and dead) and down wood will be retained in sufficient quantities to provide for wildlife and ecological needs, including long-term structural enrichment of the site. However, this goal does have to be evaluated in the context of whether the post-fire levels of snags and down wood are within the characteristic range for the plant association; i.e., where pre-burn stands had uncharacteristic stand densities for that plant association. General guidelines for retention of trees (live and dead) and down wood within the wildfire area are as follows: Retain amounts and distributions of trees as would be characteristic of the pre-burn (historical) landscape … Large snags persist for the longest period, and are most difficult to replace. Consequently, snag and log retention will focus on the largest (21"+ DBH) pieces in the post-burn landscape.	

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			The retention standards should be checked to make sure that they will provide amounts and distributions of snags and down wood that will meet requirements for species at risk, sensitive species, and other species of special interest to the Tribes (such as mule deer). If they will not meet the species requirements, adjust the retention standards accordingly. There is an important caveat: this may not be done if providing for a particular species requires maintaining uncharacteristic levels of post-fire fuels over a significant portion of the burned landscape. As noted above, proposed levels of snag and down wood retention will be evaluated to determine that they will not result in fuel loadings that are above characteristic levels for the plant association. Where they do, the goal will be to adjust retention to characteristic levels. In such a case retention of the large snags and down wood will be the standard since these structures contribute less to fuels on a cubic foot basis, persist longer, and provide habitat for more species. (emphasis added) K. Norm Johnson, Jerry Franklin, Debora Johnson. The Klamath Tribes' Forest Management Plan. Dec 2003. http://www.klamathtribes.org/forestplan.htm pp 108-109.	
42	3	Fire Salvage	The Franklin and Agee piece also makes clear that salvage logging must be considered in an ecological restoration framework and all adverse impacts of the logging must be considered. A truly ecological post-fire	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			plan would involve: rehabilitating fire fighting impacts (e.g. minimize erosion and block OHV use, re-establish native plant communities), significant road closures to protect watershed values and avoid the knee-jerk removal of hazard trees, culvert removal or replacement to provide for passage of fish sediment and woody debris, a long-term plan for managing fuels in the future, plans to avoid as much as possible impacts from seeding (e.g. weeds and competition with native plant communities), planting (dense plantations), logging (e.g. loss of snag habitat, loss of cover, etc.) "Personally, I've come to think we need to change our thinking on salvage logging. There are other values in the forest. In fact, a burned area is probably the most sensitive place you could be working in. The public really hasn't caught on to this yet. People still want to get the cut, get the trees they see as wasting away. They want the economic value. We talk about forest restoration after a fire, but it just got restored. That's what fire does. We know that, but we can't seem to get the message out. Until you start thinking like a black-backed woodpecker, you just ain't going to get it."	
43	3	Fire Salvage	Richard L. Hutto, Ph.D., Director of the Avian Science Center and Professor of Ornithology and Ecology at the University of Montana. _ichard.hutto@umontana.edu or 406.243.4292 *from* Birds in the black: Through following avian wildlife, a UM scientist has discovered that burned forests play a	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			critical role in the health and diversity of the Western landscape By MICHAEL JAMISON of the Missoulian August 11, 2005. Hutto and others have been surveying birds in the Black Mountain fire area and nearly 20 other 2003 fire sites from Glacier National Park down to the Bitterroot, some of which have been salvage-logged. Nearly all woodpeckers have proven absent from salvaged areas, Hutto says, and all other bird species are less abundant in those spots than in areas left unlogged following fires. "I can't think of any other land-use practice where it's uniformly negative, at least in terms of birds," Hutto says. "That's why I end up thinking that a burned place should be lower on our priority list for logging—because it's so sensitive." Hutto's research is some of the first post-fire work that's been done in areas broader than one forest or one salvage-logging job, which may help it yield insightful facts for policymakers as they struggle to find a balance for post-fire salvage logging nationwide.	
44	3	Fire Salvage	Jessie McQuillan. 2006. Still life, with woodpeckers. Missoula Independent. 6/22/2006. http://www.missoulanews.com/News/News.asp?no=5791 "More than 10 years ago, and again two years ago, I joined eight other scientists to explore whether forests might be restored by logging soon after a fire. We had among us a wealth of	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			knowledge across a wide range of fields. We pored over several decades of research but found nothing to show that fire-adapted forests might be improved by logging in the wake of a fire. In fact, we found just the opposite: Most plants and animals in these forests are adapted to periodic fires; they have a remarkable way of recovering – literally rising from the ashes. These forests have evolved with fire. Periodic fires have been part of a normal cycle lasting thousands of years. Logging a burned forest damages the soil, carrying away nutrients, robbing seedlings of moisture and clogging nearby streams. Trees in a burned landscape, both dead and alive, continue to provide homes for wildlife after a fire and form the building blocks of new forests." Karr, James. 2005 Nature doesn't benefit from logging fire-damaged lands | The News Tribune, Tacoma, WA. http://www.thenewstribune.com/opinion/othervoices/story/5379671p-4864728c.html	
45	3	Mountain Pine Beetle Salvage	Jim Snetsinger, Chief Forester. Guidance on Landscape- and Stand-level Structural Retention in Large-Scale Mountain Pine Beetle Salvage Operations. December 2005. http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/stewardship/cf_retention_guidance_dec2005.pdf A review of 116 research articles, dating from 1960 to 2002, which examined bird-forestry relationships in managed forests across North America found that —	The Tallow Salvage Sale will not conduct any salvage activities associated with outbreaks of Mountain Pine Beetles. The Tallow Salvage Sale will only conduct salvage activities in areas impacted by a wind-storm.

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			… The response of birds to forestry practices has been mixed and highly species-specific, but in general, net change in community richness following timber harvest was negligible. Among silvicultural practices, uneven-aged management (e.g., selection harvest) appears to be the most favorable for birds. In contrast, snag removal was highly deleterious, with >80 percent of studies reporting net species loss; net gain was never reported. … … What seems to be particularly detrimental to forest avifauna is removal of snags. When prescriptions involved manipulation of snag densities, either by removing (Kilgore 1971, Scott 1979, Dingledine and Haufler 1983, Scott and Oldemeyer 1983, Schreiber and deCalesta 1992), retaining (Dickson et al. 1983, Zarnowitz and Manuwal 1985, Stribling et al. 1990, Schreiber and deCalesta 1992, Welsh et al. 1992), or creating (McPeek et al. 1987) snags, bird numbers were typically found to be positively correlated with snag density. Unlike even-aged and unevenaged management practices, removal of snags never resulted in more species increasing in abundance than decreasing. The importance of snags to birds is wellknown (Davis et al. 1983 and references therein, Bull et al. 1997, references above), not only to cavity nesters, but also songbirds (Sallabanks et al. 2002) that may use snags for nesting, perching, foraging, singing, and scanning for predators.	

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			… Since large remnant snags and “defective” residual green trees provide much of the snag habitat for cavity-nesters in early- to mid-successional stands, particularly on private lands (Ohmann et al. 1994), retention of these structures will be important for maintaining populations of cavity- and snag-using avian species in managed forests. Snag retention and/or creation were the most commonly listed management recommendations from studies included in our review. We concur that leaving snags wherever possible is another important way that foresters can improve or maintain avian habitat quality within managed forest landscapes. Rex Sallabanks and Edward B. Arnett. Accommodating Birds in Managed Forests of North America: A Review of Bird-Forestry Relationships. PSW-GTR-191. http://www.fs.fed.us/psw/publications/documents/psw_gtr191/Asilomar/pdfs/345-372.pdf Part of the natural post-fire recovery process is that beetles eat some trees parts and excrete nutrient-rich frass which enhances the growth of surviving and newly established plants. New science indicates that salvage should be avoided or delayed and snags must be retained well-distributed in order to realize the nutrient-cycling benefits of beetle frass. Beetle droppings—known in the scientific world as frass—are crucial to forests recovering from fire. The tiny piles of	

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			droppings, found at the bases of trees, resemble cones of sawdust, and they help nourish the forest floor by increasing microbial activity in the soil. This process can also determine which kinds of trees grow back. “This means that rather than being considered a pest or a nuisance, these beetles are in fact very important to helping burned forests recover,” Cobb said. He is concerned, though, because salvage logging is taking the beetles out of the forest before they can do their job; the insects lay their eggs in the dead trees, and the larvae are subsequently destroyed when the wood is processed at sawmills. “That population is being removed from the salvage site and that takes away the mechanism by which the nutrients are returned to the soil.” Salvage logging should be delayed after a fire to allow the beetles to complete their life cycle, Cobb said. …	

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			Betkowski, Bev. 2007. Beetle dung helps forests recover from fire. University of Alberta. Public release date: 3-Dec-2007. http://www.eurekalert.org/pub_releases/2007-12/uoa-bdh120307.php http://www.rso.ualberta.ca/news.cfm?story=69803 *citing* Tyler Cobb. 2007. Boreal Mixed-wood Beetles and the Cumulative Ecological Consequences of Disturbance. PhD Dissertation. University of Alberta. Spring 2007.	
46	3	Salvage Logging	Many species of wildlife thrive on dead trees. The Oregon Wildlife Conservation Plan recommends maintaining and creating snags and down logs for a variety of at-risk "strategy" species, including: American marten, California myotis, Fringed myotis, long-legged myotis, Pallid bat, ringtail, silver-haired bat, Townsend's big-eared bat, three-toed woodpecker, black-backed woodpecker, flammulated owls, Lewis' woodpecker, spotted owl, Pileated woodpecker, western bluebird, western purple martin, white-headed woodpecker, clouded salamander, Oregon slender salamander, Chace sideband, evening fieldslug, Oregon shoulderband, and traveling sideband. The Oregon Conservation Plan. February 2006. http://www.dfw.state.or.us/conservationstrategy/contents.asp	The Wildlife Biological Assessment completed for this project, the Wildlife Biological Evaluation completed for this project, and the subsequent Letter of Concurrence received for this project form the US Fish and Wildlife Service contains recommendations to retain appropriate quantities of this material for these species.
47	3	Fire Salvage	Scientific study of the effects of the Davis fire salvage showed that black-backed woodpecker, hairy woodpecker, western wood-pewee, brown creeper and yellow-rumped warbler were more common in unsalvaged stands. See Rebecca Cahall, Influence of Salvage Logging on Forest Birds After Fire in the Eastern Cascades. CFER News, Summer 2007. http://www.fsl.orst.edu/cfer/pdfs/Vol7_2.pdf http://ir.library.oregonstate.edu/dspace/bitstream/1957/	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			5898/1/Cahall_Thesis.pdf	
48	3	Salvage Logging	Consider and disclose reasons NOT to remove snags Science tells us that natural forests develop after disturbance with abundant structural legacies. These legacy features include snags and down wood which play a wide variety of valuable ecological services for the developing forest, including but not limited to: nutrient uptake, storage, and release water uptake, storage, and release micorhyizal colonization wildlife habitat, in particular for primary cavity species which are recognized as a "keystone" element of healthy forests allowing some forest species to linger in burned forests after disturbance and to recolonize burned forests sooner after disturbance, thereby shortening the period during which burned stands are unsuitable for wildlife providing food for insects that in turn feed a wide variety of other wildlife such as birds and bats favorable sites for seed germination and establishment mechanical thinning of the regenerating stand due to the process of snag fall shade and cover for everything from seedlings to big game perches, nest, and den structures, In general, the larger the piece size, the longer they tend to last. But salvage logging removes those very elements that are most valuable for wildlife and most difficult to replace.	The effects of the activities to each of these subject areas has been disclosed in a variety of Specialist reports in the Project File and in the Draft Decision Memo completed for this project.

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49	3	Fire Salvage	Since this project involves post-fire commodity extraction (also often referred to erroneously as "salvage" logging) please carefully analyze, consider, and disclose the site-specific analysis of the many reasons NOT to do post-fire commodity extraction, including but not limited to: adverse impacts to soil, such as erosion, compaction, displacement, litter disturbance, nutrient depletion; loss of chemical buffering; loss of soil organic matter; loss of burrowing wildlife that help aerate soils; reduction of nitrogen fixing plants that boost soil fertility; loss of slope and snow stabilizing effects which could lead to mass wasting or eliminate mechanisms that may mitigate mass wasting; loss of down wood functions s such as trapping sediment and aiding water infiltration, and creating microsites favorable for germination and establishment of diverse plants, and habitat for diverse wildlife; loss of decaying wood and depletion of the "savings account for nutrients and organic matter" which affects site productivity through the removal of dead trees which store nutrients and slowly release them to the next stand. Recent studies indicate that wood may release nutrients more rapidly than previously thought through a variety of decay mechanisms mediated by means other than microbial decomposers, i.e. fungal sporocarps, mycorrhizae and roots, leaching, fragmentation, and insects; loss of nutrients from live trees that are determined to be "dying." Live trees produce serve as refugia for animals, invertebrates, and	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			mycorrhizae; produce litter fall; and help cycle nutrients which are all extremely valuable in the post-fire landscape; loss of wood that serves to buffer soil chemistry and prevent extreme changes in soil chemistry; water quality degradation; loss of water storage capacity in down logs; altered timing of storm run-off which could lead to peak flows that erode stream banks and scour fish eggs; delaying the pace of vegetative recovery and reducing the quality/diversity of the vegetation community; spread of invasive weeds through soil disturbance and extensive use of transportation systems; loss of legacy structures that can carry species, functions, and processes over from one stand to the next; loss of terrestrial and aquatic habitat (mostly snags and down logs) potentially harming at least 93 forest species (63 birds, 26 mammals, and 4 amphibians) that use snags for nesting, roosting, preening, foraging, perching, courtship, drumming, and hibernating, plus many more species that use down logs for foraging sites, hiding and thermal cover, denning, nesting, travel corridors, and vantage points for predator avoidance; Depletion of large wood structures in streams that can cause: 1) simplification of channel morphology, 2) increased bank erosion, 3) increased sediment export, 4) decreased nutrient retention, 5) loss of habitats associated with diversity in cover, hydrologic	

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			patterns, and sediment retention; commercial salvage usually removes the largest trees, but this will disproportionately harm wildlife because: (1) larger snags persist longer and therefore provide their valuable ecosystem services longer and then serve longer as down wood too, and (2) most snag-using wildlife species are associated with snags >14.2 inches diameter at breast height (dbh), and about a third of these species use snags >29.1 inches dbh. Truncation of symbiotic species relations and loss of biodiversity. Sixteen species are primary cavity excavators and 35 are secondary cavity users; 8 are primary burrow excavators and 11 are secondary burrow users; 5 are primary terrestrial runway excavators and 6 are secondary runway users. Nine snag-associated species create nesting or denning structures and 8 use created structures. Reduced avian and terrestrial species diversity which affects plant and invertebrate diversity. Since different wildlife help disperse different sets of seeds and invertebrates, reduced wildlife diversity can significantly affect pace of recovery and the diversity of the regenerating stand. Snag- associated wildlife play a greater role in dispersal of invertebrates and plants, while down wood-associated wildlife play a greater role in dispersal of fungi and lichens. Down wood-associated species might contribute more to improving soil structure and aeration through digging, and to fragmenting wood which increases surface area encouraging biological action that releases	

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			nutrients. Loss of partial shade that helps protect the next generation of forest; loss of cover quality and fawning areas for big game; loss of future disturbance processes such as falling snags that help thin and diversify the next generation of forest;[1] increased human activity and human access that can increase fire risk; increased fine fuels on the forest floor that can cause an increase in fire hazard; loss of seed sources, and loss of diversity of vegetation and microsite conditions. The fact that regional standards for snags and down wood fail to incorporate the most recent science indicating that more snags and down wood (especially large snags and logs) are required in order to maintain species viability and sustain site productivity. Arguments in support of the "reburn hypothesis" are specious. (1) partial reburn may be completely natural and desirable in some cases to consume some fuel and diversify the regenerating forest, and (2) salvage logging will cause a pulse of fine fuels on the ground and actually increase the reburn risk/hazard above natural levels, and (3) fuels that fall to the ground over time will to some extent decay as they fall. Uncertainty calls for a cautious approach. Compare these adverse impacts of salvage logging to the few scant reasons to salvage (e.g., economic recovery of fiber).	

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50	3	Fire Salvage	Prevention of reburn must not be used as a justification for post-fire logging, without carefully documenting the rationale and providing references to published scientific studies (not just hypotheses and speculation and anecdotes). Also, the Forest Service must explain whether logging will increase or decrease the risk of reburn in terms of fuels profiles over various time horizons, ignition sources, etc. Salvage logging increases fine and mid-size fuels in the short-term by leaving treetops, branches, and needles on site. Fine and mid-size surface fuels also occur in unsalvaged areas, but accumulate gradually over time. It is unlikely that fuels in an unsalvaged area would reach the same magnitude as in the post-salvage scenario because decomposition breaks down new material accumulates. As noted by scientists interviewed by the Oregonian, "There would be less risk by leaving dead trees standing where they gradually would decay while keeping their tinder above the reach of flames." Michael Milstein. "Scorched forests best left alone, study finds." The Oregonian, Jan 6, 2006.	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
51	3	Fire Salvage	Please consider at least one non-commercial, restoration-only alternative that invests in restoration and recovery of the fire area by, for instance, eliminating livestock grazing, emphasizing native species recovery, not building any new roads, stabilizing soils disturbed by the fire suppression effort, decommissioning unneeded roads.	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.
52	3	Fire Salvage	Also, consider an alternative modeled on the recommendations of the Beschta report. Specifically: prohibit post-fire logging AND road building on all sensitive sites, including: severely burned areas (areas with litter destruction), on erosive soils, on fragile soils, in roadless/unroaded areas, in riparian areas, on steep slopes, and any site where accelerated erosion is possible.	This project salvages wood from a windstorm event, not a fire event. As such, all comments regarding salvage of fire killed trees are not within the scope of this project and will not be discussed further.

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			We would add: Late-Successional and Riparian Reserves, and protective land allocations or designations including Botanical and Scenic River Areas; protect all live trees; protect all old snags over 150 years old; protect all large snags over 20 inches dbh; protect at least 50% of each size class of dead trees less than 20 inches dbh. *See* Beschta RL, Frissell CA, Gresswell R, Hauer R, Karr JR, Minshall GW, Perry DA, and Rhodes JJ. 1995. Wildfire and Salvage Logging: recommendations for ecologically sound post-fire salvage logging and other post-fire treatments on Federal lands in the West. Corvallis, OR: Oregon State University. Available at: http://www.fire-ecology.org/science/Beschta_Report.pdf	