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JAN 07 2008

Siskiyou Project Technical Comments Submitted to Oregon Bureau of Land Management State Office Concerning the Draft Environmental Impact Statement for Revision of the Resource Management Plans of the Western Oregon BLM Districts.

January 4, 2008

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1. The action alternatives violate the Endangered Species Act.

A. The DEIS failed to identify Oregon Coast Coho Salmon Evolutionary Significant Unit as threatened (DEIS 336, 1071).

Since the DEIS was published circumstances have changed. The court has reversed the Dept. of Commerce decision to delist the Oregon Coast Coho Salmon ESU and the WOPR must evaluate effects on this ESU and formally consult with the National Marine Fisheries Service for this ESU.

B. WOPR action alternatives will jeopardize the survival and recovery of Oregon Coastal Coho Salmon Evolutionary Significant Unit and Southern Oregon Northern California Coho Salmon ESU.

The WOPR action Alternatives are most similar to Alternatives 7 and 8 in the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forrest related Species within the Range of the Northern Spotted Owl (USDA and USDI 1994b) and Alternatives A, B, C in the Medford District Proposed Resource Management Plan and Final Environmental Impact Statement (USDI, BLM 1994e; see p.xix for comparisons of Riparian Management Area Protections and narrative comparisons on p. 4-19). These FEIS's made scientifically credible comparisons between alternatives that contained all aspects of the Aquatic Conservation Strategy (WOPR No Action with ACS) and alternatives which primarily rely on minimized riparian protective buffers (WOPR action alternatives). The USDI/USDA 1994b:3&4 200-201 states that:

> [A]lternatives 7 & 8 [and most resembling WOPR action alternatives] had the lowest likelihoods of attaining sufficient aquatic habitat to support well-distributed populations of the seven races/species/groups of anadromous and resident salmonids...Alternative 7 rated low [10% for coho] primarily because of the small amount of riparian area that would receive special management consideration and the amount of activity that would be allowed in this area....**The principal reasons [for the low ratings in Table 3&4-34 p.197] are the reduced size of Riparian Reserves for non fish-bearing perennial streams and for intermittent streams.** (emphasis added)

In comparison, Alternative 9 with the added ACS protection for intermittent streams "received a greater than 80 percent likelihood of achieving the [desired] outcome for the evaluated salmonds." (USDA/USDI 1994b: 3&4-198). Coho salmon protection was so poor in Alternatives 7 and 8 that the panel of scientists said that there was a 20 percent chance that coho would be extirpated with alternative 7 and a 10 percent chance that they would be extirpated with alternative 8.

Similarly USDI, BLM 1994e (p.4-19, 20, 21) identifies a high risk for landslides, sedimentation, and turbidity from Alternatives A and B (most similar to WOPR action alternatives) because a "large percentage of these first and second order streams would not have a sufficient amount of vegetation either prior to or following a harvest operation to provide a sediment filter or to reduce fire intensity. Increased sediment loads in the first and second order streams would be transported downstream to larger order streams." (UDSI,BLM 1994e 4-19)

C. The BLM has failed to initiate required ESA consultation with National Marine Fisheries Service.

The DEIS:829 states that the revision of Resource Management Plans is subject to Section 7 Consultation under the Endangered Specie Act but no Biological Assessment has been prepared and no request for the required consultation has been made. The ESA directs that consultation be initiated early in the process. The BLM has not made a good faith effort to comply with the ESA. Merely stating the process or describing future intentions does not substitute for actual consultation or compliance with the ESA.

D. The DEIS failed to provide an assessment of ESA listed fish viability or risk of extirpation with action alternatives that do not provide for the existing Aquatic Conservation Strategy (ACS). A scientifically valid comparison of action alternatives (that do not include the ACS) has not been made with the No Action alternative, which legally requires the ACS.

The models and assessments in the DEIS do not directly assess the risk of extirpation or the viability of ESA listed fish populations. The analysis does not provide compelling scientific data for a "no jeopardy" determination. The focus of Environmental Consequences for Fish (DEIS:723) is primarily on Large Wood (DEIS:723-333), Fish Productivity (DEIS:733-740) with only brief discussions of Fine Sediment Delivery, Peak Flows and Stream Temperature (DEIS:741-743). The DEIS fails to integrate these parameters into a discussion that could be evaluated for use in determining compliance with the ESA (See for example USDI/USDA 1994b 3&4 190-203). Legal compliance with the ESA for listed fish species is currently based on compliance with the Aquatic Conservation Strategy (USDA/USDI 1994c: B11-34, aka "The ROD"). The DEIS failed to provide a scientific rational for amendments to existing Northwest Forest Plan (USDA/USDI 1994c) because the WOPR analysis failed to disclose how management decisions would be based on a distinctly different set of criteria that would not include the ACS. For example, current projects on BLM are legally required to meet all Aquatic Conservation Strategy Objectives (USDA/USDI 1994c:B11). The DEIS fails to disclose which, if any, of these objectives would be required to be met for projects (e.g. timber sales). A logical starting point for analysis of major amendments to the Northwest Forest Plan would be the 1994 FEIS that analyzed ACS alternatives similar to those now proposed by BLM (USDI/USDA 1994b 3&4 190-201).

The DEIS has created a time consuming, wasteful, and distracting tangent from previous programmatic impact statements by inappropriately using large wood as a surrogate for fish production. Such modeling may be useful for restoration activities (USDA/USDI 1994c: B30) or watershed analysis (USDA/USDI 1994c: B20) but is entirely inadequate for guiding project decisions (e.g. timber sales) or providing certainty of protection for ESA listed fish species. For example, the need to prioritize instream wood placement based on intrinsic potential of stream reaches (rather than key watersheds) is valid (DEIS: 740) but a single technique that emphasizes large wood in fish bearing streams cannot effectively replace a proven strategy (i.e. ACS) that integrates all aspects of watershed management at multiple scales on the landscape.

2. The DEIS violates the National Environmental Policy Act.

A. Analysis techniques for Environmental Consequences to Fish fail to sharpen the differences among alternatives as required by NEPA and must be replaced.

The NEPA directs agencies to use analysis that sharpens the differences among alternatives to give the decision maker and public clear reasons for choosing one alternative over another. Analysis in the DEIS is contrary to the intent of the NEPA because it blurs and obfuscates the differences among alternatives. For example the use of large wood for modeling fish productivity found essentially no differences in fish production among the alternatives (DEIS:733,Table 210) . Alternative 2 with maximum clearcutting and roadbuilding had nearly the identical fish productivity index as the no harvesting reference analysis. The DEIS:LXI states "[t]he differences among the alternatives, in terms of fish productivity, would be less than 3%" and DEIS:726 footnote 17 states that "sources of error in modeling may be greater than any differences in large wood contributions in these representative watersheds." These unacceptable and scientifically preposterous results should have alerted the BLM to the obvious conclusion that the technique BLM chose (i.e. modeling large wood as a surrogate for fish production) is inappropriate for a programmatic impact statement seeking to evaluate reductions in riparian protection standards in its Resource Management Plans. See for example the sharp differences for risk of extinction for salmonids among alternatives analyzed in USDA/USDI 1994b: 3&4 198 with index percents ranging from 12-82 percent. See for example the sharp differences for fish production among alternatives analyzed in the Medford District RMP FEIS (USDI,BLM 1994e:xxx). The Medford BLM programmatic FEIS reported **low** fish production potential for alternatives with riparian protection similar to WOPR DEIS action alternatives and **mod+** fish production for the "PRMP" which is the same as the "No Action" or Northwest Forest Plan alternative in the WOPR DEIS. How can the 1994 Medford BLM FEIS have one set of results and an FEIS 13 years later (with similar proposals) have completely different results? There is no compelling "new" information indicating that the series of 1994 BLM programmatic FEIS's were wrong and this new analysis is correct. The series of BLM 1994 programmatic impact statements (USDA, BLM 1994a,b,c,d.e,and f) have been found to be scientifically credible and legal by the courts. The WOPR DEIS does

not begin to meet either a legal or scientific standard as did previous programmatic FEIS's with respect to impact analysis for salmonids due to substantial differences in amounts of riparian protection from logging.

The use of large wood to predict long-term salmonid productivity in programmatic impact statements is not a "new" concept. This concept was discredited by the scientific community (Frissell and Nawa 1989) when the Siskiyou National Forest attempted to use large wood to predict salmonid outputs for the Siskiyou National Forest Plan (USDA 1989, see response to comments in Appendix K). The problem with these large wood models is that they 1) rely entirely on large wood to drive numeric fish production and 2) they decouple sediment and stream temperature impacts from logging which eliminates numeric negative "multipliers" from logging. For example, the 1989 Siskiyou National Forest FEIS predicted nearly the same amounts of high fish production for 11 alternatives with no apparent numerical affect from varying degrees of riparian protection or amounts of logging (USDA 1989: Table IV-8 p. IV-89 and Table II-7 p. II-144).

"Habitat degradation is a factor of decline for all the listed fish species and is a major risk factor that continues to threaten fish populations. (DEIS: 337). Unfortunately the DEIS failed to adequately describe or quantify the risk to threatened fish populations from proposed logging of formerly protected areas (riparian reserves, late successional reserves).

B. The DEIS is biased towards reduced impacts to fish from logging because of arbitrary BLM decisions to include or exclude intermingled private lands in impact analysis. Cumulative impacts from sediment are not disclosed because impacts from intermingled private lands were not included in analysis.

On one hand the BLM chose to <u>include</u> private lands with predictions of large wood inputs to streams, thus, increasing the amount of wood delivered and increasing fish productivity (DEIS:724-725). But then the DEIS diminished the negative impacts of sediment by <u>excluding</u> private roads from sediment assessments of alternatives. Only sediment from new BLM roads within 200 ft of steam channels are assessed for sediment contribution. DEIS:760 footnote 4 states "[n]ew roads include BLM new roads only. Information is not available to predict the number of miles of new roads on other lands." In other words, when the inclusion of private lands would diminish logging impacts they were used, but when assessing the cumulative impacts of sediment, the private lands were excluded. This is important because previous assessments of Oregon Forests Practices Act have found it deficient for protecting viable populations of salmonids (IMST 1999). The DEIS fails to recognize previous assessments of minimized riparian buffer and integrate their findings into analysis and discussion. For example, the decision maker needs to know that salmonids populations in intermingled ownerships will have a high probability for risk of extinction due to poor riparian protection standards on intermingled private lands and no restraint on road building. The BLM decision maker must be

informed by BLM impact analysis that various management options on intermingled BLM lands either does or does not increase the risk of extirpation.

C. **Sediment impacts that can jeopardize the viability of salmonid populations were not adequately analyzed. The DEIS fails to alert the decision maker to chronic and catastrophic cumulative sediment impacts related to logging, road building, off highway vehicles, increased log hauling, and suction dredge mining. New road BMP's are impractical and not feasible.**

a. The DEIS fails to identify dust mobilized by increased log hauling and anticipated increased off-highway vehicles as a significant factor contributing fine sediment to salmonid streams. Road dust mobilized during the summer cannot be dismissed as negligible as studies in Idaho and elsewhere have found it to cause measurable increases in stream sediments. For example, BLM needs quantify dust delivery to streams from OHV emphasis areas. I have experienced extreme and prolonged periods of dust at Elderberry Flat OHV emphasis area while collecting sediment data from Evans Creek. Increased logging will mean increased winter hauling that will increase sediment delivery to streams from all ownerships. BLM cannot dismiss sediment from existing haul routes that traverse checkerboard land ownership. Cumulative sediment impacts are understated because of increased log hauling on new and existing roads, especially during wet season hauling (see numerous stream crossings by roads on DEIS:341). Table 212 (DEIS 760) is not accurate because it indicates that alternative 2 (with the most logging and road increases) has the lowest "potential fine sediment delivery". The DEIS does not explain why alternative 2 has a much lower proportion of roads within the sediment delivery distance (DEIS:759, Figure 270). If current BMPs (DEIS 1134-) work, why change them? New wording in BMPs for roads (DEIS: 1135 first 3 BMP's) to attain desired sediment modeling result (1109) is not practical or feasible. BLM must be truthful about sediment from new roads based on experience from existing roads. Rewriting BMPs will not make the sediment from roads disappear.

b. The DEIS fails to identify denudation of vegetation and subsequent erosion from streamside areas caused by all terrain vehicles, off highway vehicles, and OHV emphasis areas. The BLM has documented significant damage to vegetation and erosion due to off highway motorized vehicles but has failed to quantify or evaluate the impact of fine sediment from these activities to salmonids. Cumulative sediment impacts are understated.

c. The DEIS analysis incorrectly assumes that increased fine sediment is the only sediment related factor adversely affecting rearing salmonids through increased turbidity and egg incubation through increased percent fines DEIS:355-357). The DEIS fails to identify streambed scour and fill as an equally important mortality factor for egg-to-fry survival of fall spawning salmonids such as coho salmon (See Nawa and Frissell 1992, Harvey and

Lisle 1998). The DEIS:356 is biased in that it states beneficial effects of scour (e.g., "[f]ine sediment can be cleaned from the stream bottom gravel by scouring during peak flows") but fails to report that these same scouring flows may scour out and kill incubating salmonid eggs. This is important because the alleged "viable" coho salmon population in Evans Creek (DEIS:357) may survive increased fines only to be extirpated by excessive logging related bedload . For example, coho salmon extirpations in Oregon (Frissell 1992, Frissell 1993) and Northern California (Brown et al. 1994) are probably more linked to excessive bedload transport (Jackson and Beschta xx) than excessive fines.

d. **The threshold for increased peak flow impacts to fish is set to high.** The DEIS:743 falsely states that '[p]eak flows would not increase in fifth field watershed under any of the alternatives to a level that would affect fish habitat because they would not cause 5-year, 24 hour flow to occur at the 2-year, 24-hour interval." First, the analysis needs to be done on much smaller watersheds where coho are known to spawn (e.g., upper West Evans Creek). Coho generally do not spawn in main stem channels of 5th field watersheds. Second, the threshold is set to high because salmon eggs are likely to be scoured when bedload begins to move (see Jackson and Beschta 198?). Increased logging and roadbuilding that causes bedload to be moved at smaller rainfall events will kill more salmon eggs. Finally, Watershed Analyses have identified peak flows from rain-on-snow as a threat in specific areas that were not analyzed (e.g.,USDI BLM 1996b:7 . identified headwaters compartment 5,440 Ac). The DEIS must explain why numerous assessments in existing BLM Watershed Analyses are wrong with respect to expected impacts from peak flows.

e. The DEIS:356 incorrectly states that "thresholds beyond which [sediment] impairment occurs in the field have not been established". Methods for assessment and thresholds for sediment have been identified in published literature by EPA Corvallis Lab (Whittier et al 2007a and Whittier et al. 2007b). I suggest the BLM contact EPA authors at Corvallis Research Lab and replace outdated literature reviews (e.g. Everest 1987) with 21st century published research results.

f. **The fine sediment delivery model (DEIS742,758,1106-1113) is not appropriate for predicting sediment related impacts to fish in a programmatic EIS.** The sediment delivery model (DEIS:1106) is designed for predicting fine sediment transported from road surfaces via overland flow from average rainfall events. The model fails to identify sediment inputs from mass erosion (debris flows, earthflows, debris slides etc.), sediment from road fill failures, and sediment from gullying, when streams are diverted down road fills due to plugged culverts. While it is possible to predict chronic erosion from road surfaces (DEIS:1106-1113) the often more devastating episodic erosion (DEIS:344) can also be estimated with empirical data from past events e.g., 1964, 1955 1996/97, and 07 floods (Weaver and Hagans 1996). Since the DEIS is looking at fish viability over a 100 year period (DEIS:724-725) and it takes nearly

that long for a forest to recover from regeneration logging, the DEIS must evaluate the consequences of episodic landsliding and elevated sediment transport in the action alternatives. Several large storm events are certain to occur on lands denuded by logging and roadbuilding. Models for mass erosion and threshold for fish impacts are "available information" as defined by NEPA. Previous BLM impact statements have provided credible mass erosion modeling (USDI,BLM 2004b;USDA/USDI 2004d) where anticipated logging and road building would overwhelm the transport capacities of streams causing significant harm to fish (obvious sediment related thresholds for fish). The DEIS sediment model would be appropriate for watershed analysis in the context of identifying restoration opportunities or additional BMPs to reduce management created sediment, but the model is clearly not adequate or appropriate for guiding programmatic decision making. I recommend that BLM begin immediately to disconnect road systems from streams to realize the sediment benefits predicted by the model (DEIS:1198).

g. The DEIS:742 falsely states that "[u]nder all four alternatives, the rate of susceptibility to shallow landsliding from timber harvesting and road construction over the next ten years would not increase." The BLM would rely on existing administrative land withdrawals of unsuitable lands for logging or [unsuitable lands] would be withdrawn when identified with a project activity. This strategy has failed miserably in the past to protect fish streams from landsliding as evidenced by recent catastrophic landsliding in southwest Washington and northwest Oregon during December 2007 floods. I incorporate by reference accompanying articles and pictorial by Seattle Times http://seattletimes.nwsource.com/html/photogalleries/localnews2004075607/5.html (accessed 12/29/07) which demonstrate the ineffectiveness and futility of BLM strategy for preventing landslides in areas scheduled to be logged with WOPR action alternatives. Many of the lands currently identified as unsuitable (DEIS 762, USDI BLM 1995b) are landslide areas within existing plantations or roads leading to them. It does little good to withdraw lands after the damage has been done. The current management on BLM lands (No Action-Northwest Forest Plan) requires a minimum 150 ft no logging buffer for all intermittent stream channels. This alone captures most of the unstable ground without doing any assessments in the field (See USDA/USDI,BLM 2004d). In addition the Northwest Forest Plan requires that all unstable or potentially unstable lands be included with riparian reserves without any administrative requirements such as required by BLM for "unsuitable lands". Automatic 150 ft protection for all intermittent stream channels and no cumbersome administrative procedures for potentially unstable lands are the major reasons the current Northwest Forest Plan (No Action) was found superior for fish viability as compared to piecemeal riparian protection in WOPR action alternatives (USDA/USDI BLM 1994b).

h. **The DEIS provides biased treatment of debris flows.** The DEIS models debris flows to provide beneficial large wood to streams (DEIS:732,1089) but then claims shallow landsliding harmful to fish will not occur in logged areas due to administrative withdrawals of unsuitable lands. In addition, the intermittent stream channels with the highest probability of debris flows to fish bearing stream channels (DEIS:732) are not protected with 100 ft no cut buffers. TheDEIS:80 footnote 4 states that "[o]nly stream channels that are below unstable headwalls (as identified by the timber production capability classification (TPPC) codes indicating significant instability (i.e. FGNW, FPNW, and FGR2) that would periodically deliver large wood to fish-bearing streams. Intermittent streams that would not deliver large wood to fish-bearing streams because of geomorphic conditions (such as stream junction angle and low stream gradient) or roads would not be included." Thus the DEIS provides a criteria (wood delivery) and standard (buffer only below admin withdrawals) for inevitable sediment impacts to fish. If the channel will not provide wood to fish it is not protected with meaningful 100 ft no cut buffers and is at the same time at high risk for contributing huge amounts of fish killing sediment as evidenced by photos from Seattle Times and numerous case studies (Frisell 1992, FEMAT V-19).

i. **Earthflows**. The DEIS: 426 describes slumps and earthflows as occurring on BLM lands in western Oregon "in deep, saturated soils that are high in silt or clay on gentle to moderate slopes. Soils derived from volcanic and deeply weathered sedimentary materials are subject to this mass movement process." The environmental consequences DEIS:797 identifies various types of mass soil movement but does not specifically identify earthflows. Only "high" risk areas are withdrawn from timber management and the BLM admits that "areas that are judged to be of lower risk have occasionally failed in the past." (emphasis added) The Northwest Forest Plan ROD p. B-24 describes how earthflows need to be identified in watershed analysis and incorporated into riparian reserves and specifically states that earthflows would be protected from logging as part of riparian reserves (ROD C-31). Analysis for action alternatives in the WOPR provide no discussion of how earthflows would be identified or managed. Earthflows are a second type of mass movement quite different from debris flows. Once activated, the earthflow can deliver sediment directly to stream channels for years if not decades. Chronic sediment from earthflows is particularly damaging to fish and fish habitat. The DEIS fails to adequately describe or quantify impacts to fish and fish habitat from earthflows. "Occasional failures" identified in the DEIS could be catastrophic for specific populations of coho salmon. The anticipated BLM assertion that earthflows would be discovered during project implementation, the same as other unstable lands (DEIS:797 and elsewhere), is not likely to be effective because identification of earthflows often requires landscape analysis and expertise not generally available for typical timber sale projects. Earthflows may cover many

hundreds of acres requiring land allocation decision-making at higher levels than timber sale projects, hence, the need for watershed analyses in the Northwest Forest Plan. The IMST 1999 found that a site-specific approach for regulations (similar to WOPR action alternatives) is not sufficient to accomplish recovery of wild salmonids.

j. **Numerous Watershed Analyses produced by BLM and the US Forest Service since 1995 were not used to describe current watershed conditions (DEIS Chapter 3) or used to develop meaningful sediment impact analyses relevant to fish habitat and fish viability (DEIS Chapter 4).** I wish to incorporate by reference all ACS Watershed Analyses including but not limited to those available at BLM websites below:
http://www.blm.gov/or/districts/medford/plans/inventas.php
http://www.blm.gov/or/districts/roseburg/plans/inventas.php
http://www.blm.gov/or/districts/salem/plans/inventas.php
http://www.blm.gov/or/districts/lakeview/plans/inventas.php (sites accessed 12/29/07) The DEIS:356 falsely states that "some aquatic systems may function with high background levels of fine sediment. For example, in Evans Creek, a tributary to the Rogue River, a viable salmonid population exists even though the stream has a high sediment load." Watershed Analyses by BLM and the 1995 RMP appear to contradict this assertion. The West Fork Evans Creek Watershed Analysis (USDI,BLM 1995b:7) found that "[e]xcessive amounts of sediments and sands (granitcs) are filling pools and glides (reduces cover and spawning habitat for coho and Chinook). Granitic sands reduce aquatic insect population and simplify habitat complexity. Pool frequency ranged from 20% to 43% (threshold is 50% level). Channel substrate is heavily embedded and provides minimal cover for small fish and reduces aquatic insect populations." The West Fork Evans Creek Watershed Analysis 8) further states on p.28 that " [l]arge depositions of granitic sediments both within and downstream of the West Fork of Evan Creek adversely effect the quality of the fish habit." and on p. 42 states that [t]imber harvest and road construction has had a major influence on soil erosion and subsequent sedimentation of streams. As a result, the fisheries habitat ahs been degraded and is in need of restoration." The "downstream" sediment impacts are important because the DEIS sediment analyses failed to describe likely adverse sediment impacts to "high potential" stream segments on non-BLM lands located downstream of action alternative logging. The current Medford District RMP (Appendices 195) deferred timber harvest in portions of the West Evans Creek watershed for ten years beginning in 1993 because of a "high potential for water quality degradation due to increased sediment resulting from past management activities. The DEQ 1988 Oregon Statewide Assessments of Nonpoint Sources of Water Pollution rates West Evans Creek as having moderate stream problems due to turbidity and sediment" (USDI, BLM 1994e, Appendices p. 175). The data from various BLM and state watershed

analyses support the conclusion that the viability of coho in West Evans watershed is at risk of extirpation because of logging related sediment and that risk will be increased significantly with the WOPR action alternatives. The WOPR DEIS fails to provide analyses as to the expected viability of coho salmon in West Evans Creek or elsewhere where it is federally listed.

k. **Suction Dredge mining disturbance is known to cause increased mortality to fall spawning salmonids such as coho salmon.** The DEIS:1438 Table 290 identifies 50 instream suction dredging notices. New information indicates this activity is harmful to spawning success of fall spawning salmonids such as coho salmon (Harvey and Lisle 1998, USDA Siskiyou National Forest 2001). Impact analysis for fish must also consider cumulative impacts of streambed disturbance by suction dredging at an estimated 50 locations in the Medford district. Decreased egg-to-fry survival is likely regardless of size of suction dredge.

D. **The BLM is biased in its use of riparian stream survey data. The DEIS failed to use the BLM inventory of riparian stream channels in assessing current condition/trend and failed to use the data in assessing long term condition/trend with action alternatives, however, <u>the BLM selectively used one measured parameter of the inventory data to boost the ASQ (DEIS:566).</u>** The East Evans Watershed Analysis (USDI, BLM 1996d) on p. 27 states that "[r]iparian stream surveys were undertaken on East Evans Creek WAU [Watershed Analysis Unit] from October through December 1995 on all BLM lands except for four sections. <u>The objectives are to evaluate the current riparian condition, collect baseline data for long term trend assessment, verify GIS hydrologic data and utilize the information collected for watershed analysis and management actions</u>." (<u>emphasis added</u>) The BLM has illegally limited the use of riparian stream survey data in NEPA analysis by only using "verified GIS hydrologic data" to support the increased ASQ for the No Action Alternative (DEIS:566). All riparian stream survey data are available as per NEPA. I strongly suggest that the BLM compile these data by appropriate watershed scales into functional condition classes for Chapter 3 Water. For example the East Evans Watershed Analysis p. 27-28 reports "no reaches classified as "Nonfunctioning Condition"...There are 17.2 (57% miles of streams in "Properly Functioning Condition" comprising 57 reaches, and 12.9 (43%) miles of stream in "Functioning at Risk" comprising 47 reaches." Analyses based on compilations of these classification data from watershed analyses would show that current Northwest Forest Plan (No Action) would improve the condition class of these mostly intermittent streams. WOPR action alternatives would put more stream miles in the undesirable "Functioning at Risk" category. Analysis of this criterion (riparian function) with the BLM's own field data would clearly show the ecological differences among alternatives.

E. **The DEIS failed to describe BLM scientists' support for current riparian reserve widths in numerous watershed analyses. The DEIS fails to use**

BLM's data and analyses from their own scientists to make scientifically valid comparisons between the No Action alternative (Northwest Forest Plan) and action alternatives (with greatly reduced riparian protection).

a. While watershed analyses are not decision documents per se they are intended to be used in NEPA analysis to guide decision making.

b. The East Evans Watershed Analysis p.31 states that "[c]urrently, no specific riparian reserves have been identified for widening or narrowing based upon biological or physical features." Watershed Analyses are either moot on this issue or show scientific support for current reserve widths, none recommend reducing widths as is proposed in WOPR action alternatives.

F. **The DEIS failed to provide adequate cumulative effects watershed analyses to demonstrate that areas previously deferred from timber harvest now warrant intensive regeneration harvests in WOPR action alternatives.** In 1994 the BLM deferred harvest in 16 subwatersheds (including portions of upper Evans Creek) due to high cumulative effects (USDI BLM 1994e Appendix U). The Medford RMP (USDI BLM 1994g:42) stated that the areas deferred will be reevaluated during the next planning cycle or by January 2003. The WOPR DEIS does not provide cumulative effects analysis that would demonstrate that conditions have improved to warrant renewed timber harvest as proposed in the WOPR action alternatives. The Peak Flow analysis misuses research results by Gordon Grant. The threshold for increases is percent in open category, not basal area (DEIS: 1096). Grant (2007) suggested the threshold was at 30%. Rain-on-snow modeling in WOPR does not agree with results using different techniques in NEPA documents and watershed analyses. Sensitivity testing is needed on watersheds that were known to be damaged from recent 96/97 rain-on-snow events (e.g. Fish Creek near Salem District, Sucker Creek in Medford District). Would the WOPR model predict damage to these watersheds? The analysis did not look at >5 year event which are certain to occur (see effects to SW Washington/ Veneta OR from December 07 rain only storm).

G. **The WOPR DEIS failed to adequately analyze the adverse impacts of not managing for optimum coarse wood levels in intermittent streams. The DEIS falsely implies (with analysis restricted to fish) that large wood is only important if it can be transported to fish bearing streams.** Wood is extremely important to all stream channels regardless of presence or absence of fish because of potential for undesirable incision and accelerated erosion without large wood (See FEMAT V13,14). The analysis of Coarse Woody Debris in USDI, BLM 1994e: p.4- 47,48 and USDA/USDI 1994b 3&4 61 provide a credible scientific analysis which clearly shows the ecological differences between alternatives with no protection or minimal protection for intermittent streams (WOPR action alternatives) and no cut 150 ft minimum protection for all intermittent streams (NW Forest Plan /WOPR No Action). For example USDI,BLM 1994e states on p.4-48 that "[in alternatives most similar to WOPR action alternatives] long term recruitment of CWD [coarse woody

debris] would be greatly diminished in first and second order intermittent streams. Adverse effects on these streams would include decreased channel stability, increased stream gradients, velocities, and channel erosion, reduced sediment trapping capability and increased movement of sediment downstream." Conversely, "the PRMP [NW Forest Plan] would provide 100 percent of the optimal amount of long term CWD to first and second order intermittent streams, which is substantially greater than other alternatives."

H. **The DEIS fails to disclose the risk to stream temperature from debris flows that destroy shade trees and scour stream channels to bedrock. Blow down is likely for narrow buffers, especially near the coast (Coos Bay District)** Increased regeneration logging and increased road building will increase debris flows as has occurred previously during episodic flood events (Weaver and Hagans 1996). The DEIS:343,763,797 fails to describe the consequences of debris flows in perennial stream channels. Nawa et al. 1992:21-29 measured nearly a 10 degree C increase in maximum stream temperatures in a 3rd order perennial channel scoured to bedrock from a debris flow originating in an 8 year old clearcut. The width of the disturbance (5m-20 m) destroyed most of the shade from the fir/alder buffer along the 3.5 m wide perennial stream. Direct sunlight on a bedrock channel exacerbated temperature increases. Debris flows from the 1997 flood caused about a 5 degree C temperature increase to two small tributaries to the Left Fork Sucker Creek because shade trees were destroyed (unpublished data R. Nawa). The West Fork Evans Creek watershed analysis identifies elevated temperatures and stream channels scoured to bedrock. The DEIS failed to disclose that blow down is likely to damage the minimum buffers prescribed (as compared to robust buffers in No Action). Because the new buffer widths are minimums, any losses of standing trees will cause temperature increases. During December 2007, 100 mph winds flattened some forests within ten miles of the Oregon coast. Greater than expected temperature increases are likely in the Coos Bay District due to blow down of proposed minimum buffers, especially areas adjacent Coquille Forest (DEIS 756). Merely providing alleged adequate shade (DEIS:754) does not mean the shade will be effective over the next 100 years due to increased risk of debris flows and increased risk of blow down with the action alternatives.

I. **The DEIS fails to disclose impacts to deciduous oaks due to fire suppression and encroachment of Douglas-fir. Encroaching Douglas-fir (due to fire suppression during past 40-80 years) is shading out and killing both white oaks and black oaks primarily in the Medford and Roseburg Districts.** The loss of old growth deciduous oaks (>200 years old) is significant as these trees are now present mostly as snags and down wood in mature stands of nearly pure Douglas-fir. Encroachment into white oak stands is at the edges of stands but the results are the same: dead and dying oaks due to shading by Douglas-fir. This is important because the deciduous oak component of pine/oak woodlands and mixed evergreen forests is disproportionately important to a myriad of wildlife species, especially neo-tropical migrant birds, cavity users, and mast foragers. The Vegetation and Wildlife sections need to address this important but vanishing component of the low elevation forest. Management must direct

thinning projects at encroaching of Douglas-fir most of which are under 80years old. Large openings are needed around black oaks to ensure high mast production.

J. **The DEIS fails to estimate decreased tons of carbon sequestration and increased tons of atmospheric carbon from various amounts of logging.** Ironically, the previous BLM RMP/FEIS (USDI BLM 1994e:4-7, 8) in 1994 provided an analysis on this issue but the WOPR DEIS (13 years later) provides no meaningful analysis, only excuses and disclaimers (DEIS:491). During the October 2007 Technical Work session in Medford the BLM claimed that decreased carbon sequestration cannot be calculated for alternatives because the fate of the wood harvested is unknown, however, in 1994 the BLM stated that about 42% of the timber harvested in the northwestern U.S. enters long term storage in products, while paper production largely results in the loss of carbon dioxide to the atmosphere (USDI,BLM 1994e:4-7). People are intensely interested in how forests are managed to sequester carbon. Carbon sequestration is a major hope for the future moderation of climate change. It is unconscionable for the BLM to destroy significant (i.e. measurable) carbon storage on public lands with logging and then deceive the public by not disclosing impacts to carbon sequestration. Given the world wide attention to global climate change and known links to carbon sequestration, one would expect more information on this issue with programmatic impact analysis, not less.

3. The DEIS action alternatives would violate the Clean Water Act.

A.Water quality management plans for 303(d) listed streams on BLM (DEIS:365) would no longer be valid because the criteria and standards from the ACS would no longer apply to BLM lands with the WOPR action alternatives. For example, the Sucker Creek Water Quality management Plan was approved by EPA because the BLM agreed to follow the Northwest Forest Plan. The temperature TMDL for the Willamette Basin would be violated. EPA is not likely to approve the new riparian standards in the action alternatives unless major changes are made. Broadcast burning adjacent intermittent streams would violate the Clean Water Act by creating chronic sediment sources. Similar violations of anti-degradation policy would apply to all BLM 303(d) listed streams.

B. Stream temperatures would increase beyond predictions of models because some streams flowing after June 1 or after July 1 would be logged over as "intermittent" and cause thermal warming to downstream waterbodies. In other words, BLM lacks the data to identify precisely where a stream transitions from "perennial" to "intermittent". The definitions for perennial and intermittent (DEIS:364 footnotes a, b) would not preclude logging of streams flowing on July 1 because they could fall under the definition for intermittent. Verification of intermittent or perennial classifications would not be practical for most specific stream segments within upland timber sale units. Misclassifications of actual "perennial" streams as "intermittent" will cause stream warming for decades.

4. Recommendations common to all Alternatives and No Action.

A. **OHV Emphasis Areas**. Please eliminate all references to OHV areas including maps. Maps are particularly dangerous because they invite increased use regardless of decisions made. The checkerboard land pattern is inherently unsuitable for OHV management due to concerns by adjacent private landowners. Increased erosion from OHV use is not acceptable in watersheds with ESA listed fish species and fragile soils (e.g. Elderberry Flats and others).

B. **Please provide management direction for deciduous oaks.** Currently these species are lumped with "hardwoods" in the vegetation section. Deciduous oaks are much different than broadleaf evergreen trees (e.g. tanoak) because deciduous oaks are shade intolerant and relatively low growing (as compared to conifers). Deciduous oaks are easily shaded out by the faster growing and taller Douglas-fir.

a.**White Oak**. Historic stands of white oak/black oak/pine need to be mapped more accurately and with more decision than OI inventory. Encroaching conifers, particularly Douglas-fir, must be eradicated from these areas because they quickly shade out and kill the centuries old deciduous oaks.

b.Black Oak. Thinning and density management projects must give preference for older black oaks by thinning heavily around the largest remaining black oaks to ensure their survival as well as increase mast production. Fuels treatment along roads would remove competing firs to favor the larger deciduous oaks (see below).

C. **Fuels Management in Klamath Siskiyou.**

The first priority of fuels management would be forest edges along roads and where BLM borders small tax lots with dwellings. Second priority would be plantations. Roadside treatments would eliminate the need to pile and burn and allow chipping (Trees- Are-Us routinely chip small trees and shrubs under power lines). The interiors of natural stands would be the last priority for fuels treatments. The Deer Willy project primarily in the upper Williams Creek watershed in the Medford District is a good example of emphasis on roadside fuels. Management of broad leaved trees (aka hardwoods) for wildlife must be integrated into fuels management along roads with the removal of encroaching Douglas-fir (<20"dbh) and shrubs while preserving the larger hardwood trees (e.g. black oak, madrone, white oak) and some pines. These sun loving broad leaved trees and pines will thrive on the edges of forests bordering roads if encroaching Douglas-fir and shrubs are eradicated for the first 50-100 ft from the road. The desired condition would be pine/oak woodlands bordering roads that would be relatively fire resistant (low fuel loading on ground). The pine/oak woodland strip along roads would provide superlative wildlife habitat due to increased production of madrone berries and acorns. Easy access for fire suppression would be assured by removing the most combustible fuels along roads.

D. Best Management Practices (DEIS 1132-1183) must explain how these are changes from existing BMPs, otherwise its impossible to know if the new BMP is more restrictive in preventing resource damage or allows more discretion. Previously each District had its own set of BMPs which seems appropriate, why change to uniform but confusing state-wide BMPS. If current BMPs work, why change them? Unattainable and impractical BMPs for roads (DEIS:1135 first 3 BMPs) to attain desired sediment modeling result (DEIS 1109) is not practical. BLM needs to be truthful about new roads and expected sediment based on previous road building.

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*abstract or ** full publication attached