

DECISION RATIONALE
for the Muddy Tom Timber Sale
(Reference: Topsy/Pokegama/Hamaker Forest Health Treatments
Environmental Assessment #OR014-98-01)

The Muddy Tom Timber Sale is analyzed in the Topsy / Pokegama / Hamaker Forest Health Treatment (Environmental Assessment #OR014-98-01), which provides for a separate Decision Rationale to be prepared at the time each sale is proposed. This Decision Rationale applies only to the Muddy Tom Timber Sale (the second sale proposed under this EA), which is scheduled to be sold June 9, 2000. A separate Decision Rationale for each proposed timber sale under the Topsy / Pokegama / Hamaker Forest Health Treatment Environmental Assessment is written to incorporate new information about the site specific area. This new information includes updated management guidelines and pretreatment survey information for Threatened and Endangered species, Survey and Manage species, and Protection Buffer species addressed in the Klamath Falls Resource Management Plan (RMP) and the Northwest Forest Plan (NFP). New information may also include results of annual implementation monitoring of timber sales and recommended changes to design features as part of an adaptive management strategy.

New Information

Threatened and Endangered Species

Survey Protocol - The sale area has been monitored since 1991 to determine breeding status of local owls.

Survey Results - There has been an active northern spotted owl site within the proposed sale area since 1991 (Hayden Creek owls). The adults at this site nested and produced young 7 of the 9 years. During monitoring of known northern spotted owl breeding sites and great gray owl surveys in 1997, a new pair of spotted owls (Edge Creek owls) were located. The pair was present in 1998 and 1999 as well. The nesting status of the pair in 1997 and 1998 was uncertain although believed to be non-nesting. In 1999, the pair was confirmed to be "non-nesting" according to protocol standards. The pair was located in 2000 and monitoring indicates that they are nesting outside the 100 acre deferred area and within the matrix cutting area.

Management Recommendations - Neither the Northwest Forest Plan or the Klamath Falls RMP specifies management recommendations for "new" owl sites (sites located after January 1, 1994). The Klamath Falls RMP does state on Page 38; "Fall no trees within 1/4 mile of all active northern spotted owl nest sites from approximately March 1 to September 30 to avoid disturbance and harm to young owls." Through yearly monitoring and the consultation process, the seasonal restriction has been changed to March 1 - August 10. All young in the KFRA have fledged by late July and this date gives adequate protection.

Management To Be Implemented - To mitigate impacts to the new pair of northern spotted owls, a one hundred (100) acre core area around the location of the historic sightings will be deferred from harvesting. If the Edge Creek owls nest outside this 100 acre core area and within the matrix cutting area, mitigating measures will be taken to preserve the integrity of the nest tree site with a small 1-3 acre no-treatment buffer around the nest tree. In addition, if nesting does occur within the cutting area through the life of the timber sale contract, the above seasonal restrictions will be implemented.

Rationale - These measures meet or exceed the pertinent RMP and NFP northern spotted owl protection requirements and mitigate impacts in the immediate vicinity of "new" and known owl sites.

Survey and Manage (S&M) Species

Mollusk

Survey Protocol - Pretreatment surveys for the S&M species have been completed in accordance with Survey Protocol for Terrestrial Mollusk Species from the Northwest Forest Plan (Furnish, J. 1997). One survey visit was completed in the Fall of 1998 and one survey visit was completed in the Spring of 1999. Surveys were conducted in both the treatment and non-treatment areas including the: Matrix, District Designated Reserve Buffers (DDRBs), Riparian Reserves, meadow buffers, thermal clumps, District Designated Reserves/Unmapped Late Successional Reserves (DDR/UMLSR), and the 100 acre deferral area. The blue-gray tail-dropper (*Prophysaon coureleum*) was the only S&M mollusk located within the survey area.

Survey Results -The blue-gray tail-dropper was well distributed, although not evenly distributed, throughout the surveyed area. Approximately 200-300 sites were located during the single pass, spring and fall surveys.

Management Recommendations - The most recent Management Recommendations for this species (BLM IM No. OR-2000-015) & (Burke, Feb. 1999) recommends three different management strategies based upon the abundance and distribution of the population and the anticipated impact of the treatment. Strategy 3 is recommended where the species is locally common and the distribution and numbers of sites and habitat features suggest that they are likely to occur more or less throughout the survey area. Strategy 3 consists primarily of identifying and managing hot spots in the survey area, maintaining shade and canopy closure above 40 to 50 percent, and retaining suitable habitat components (i.e. large down woody material) used by associate fungal species.

Management To Be Implemented - The proposed treatment for the Muddy Tom Timber Sale is a partial cut where approximately 20 to 35 percent of the trees will be removed. The silvicultural objectives of the treatment include:

- retaining 50 to 70 percent of the existing canopy closure (primarily the mature dominant trees)
- maintain approximately 90 to 160 square feet of basal area per acre
- retaining existing large down woody debris to meet NFP criteria
- retaining an uneven-aged stand structure and late successional stand characteristics
- retaining some untreated areas including thermal clumps, deferral areas, riparian areas, and District Designated Reserves.
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Rationale - The above prescription meets the management recommendation for the blue-grey taildropper as well as the forest health objectives. Reserving some of the mollusk hot spot areas in thermal clumps and deferral areas was done to assure retention of concentrated populations. In addition to the untreated areas, habitat components necessary for the continuing occupancy of the blue-grey taildropper including shade and canopy closure, mature trees, and large woody debris are being retained in the matrix cutting area through the partial cut prescription.

Fungi

Survey Protocol - The sale area was surveyed in accordance with Survey Protocols for *Bondarzewia mesenterica* (= *B. montana*), *Otidea leporina*, *O. onotica*, *O. smithii*, *Polyozellus multiplex*, *Sarcosoma mexicana*, *Sowerbyella* (= *Aleuria*) *rhenana*, Version 1.2 (O'Dell 1999). The project area was evaluated for potential habitat through on-site inspections of the entire sale area during the pre-field review. All potential habitat for the target species was surveyed according to current survey protocols (O'Dell 1999) including the matrix cutting area, thermal clumps, riparian reserves, deferral areas, and meadow buffers. Multiple surveys approximately 2-3 weeks apart were conducted according to these protocols. Two surveys were completed in the fall of 1999 before snow covered the ground, and three surveys were completed in the spring of 2000. Neighboring LSR/DDR's were surveyed for fungi and other non-vascular and vascular plant species during evaluation of resource conditions within these reserves.

Survey Results - Survey and Manage Component 1 & 3 fungi species found in the survey area include *Plectania milleri* (Miller's Black Elf Cup), *Rhizopogon evadens* var. *subalpinus* (False Truffle), *Rhizopogon parksii* (False Truffle), and *Sarcosoma latakensis* (Latak Gel Cup). We are to manage all known sites of Component 1 organisms.

Otidea onotica (Rabbit Ears or Donkey Ears). This is a Protection Buffer and Component 3 species. The specimen collected was immature (without spores) and was verified as *Otidea* sp. by the Forest Science Lab in Corvallis, OR. However, macroscopically it appeared to be *O. onotica* and we should error on the conservative side and manage as such. We are to manage all known sites for Protection Buffer organisms.

Clavariadelphus ligula (Strap Coral), *Gyromitra montana* (Snowbank False Morel or Walnut), *Gyromitra esculenta* (Calf Brain or simply Brain Mushroom), *Gyromitra melaleucoides* (Pig's Ear False Morel), and *Phlogiotis helvelloides* (Apricot Jelly Fungus) are S&M Component 3 and 4 fungi species, and *Mycena lilacifolia* is a Component 3 fungus species which were found in the sale area. We are to manage high priority sites of Component 3 organisms.

Other false truffle sites (probably within the genus *Rhizopogon*), which may or may not be S&M depending on species, were located within the sale area. These specimens have been sent to the Forest Science Lab in Corvallis, Oregon for determination of the correct species.

Management Recommendations

Section C of the Standards and Guides for Northwest Forest Plan (NFP) states that all known sites must be managed for Protection Buffer and Component 1 species, and high priority sites of Component 3 species should be managed. The Standards and Guides state that general information is being acquired for Component 4 species due to lack of information concerning these species, and no management direction has been developed. Species specific management recommendations have been developed only for the Protection Buffer and Component 1 S&M fungi species (Castellano and O'Dell 1997). Representatives of Component 3 & 4 S&M fungi species were found in thermal clumps and riparian reserves, and in neighboring LSR/DDR's and DDRB's. Also, it is the professional judgement of the local resource specialists that most of the current sites of these species within the matrix area will survive the disturbance and reduced canopy closure associated with the prescribed selection harvest.

Species specific protection measures for Protection Buffer and Component 1 S&M fungus species were developed by regional specialists (Castellano and O'Dell 1997), and primarily involves protection of microsite conditions adjacent to a population. Adequate protection of the microsite may be assessed by local specialists on a site by site basis including factors such as slope, aspect, and existing thermal

protection. The idea of using the height of a site tree in a given area as the radius for a buffer has been proposed by some specialists and this would probably be adequate. Eugene District BLM has suggested 60 to 120 foot radius (0.25 to 1.0 acre) buffers as adequate protection for certain S&M fungus species, depending on site conditions.

Management To Be Implemented

No-cut buffers will be located around Protection Buffer and Component 1 species *Plectania latahense* (Latah Gel Cup), *Plectania milleri* (Miller's Black Elf Cup), *Rhizopogon evadens* var. *subalpinus* (False Truffle), *Rhizopogon parksii* (False Truffle), and *Otidea onotica* (Rabbit Ears or Donkey Ears) to preclude ground disturbance. The no-cut buffers will encompass the adjacent habitat features and associated microclimate which are thought to support these species at each site. Boundaries of the designated no-cut areas will be defined in the field using changes in habitat condition observed in the field.

For the Component 3 and Component 4 species *Clavariadelphus ligula* (Strap Coral), *Myce na lilacifolia*, *Gyromitra montana* (Snowbank False Morel or Walnut), *Gyromitra esculenta* (Calf Brain or simply Brain Mushroom), and *Gyromitra melaleuroides* (Pig's Ear False Morel), areas that will not be treated including riparian reserves, thermal clumps, no-cut buffers for Protection Buffer and Component 1 species, deferral areas, and LSR/DDR's within and adjacent to this timber sale are considered to provide adequate protection for high priority sites of these species. Further, the prescription for harvested areas within the timber sale will maintain 60% or higher canopy closure after treatment, and will thereby maintain adequate habitat conditions for the continued persistence of these species.

Only one site of the Component 3 and 4 species *Phlogiotis helvelloides* (Apricot Jelly Fungus) was found within this timber sale, which is the only population of the species found to date on the resource area. Therefore, this is considered a high priority site for this species, and a no-cut buffer to preclude ground disturbance will be designated that encompasses the adjacent habitat features and associated microclimate which are thought to support this species at this site. The boundary of the designated no-cut area will be defined in the field using changes in habitat condition observed in the field.

Other false truffle sites (probably within the genus *Rhizopogon*), which may or may not be S&M depending on species, were located within the sale area. These specimens have been sent to the Forest Science Lab in Corvallis, Oregon for determination of the correct species. Any species identified as Component 1 or Protection Buffer will be protected with a no-cut buffer. In addition, any species identified as Component 3 and occupying a high priority site will be protected with a no-cut buffer.

Rationale - Based on the available scientific literature and extensive field experience, the local specialists within the resource area consider the above measures adequate to protect the fungi which were detected during pre-disturbance surveys.

Considering the harvest prescription and the presence of these fungus species within neighboring reserves, we have determined that the long term survival of these S&M fungus species within the Muddy Tom T.S. area is highly likely without further site protection or additional thermal clumps. Soil compaction restricts fungi establishment and growth, therefore, Best Management Practices (BMP's) for reducing soil disturbance and soil compaction will be employed.

Bryophytes

Survey Protocol - *Tritomaria exsectiformis* and *Marsupella emarginata* var. *aquatica* are Component 2 liverwort species which may have potential habitat on KFRA. *Buxbaumia viridis* and *Tetraphis geniculata* are Protection Buffer moss species which also may have potential habitat on KFRA. As per the NFP,

these four species require surveys prior to ground disturbing activities. Surveys for Component 2 bryophyte species were conducted as per Survey Protocols for Survey and Manage Component 2 Bryophytes version 2.0, December 11, 1997. Survey Protocols for Protection Buffer bryophytes were recently released to field offices (December 1999). Areas which may have potential habitat for these species were delineated using aerial photo's, topographic maps, and watershed maps. On the Klamath Falls Resource Area, potential habitat for these four species is most likely to occur in and near areas with perennial moisture.

Survey Results - The bryophyte surveys revealed no liverworts, no perennial pools, and no potential habitat for the liverworts mentioned within the sale area. Although we did find various moss species, we found no potential habitat within the project area for the Protection Buffer moss species for which we were surveying. We compiled a brief, though not inclusive list of bryophyte species, which were either identified in the field or collected and later identified.

Management Recommendations - None.

Management Implemented -None.

Rationale - During surveys performed to established protocols, no Northwest Forest Plan Survey and Manage (S&M) bryophytes within the Muddy Tom T.S. or neighboring Late Successional Reserves (LSR's) and District Designated Reserve's (DDR's) were found.

Lichens

Survey Protocol - No Component 2 lichens or their potential habitat is known to occur in Klamath County. There are no Protection Buffer lichens listed in the Northwest Forest Plan. Most of the NFP S&M lichens are restricted to west of the Cascade crest.

Survey Results - Although two species of S&M Component 4 lichens are known to occur on our resource area, none were found within the project area during surveys.

Management Recommendations - None.

Management Implemented -None.

Rationale - No Northwest Forest Plan Survey and Manage (S&M) lichens within the Muddy Tom T.S. or neighboring Late Successional Reserves (LSR's) and District Designated Reserve's (DDR's) have been found to date.

Protection Buffer Species - Great Gray Owls

Survey Protocol - The sale area was surveyed in 1996, 1997, 1998, & 1999 in accordance to the survey protocol for Great Gray Owl (May 12, 1995 direction from the Regional Interagency Executive Committee Members and California Federal Executives, and BLM Informational Bulletin No. OR-97-311 which described adjustments to the original great gray owl protocol).

Survey Results - Surveys resulted in a biologist's determination of occupancy (as defined by the May 12, 1995, survey protocol) of the treatment area by great gray owls. At the time the Environmental Assessment was written for the Topsy/Pokegama/Hamaker Landscape Analysis Area (TPLA), no great gray owls had been detected in the area. Great gray owls were not detected until the third year of surveys. Additional detections were made during surveys in 1999 & 2000. Although numerous detections

have been made of great gray owls, no nest sites have been located to date.

Management Recommendations - Page C-21 of the Northwest Plan (NFP) Record of Decision (ROD) states that "Specific mitigation measures for the great gray owl, within the range of the northern spotted owl, include the following: provide a no-harvest buffer of 300 feet around meadows and natural openings and establish 1/4-mile protection zones around known nest sites". In accordance with the Northwest Forest Plan, great gray owl meadow buffers become Late Successional Reserves. The intent for establishment of these meadow buffers is to preserve potential great gray owl nesting habitat. Prior to any treatments in a Late Successional Reserve, a Late Successional Reserve Assessment (LSRA) is required under the Northwest Forest Plan. Page 58 of the Northwest Forest Plan Record of Decision states that "Amendments of forest or district plans that would modify the standards and guidelines or land use allocations established by this Record of Decision will be coordinated through the Regional Interagency Executive Committee and the Regional Ecosystem Office..."

The KFRA recommended a combination of treatments within the meadow buffers and meadows to provide for the long-term enhancement of great gray owl nesting habitat characteristics and to address forest health problems. These treatments included light understory thinning, mechanical slash reduction, and prescribed fire. As a result of the proposed treatments within the meadow buffers, the KFRA completed a Late Successional Reserve Assessment for those meadow buffers during the Spring of 1999. The Interagency Late-Successional Reserve Work Group reviewed the LSRA and approved it on August 4, 1999.

Management Implemented - Three hundred (300) foot meadow buffers were established around all suitable meadows and natural openings within the areas occupied by great gray owls. Meadow buffer habitat was then assessed based upon present suitability for great gray owls, fuel loads, and densities. A light understory thinning was prescribed for meadow buffers that were determined to be nonsuitable, overstocked, and/or would benefit from a light thinning. Approximately fifty percent (50%) of the meadow buffers were marked for thinning while the remaining meadow buffers were deferred from any type of harvest treatment.

Some of the meadow buffers contain a high concentration of precommercial thinning slash and will be treated under a separate slash reduction contract to reduce fuels loading.

Prescribe burns will be implemented following the timber sale and slash busting contracts. Separate management recommendations will be addressed for the prescribe fire treatments.

Rationale - The current condition of a portion of the forested meadow buffers in the Muddy Tom timber sale area does not meet the habitat requirements for great gray owl nesting described in the May 12, 1995, survey protocol. A portion of the buffer acreage is overstocked with small diameter trees that are generally not preferred by great gray owls. Large trees required for nest substrate and overstory canopy closure are scattered or absent in many of the stands. Where large trees are present, they are threatened by overstocking and/or the risk of stand replacement fires. Stands that have been precommercially thinned have very high fuel loads from residual slash. Stands that have not been precommercially thinned provide an arrangement of both ladder and crown fuels that increase the risk of stand replacement fires. The forest stand conditions have resulted primarily from historic timber harvest practices and fire suppression. The proposed treatments of light understory thinning, mechanical slash reduction, and prescribed fire would help mitigate the risks and susceptibility of these stands to stand replacement wildfires and insects. In addition, juniper trees are invading both the forest and the meadows, and the extent of brush within the openings is affecting the amount of suitable foraging habitat available.

The Klamath Falls RMP provides for the planning and implementation of silvicultural treatments inside

Late Successional Reserves that are needed to create, maintain, or enhance late-successional forest conditions (page 19 of the KFRA RMP ROD). Given the increased risk of fire due to the rapid accumulation of fuels in the aftermath of insect outbreaks and drought, additional management activities are allowed under the provisions of the RMP. The RMP states “silvicultural activities aimed at reducing risk shall focus on younger stands” in the LSRs. The RMP also states “while risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate...”. The forest within the meadow buffers planned for treatment is primarily second growth with scattered single large trees or patches of a few larger trees. The RMP states “the objective will be to accelerate development of late-successional conditions while making the future stand less susceptible to natural disturbances”. Light intensity underburning and thinning of the understory are activities allowed under the RMP. The silvicultural prescription planned within the great gray owl buffers is consistent with the intent of the RMP.

The LSRA describes the basis for the proposal, the desired conditions, and the prescription to attain the desired conditions. Forest health conditions are described in more detail on pages 5 & 6 of the LSRA and on pages 17-34 of the TPLA; the fire ecology is described on pages 22-24 of the TPLA; and the desired conditions for the forested meadow buffers and the management strategy for achieving these conditions are described on pages 7-10 of the LSRA. The management strategy identifies the components of the silvicultural prescription that will be used for habitat enhancement of the meadow buffers.

Monitoring of the forest stand conditions will be conducted through stand exams within the meadow buffers, and great gray owl surveys will be conducted on an annual basis to monitor occupancy and determine if nesting has occurred. The monitoring plan is described on pages 11 & 12 of the LSRA. If monitoring results indicate changes to the original great gray owl management plan are needed, they will be made. In addition, the interagency Late-Successional Reserve Work Group will be conducting a field review after the first few meadow buffers have been treated. The REO will retain the option of modifying the exemption from the NFP ROD standards and guidelines as a result of the field visit.

Other Issues Addressed in EA

Soils

Detrimental soil disturbance is an issue addressed in the EA. A number of mitigating measures are proposed in the EA to reduce the impacts to soils (page 32 of EA). For the Muddy Tom timber sale, some site specific factors should help reduce soil impacts. The first is gentle slopes. Much of the Muddy Tom sale is on slopes less than 15 percent. A second factor is that the most of the area was precommercially thinned 10 to 15 years ago. As a result, there is a layer of old precommercial thinning slash which will cushion the soil from some disturbance. In addition, only certain areas of the timber sale will require thinning of the 3"-7" material. This particular timber sale could be harvested with a rubber tired harvester/forwarder operation (Mitigation Measure 1), however, this form of harvesting leaves the limb slash in the units and results in increased fuel loading. The KFRA is continuing to monitor soil impacts of on-going operations. In addition, all operations are monitored to determine what combination of the mitigating measures described on page 32 of the EA could be used to best mitigate impacts under similar site specific conditions.

Fuels

The excessive fuel loads in the proposed Muddy Tom sale area are primarily a result of past precommercial thinning, incidental mortality, and fire suppression policies. The proposal is to treat the slash in a combination of ways. For the timber sale, all trees will be whole-tree yarded or yarded with the tops attached to reduce the amount of fuels added to the area. In addition, as separate treatments and service contracts, the slash in specified areas will be crushed with a “slash buster” and/or underburned. A slash buster is designed to break up slash concentrations to increase decomposition rates and spread out fuels in preparation for underburning. Whole tree yarding will occur on the entire timber sale area,

approximately 1900 acres. Underburning and/or slash crushing will occur on up to 1500 acres. Fire suppression maps and District fire management plans will be updated to show the new LSRs (meadow buffers).

DECISION FOR MUDDY TOM TIMBER SALE

My decision is to implement the Proposed Action Alternative (Alternative A) of the Topsy/Pokegama/Hamaker Forest Health Treatments Environmental Assessment (EA #OR-014-98-01) for the Muddy Tom Timber Sale, involving harvest of approximately 4,500 thousand board feet (MBF) over approximately 1,900 acres. The new information presented above concerning threatened and endangered species, survey and manage species, and Protection Buffer species is sufficiently addressed in the EA, the Late Successional Reserve Assessment, and this decision rationale. Impacts to northern spotted owls, great grey owls, the blue-grey tail dropper, and Component 1 and Protection Buffer fungi species have been minimized through modifications to the timber sale design including the layout and silvicultural prescription. The Muddy Tom Timber Sale treatment will be implemented using BLM timber sale procedures and is expected to occur during the next 2 to 3 years.

The Muddy Tom treatment area is within the known range of the Northern Spotted Owl and the area analyzed in the Northwest Forest Plan. The BLM began informal consultation on the Topsy / Pokegama / Hamaker Forest Health Treatment Environmental Assessment in 1999. In lieu of completing a programmatic biological assessment for entire analysis area, the lead BLM biologist decided to write a biological assessment for the Muddy Tom Timber Sale area only. The BLM, through a biological assessment, has determined that the proposed action "may affect, and "is likely to adversely affect" northern spotted owls, the T&E species in the area. The KFRA initiated formal consultation with the U.S. Fish and Wildlife Service in April of 2000 and the Service has issued a non-jeopardy biological opinion for the proposed action (May 8, 2000).

The habitat within the Muddy Tom sale area is somewhat atypical of habitat generally associated with breeding northern spotted owls and is below the thresholds thought to be sufficient for successful breeding. Nevertheless, the Hayden Creek owls have successfully produced young 7 of the last 9 years. The proposed treatment will retain from 50 to 80 percent of the existing habitat using the proposed partial cut prescription. Many of the habitat components including canopy closure, large trees, and downwood will be retained.

The decision is consistent with the goals and objectives of the:

Final Klamath Falls Resource Area Resource Management Plan (RMP) and its Record of Decision (June 1995).

Final Supplemental Environmental Impact Statement on Management Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan).

Klamath Falls Resource Area Fire Management EA (OR-014-94-09)

Klamath Falls Resource Area Integrated Weed Control Plan EA (OR-014-93-09).

Late Successional Assessment Reserve Assessment For Great Grey Owl Meadow Buffer Management, Klamath Falls Resource Area, Lakeview District, Bureau Of Land Management (April 1999)

Regional Ecosystem Office review and approval letter dated August 4, 1999.

The Topsy/Pokegama/Hamaker Forest Health Treatment EA analysis area lies within the overlap area of the Northwest Forest Plan and the Interior Columbia Basin Ecosystem Management Project. This decision was considered within the context of both of these management efforts, including the Scientific Assessments associated with ICBEMP. No additional analysis is deemed necessary at this time.

Alternative A of the EA was selected because it represents the major prescription provided by the Klamath Falls RMP. The Proposed Action (Alternative A) is consistent with findings of ICBEMP's Scientific Assessments, which identifies the need to restore forest terrestrial habitat that continues to experience forest health problems across the project area. The mechanical harvesting alternative was again chosen because it is the most efficient way to deal with the small diameter material this sale proposes to treat. Soil disturbance levels are being monitored to determine if impacts conform with those anticipated in the Klamath Falls FEIS. Two seasons of pre and post treatment stand exams of Northwest Forest Plan timber sales indicate that post-harvest stand characteristics (including canopy closure, residual large tree component, structure, and down woody material) are in compliance with the Klamath Falls RMP, Northwest Forest Plan, and the Environmental Assessment. In addition, post-harvest biological surveys are indicating that the residual stands continue to function, in some cases, as late-successional habitat. Post-harvest stand exams are also indicating that follow-up prescribe fires (underburns) are possible to further reduce fire risks.

Alternative B (harvest only salvage volume) was rejected because it does not adequately address density control needed to improve stand resiliency.

Alternative C (fuel treatments only) was rejected because it would not resolve the immediate need to address overstocking and existing fuel loads in the Muddy Tom timber sale area. The only density control under Alternative C would be through the use of prescribed fire. Most of the stands in the Muddy Tom timber sale have been precommercially thinned in the past 10 years. The existing fuel loading from the thinning is extremely high. Although prescribed fire has proven to be an effective way to reduce densities and fuel loads, prescribed fire may result in loss of entire patches/canopy, preferred species, and larger trees in areas where fuel loads and risks are high. Deferring harvest would result in continued suppression of existing trees from overstocking and loss of existing shade-intolerant species (ponderosa pine, sugar pine, and Douglas-fir). Existing conditions would not significantly improve if the areas were deferred from harvest. The impacts of future harvest would not vary substantially from those anticipated under the proposed action. Under fuel treatments only, the ongoing mortality in many existing stands may result in deteriorated stand conditions, increased fuel loads, and a corresponding increased risk of stand-replacing wildfires. Alternative C provides no economic benefit to communities associated with harvesting and processing forest products.

Alternative D (no mechanized harvester allowed) was considered as an alternative that would lower the soil disturbance levels. All cutting would be done by hand and then winched to the skid trail with cables. Soil disturbance levels could likely be reduced by 10 to 15 percent. From an operational point of view, this Alternative would be very costly in some of the denser, smaller diameter stands and possibly unfeasible in stands where the 3"-7" material is to be thinned concurrently because of the number of stems that would have to be handled. Most of the Muddy Tom timber sale is less than 15 percent slopes, which are less subject to displacement than steeper ground. In addition, there is a significant amount of old residual precommercial thinning slash which should reduce some impact from the equipment.

CONCLUSION

I have determined that neither a supplement to the Environmental Assessment (EA) nor a change to the Finding of No Significant Impact (FONSI) for the Muddy Tom Timber Sale is necessary for these reasons:

The existing EA for the Muddy Tom Timber Sale fully covers the project as modified by the proposed mitigation and adjustments. There will be no substantial changes to the action as proposed in the EA. The action as amended is within the scope of the alternatives identified in the EA, and the environmental impacts are within those analyzed in the EA and less than those anticipated for the preferred alternative in that assessment.

There are no significant new circumstances or facts relevant to environmental concerns and bearing on the modification to the proposed action or its impacts which were not addressed in the EA. The EA anticipated protecting Survey and Manage species in accordance with the Record of Decision for the Northwest Forest Plan and the KFRA RMP. The surveys conducted for this sale satisfy the survey requirements for this sale as amended by the Plan Maintenance Documentation: Decision to Delay the Effective Date for Surveying 7 "Survey and Manage" and Protection Buffer Species, which was approved March 13, 2000, and fulfills the Survey and Manage Commitment identified in the EA.

___/s./ Melvin D. Crockett_____
for Teresa A. Raml
Manager, Klamath Falls Resource Area

___ May 8, 2000___
Date