

Mount Emily Recreation Area

UNION COUNTY OREGON

Forest Stewardship Plan

2012

INTRODUCTION

This forest management plan for the newly acquired Mount Emily Recreation Area (MERA) is intended as a guide for the Union County Board of Commissioners. MERA's 3,500± acres and a portion of the merchantable trees were obtained by various grants without county money being used. The objective of the plan is to identify present conditions of the various stands. Most of MERA has been harvested over the past 5 years by Forest Capital as part of the purchase agreement. It points to the needs for continued management. The Commissioners accepted MERA on the condition that they would continue to manage the property for timber and grazing production, as well as for recreation.

An important part of owning forested property is to manage and maintain not only the resources but also the infrastructure. Improving and maintaining forest health is important for all of the resource uses planned for this property. The plan has been prepared by the Blue Mountain Chapter of the Oregon Society of American Foresters. This plan identifies stands of trees to address in terms of approximate area, species mix, general stocking level, volumes in thousands of board feet (MBF), insect and disease presence and overall tree health. Potential harvest times and methods in keeping with the objectives of the commissioners are identified. Forest management for future commercial harvest, pre-commercial thinning, tree planting and fuels reduction are also identified. This plan should be a starting point to bring together a comprehensive plan that includes other resources such as: fish and wildlife, grazing, recreation, fire plans, transportation systems, threatened and endangered species, archeology and the like.

The focus of the SAF Chapter's Plan will be on growth and harvest of trees. The county will develop separate more in-depth management plans for grazing, roads, fish and wildlife and cultural resources among others.

LOCATION

The Mount Emily Recreation Area (MERA) is located on the slope of Mt. Emily. It was obtained to provide recreational opportunities and has been divided into motorized and non-motorized areas. The nearest trailhead for motorized OHV use is within 2 miles north of La Grande. The nearest trailhead for non-motorized use is about 3 miles north of La Grande. MERA consists of 3,450.88 acres, most of which is forested. The area is contiguous and includes two privately held 40-acre parcels.

LANDOWNER OBJECTIVES

- Maintain and improve a high quality recreational experience.
- Improve forest health and productivity over the long term.
- Maintain and enhance wildlife habitat on the property.
- Maintain and enhance the productivity of the soils on the property.
- Maintain and enhance water quality on the property.
- Manage forest stands for sustained future revenue.
- Improve and maintain the forage resource into the future for grazing cattle.
- Maintain roads for future management activities.
- Reduce the potential damaging effects of wildland fire using fuels reduction measures.
- Operate within requirements of the Oregon Forest Practices Act.

HOW TO USE THIS PLAN

The plan is intended to be used as a guide for the county to use in reaching the desired level of forest management intensity and tree stocking on MERA to meet the above objectives. It also provides limited information to manage the range, wildlife and soils to achieve the same objectives. The plan will describe various forest conditions, but specific actions on the ground will need to be planned with more detailed information collected at the time of the action. The forest is dynamic and conditions can change rapidly due to wind, fire, available funding and other actions. The plan should be reviewed and/or updated every 5± years as forest conditions can change rapidly with changes in weather patterns, insect or disease conditions.

The approximate property boundary is drawn in red on the maps. The property has both forest and range land. Most of the forage is produced in forested areas. The land has been classified into stands. Stands are relatively homogeneous areas of similar forest conditions. Stand boundaries are often related to soils boundaries and to species mix of trees. The stands (forest types) are drawn in yellow and numbered on the Forest Type Map. The section entitled “Stand Descriptions/ Recommendations” includes for each type:

- the acreage of that type
- an ocular estimate of volumes in MBF, if any
- a description of insects or disease present above endemic levels
- a potential time frame for harvest
- a summary of management recommendations
- management priorities

The appendices contain reference material and more detailed descriptions of some of the information contained in the plan. In addition, it contains general background information on several forestry related subjects.

LEGAL DESCRIPTION

The legal description is as follows:

Tax Lots 500 and 800 in Township 2 South Range 37 East.
Tax Lots 1200 and 1203 in Township 2 South Range 38 East

located in Union County, Oregon.

PHYSICAL DESCRIPTION

MERA is located on the mountainous terrain of Mt. Emily. The elevation ranges from about 3,000 feet above sea level on the east side to over 5,600 feet in the north end. It measures about 4 miles north to south and about 3 miles east to west. The slopes range from gentle to very steep. Some of the rock outcrops are almost vertical. About ½ the area is on an easterly slope east of the “break” of Mt. Emily. The rest is on west-southwesterly slopes. It is part of the Grande Ronde River watershed with scenic and aesthetic values from within and without. With very small exceptions, all of the forests have been harvested at various times for over 50 years.

The average annual climate in the area of this property follows. Depending on elevation and topography, annual precipitation can vary from 14 to 30 inches. Average annual temperatures will range from 40 to 46°F and frost-free days will be from 60 to 100.

Most of the area is forested. Natural resources in MERA have been managed for over 100 years. Timber harvesting has occurred on most of the area several times including this past year, and some of the gentler sloped area in the southeast corner has been farmed. Grazing has taken place on most of it. Forest Capital is presently completing the harvest on most of the area under an agreement made when the MERA property was obtained. The farmed areas were reforested over 30 years ago. There are several springs on or flowing through MERA.

SOILS

The soils map in the Appendix has corresponding numbers and locations of the soil types. Soil types are outlined in yellow. Listed are soil types and numbers found on the property according to the *Soil Survey of Union County* by the US Soil Conservation Service (now Natural Resources Conservation Service) soils map.

- 6F - Anatone-Klicker complex, 40-65% slopes
- 11C – Cowsley silt loam, 2-12% slopes*
- 13C – Emily silt loam, 2-12% slopes*
- 14C- Emily cobbly silt loam, 2-12% slopes*
- 17E – Gwinley very cobbly silt loam, 2 – 40% slopes
- 18F – Gwinley –Rockly complex, 40-70% slopes
- 19E – Hall Ranch stony loam, 2-35% slopes*

- 19F – Hall Ranch stony loam, 35-65% north slopes*
- 33E – Klicker stony silt loam, 2-40% slopes*
- 35E – Klicker-Anatone complex, 5-40% slopes*
- 40C – Lookingglass very stony silt loam, 2-20% slopes*
- 44C – Olot Stony silt loam, 12-35% slopes*
- 55D – Rockly extremely stony loam, 2-20% slopes
- 58E – Starkey very stony silt loam, 2 – 35% slopes
- 59E – Tolo silt loam – 12-35% slopes*
- 61E- Ukiah-Starkey complex, 5-40% slopes
- 70B – Wilkens silt loam, 1-5% slopes
- 72C – Wolot silt loam, 2-12% slopes

*-denotes forest soils

An understanding of the soils is important for basic management of forest resources. The soils maps have broad soil classifications, and cannot be expected to pick up some of the smaller soil inclusions. These inclusions can be identified on the ground fairly readily by a trained observer. Detailed information on each of the soil types can be found from the Natural Resources Conservation Service. Soils information can be found online at <http://soils.usda.gov/survey/>.

Soil productivity can be maintained if soils are not impacted or displaced by events such as compaction or erosion. Man made impacts can be minimized if roads and skid roads are grass seeded and drained properly following any harvest activity. Erosion problems may be caused if native surface roads are traveled during periods of high soil moisture. Travel during very dry weather may cause “dust out” ruts. Often a shovel is all that is needed to correct small drainage problems before they get large on roads and bike, horse and walking trails if attention is paid to surface conditions. Fixing a drainage problem immediately is often very easy. Even if only temporary it may save a lot of damage from occurring. Selecting appropriate logging systems and time of year for harvest will assure only minor and temporary soils management problems from the harvest activity. Many of the soils are shallow and should not be traveled on during the spring when they are saturated. There is a lot of clay in the grassland soils, and it will compact easily.

Management Recommendation

The productivity of all the forest resources is dependent on the basic resource, the soils. Care should always be used in grazing or harvesting timber so that soil productivity is not impaired. Some general rules for achieving this objective follow. Try to avoid compacting soils with high ground pressure equipment or animals. Compaction generally takes place only under certain soil moisture conditions. If the soils are saturated, or wet enough to rut easily they will probably compact. Compacting reduces the amount of air in the soil, and this limits the amount of growth that can be achieved as well as the ability of roots to permeate the soil. Compaction does not allow water to infiltrate the soil, and the water then needs to run off. That causes erosion besides reducing the water holding capacity of the soil needed for plant growth.

Wet soils compact much more readily than do dry soils. Frozen soil generally suffers little or no compaction. A number of trips over dry soils may eventually result in soil compaction in some cases, but compaction occurs slowly and can often be reversed through frost action, root penetration and organisms in the soil. Mechanized operations should minimize the number of trips or passes over a given piece of ground. Another technique is to minimize the amount of ground where heavy equipment is operated. If possible confine heavy equipment to old road or skid trail surfaces where compaction may have already occurred. Avoid compacting productive ground, or dedicate areas to skid trails so the remaining growing sites may continue to produce forest amenities at peak capacity.

Soil stabilization following management activities may be accomplished by several methods. Harvesting timber seldom causes sedimentation. Improperly drained roads, trails and highly disturbed skid trails may cause sedimentation. Water barring roads and skid trails reduces the amount and velocity of water flowing down exposed soils. Water bars need not impede the passage of traffic. "Utah" dips work well on grades less than 8%. Seeding cereal grains or an annual rye and forbs (clovers, etc.) and perennial grasses can reduce the velocity of water flowing over the ground. Plants anchor soil particles so that they are not easily dislodged, and the roots increase aeration of the soils that allows for more rapid infiltration of water thereby reducing runoff. Cereal grains and annual rye grass planted in the fall provide quick cover for the critical first year, while other grasses and forbs provide longer-term benefits. If erosion potential is low to moderate seeding species palatable to livestock, big game and game birds could provide benefits to them along with erosion control.

Due to the extent of open road and trails experiencing year-round use on MERA, a travel maintenance plan is imperative. Soil erosion is evident on many trails. As a result, every effort should be made to curb this trend and incorporate better drainage features into all travel surfaces. Additionally, a rigid maintenance plan must be implemented to significantly reduce erosion from present levels.

Soils management is also important for livestock grazing. The same principles apply. There is substantially more ground pressure applied from livestock's hooves than from most modern large logging equipment. If cows or elk graze in wet meadows they will compact the soil severely limiting forage potential.

- **Avoid compacting soils**
- **Wet soils compact more readily than dry soils**
- **Proper drainage of roads & trails is important**
- **Dry soils can erode by "dusting"**
- **Vegetation reduces erosion**

WATER RESOURCE QUALITY AND FISHERY HABITAT MANAGEMENT

A healthy watershed has always been at the top of a good resource management list. Healthy watersheds mean healthy forests and rangeland and that translates to cool clean water. Cool clean water is essential for wildlife of all sorts as well as for livestock. Streamside vegetation can

also provide insects for fish, and the leaf litter provides nutrients to the stream system. Streams and ponds are very important to recreational settings, especially for hikers, birders and botanists. A more comprehensive fish and wildlife plan will be developed at a later date.

The entire bottomland along streams and springs may be considered riparian. The entire length of streams and springs has the potential to provide for willows or other native hardwood species. Trees and shrubs provide shade to keep streams cooler.

There are no known fisheries issues on the MERA property with the exception of keeping water clean and flowing. That includes keeping good vegetation cover along the streams.

Healthy upland vegetation is also important for conserving a watershed. The lowland streams ultimately get their water from the uplands. The timbered areas and areas along the streams tend to have deeper more productive soils. All kinds of vegetation including trees, shrubs, grasses and forbs should be kept at healthy levels to protect watershed values.

Total tree cover is not the best forest condition to recharge the soil with water. Snow and rain is intercepted by heavy vegetation cover and then released back to the atmosphere before it ever reaches the ground through a process appropriately termed moisture interception. Both an astute commercial thinning and precommercial thinning of trees can help the ground to receive more water and be more beneficial to their subsequent growth. Enough ground cover needs to be retained so that water is not lost to evaporation by sun and wind. Good grass cover provides more than good forage for cattle. A good cover of grass in appropriate areas benefits a watershed. It softens the fall of rain, and the roots keep the ground porous so that water can soak into the profile. Unprotected soil may be impacted by raindrops causing rainwater and snowmelt to run off instead of being absorbed into the ground, thus causing further erosion.

Water resources are limited on MERA. There is at least one year around (perennial) stream on MERA, and Conley Creek flows intermittently on MERA. There are several springs, one pond and potentials for spring development.

Another key to good watershed management is maintaining roads and trails. A little maintenance all the time and everywhere will keep erosion to a minimum.

Management Recommendation

Protect the watershed by not allowing harvest of timber when the soils may be compacted. If reforestation is required it should be done within 3 years as healthy trees provide good protection from erosion. Either do not graze while the meadows are wet, or fence the wet meadows. Develop springs to provide water for cattle and wildlife and protect springs from trampling by animals and compaction from equipment with perimeter fences. Spring developments will need to be maintained to continue providing water. Maintain roads and trails so that sediment does not enter streams. Keep healthy vegetative cover on the ground at all times. If there are wildfires, seed the bare ground with grasses and forbs in the fall, preferably when the soil is still dusty so the seeds are mostly covered or else seed over snow. Do not seed over 8# per acre of a good forestry mix or the grass will be more than needed for erosion control, and will become overly competitive for tree seedling and native vegetation

establishment. Make sure all culverts or bridges allow for at least a 50 year peak storm flood event.

Consider doing some precommercial thinning. This not only helps the health of the remaining trees, but also allows more water to penetrate the watershed. You should seed roads and landings following harvest of timber. See the MERA Watershed Report that will be published separately for more information.

- **Watershed and soils are closely related**
- **Proper drainage of manmade structures reduces erosion**
- **Avoid compaction of soils**
- **Vegetation reduces erosion**
- **There are spring development potentials**
- **Forest management should promote a healthy watershed**

Priority: Medium high to high. With the exception of roads, the watershed is in good condition, assuming reforestation will take place where required under the Oregon Forest Practices Act.

NOXIOUS WEEDS

There are noxious weeds present that are on the county noxious weed list. Some of the weeds noted include hounds tongue, Canadian thistle, knapweed and a low growing prickly weed found mostly along roads and trails. Noxious weeds can quickly become a problem. A management recommendation would be to make annual weed patrol ***and control*** a priority to reduce existing populations and prevent spread of noxious weeds. Following precommercial or commercial thinning there is likely to be a period of several to 5 years in which there will be weeds, especially bull thistle, present. A good seeding of grass and forbs will help reduce the weed population. Check with the County Weed Control Department in the Public Works Department for Noxious Weed identification and control methods. It is your responsibility to control noxious weeds. See the MERA Noxious Weed Report that will be published separately. Noxious weeds should be addressed in a more detailed grazing plan.

- **Several noxious weed species are present**
- **Control is much easier and cheaper while populations are low**
- **Contact the County Weed Department**

WILDLIFE MANAGEMENT

Mule deer, Rocky Mountain elk, wild turkeys, bear, cougar and probably wolves along with many species of small mammals and birds use the property. Both standing and down snags are available for small mammal and bird feeding and nesting habitat. There are sources of year-around food, water and good cover for larger mammals. The property provides diverse habitats for many species of birds and mammals.

Management Recommendation

The recreation area needs no special additional manipulation for wildlife. Forest management recommended later in this plan will not have a significant impact on wildlife populations either good or bad provided logging slash is reduced so that large mammals can continue to travel easily across the property. Future timber harvest should consider leaving snags and down woody material for wildlife of various species. This type of material is used by both birds and small mammals for nesting and cover substrate. The insects that start to break the wood fiber down are often themselves food for birds and mammals, and other insects such as carpenter ants may be predators on insects harmful to the trees.

There is a good mix of forested and open areas to accommodate many wildlife needs. Snags and down woody material is available for birds and small mammals. There is hiding cover, rearing and den habitat for large mammals.

Placing nest boxes for birds and bats while developing maintenance program for nest boxes could be considered. These species help to control insect populations. There is plentiful water and food available for wildlife, but developing additional water sources would help to disperse and possibly increase wildlife of all kinds. If a hawk's nest is found in a tree, protect the nest. In the type of management being considered for this property, protecting the nest tree would be adequate for the needs of the raptors. An exception would be if a goshawk nest is found. Several acres around the nest should have enough timber cover to discourage red tail hawks from taking over the nest. For more information see the MERA Wildlife report that will be published separately.

- **Many species are present, both game and non-game**
- **Wildlife can be affected by forest management, both positively and negatively depending on species, time of year and habitat required**

FOREST MANAGEMENT

FOREST TYPE DESCRIPTIONS/RECOMMENDATIONS

A forest type will have similar soils, species, stand structure, sizes and ages. The types are indicated on the type map by solid lines with a number identifying each type. Management activities such as harvest or pre-commercial thinning could take place within one forest type or across several forest types. Most of the forested areas on this property have been harvested several times since the early 1900's.

Forest management areas are divided into NW (Northwest), NE (Northeast), SE (Southeast) and SW (Southwest) for ease of classification purposes. These areas correspond to the logical truck haul routes for the types. However, in many cases types that would logically be treated at the same time may be in different areas. The NW area is that area west of the Mt. Emily rim in Sections 6, 7, 18, 12 and 13. The NE area is that area east of the rim in Sections 5, 6, 7 and 8. The SE area is that area east of the rim in Sections 16, 17, 18 and 20. The SW area is that area

west of the rim in Section 18, and all of the MERA property in Sections 19, 24 and 25. Some types will cross the boundaries of these areas. Those types will be labeled according to the area in which most of the type resides.

TYPE NW1 – Ponderosa Pine Plantations I – 269 acres

Type NW1 consists of about 269 acres mainly on south and east facing slopes in the northwest of the property. It was clearcut 15 or 20 years ago after most of the overstory trees had been severely defoliated by the spruce budworm. It was then replanted to ponderosa pine at the rate of about 300 trees per acre. The survival rate was very good, and natural seedlings filled in a lot of the spaces with the result that many places have 500+ trees per acre. This type is fully stocked. There are scattered overstory trees, most of which are infected with dwarf mistletoe.



Management Recommendations

Included in this type are some small areas with very dense natural regeneration having 2,000+ trees per acre. The species in these thickets are mostly tamarack (western larch) and lodgepole pine. The diameters range from about 2 – 8” DBH (diameter breast high, 4.5’ above the ground). The thickets make up less than 10% of the area and should be considered for pre-commercial thinning soon in order to keep individual crop trees healthy and to reduce the risk of insect attack and mortality.

This type will not be ready for harvest for another 10-15 years. At that point it could be commercially thinned either for pulpwood or small sawlogs, depending on the market at that time. If markets are not available at that time we suggest letting it grow until there are markets. As the crowns close in there will be less understory available for grazing, and the trees should begin to self-prune.

Sawlog volume available for harvest – low to none for 15 years. If markets support it, some of the scattered overstory should be removed to keep mistletoe from spreading to the young trees. The scattered overstory could be considered for firewood removal if other markets are not available.

- **Clearcut 15-20 years ago due to insect mortality**
- **replanted to pine at ~300 trees per acre**
- **Precommercial thin thickets 1-5 years**
- **Possible harvest for forest health, may have some revenue in 15+ years**

Priority for action: Low for harvest, moderate to high for precommercial thinning in select areas and high for sanitation harvest or scattered overstory tree removal.

TYPE NW2 – Ponderosa Pine Plantations II – 270 acres

Type 2 consists of about 270 acres mainly on west and north facing slopes in the northwest of the property. It was clearcut 20+ years ago after most of the overstory trees had been severely defoliated by the spruce budworm. It was then replanted mostly to ponderosa pine and



western larch at the rate of about 300 trees per acre. The survival rate was very good, and natural seedlings especially Englemann spruce, white fir, western larch and Douglas-fir filled in especially on the north slopes with the result that many places have 500+ trees per acre. Ceanothus, a nitrogen fixing shrub, is the major understory species. If a wildfire starts in this type it will burn very hot due to the high concentration of Ceanothus that also makes it difficult to access for fire fighting. The trees are sapling, pole sized and even small sawlog sized in some of the higher sites. This type is fully stocked to overstocked depending on the amount of natural regeneration. This type also has scattered overstory trees infected with dwarf mistletoe.

Management Recommendations

Included in this type are some small areas with very dense natural regeneration having 2,000+ trees per acre. The species in these thickets are mostly tamarack (western larch), Englemann spruce and white fir. The diameters range from about 2 – 8” DBH (diameter breast high, 4.5’ above the ground). The thickets make up less than 5% of the area and should be considered for pre-commercial thinning soon in order to keep individual crop trees healthy and to reduce the risk of insect attack.

This type could be ready for a commercial harvest in 10 years. At that point it could be commercially thinned either for pulpwood or small sawlogs, depending on existing markets at that time. As the crowns close in the trees will start to shade out the Ceanothus and hopefully self prune which will provide a better product for lumber. Sawlog volume available for harvest – low to none for 10 years. Remove mistletoe infected overstory.

- **Clearcut 20+ years ago due to insect mortality**
- **Replanted to pine at ~300 trees per acre**
- **High natural recruitment in <15 acres resulting in 500 – 2,000+ trees per acre in need of precommercial thinning.**
- **Potential commercial harvest in 10+ years**
- **Remove mistletoe infested overstory**

Priority for action: Low for harvest, moderate to high for precommercial thinning in select areas.

TYPE NW3 – White Fir/Englemann Spruce Sawlog – 89 acres

This type is higher elevation white fir and Englemann spruce overstory with 1-2 MBF (thousand board feet) of merchantable logs. These trees are susceptible to windthrow, insect and/or diseases now that they are open grown. There are other species but they make up less than 5% of the trees. There are 89 acres in this type. Some of the area has been logged recently and there is not a lot of regeneration. These are likely to seed in naturally within the next 3-5 years. Other parts of the type have not been harvested for 20-30 years and are fully stocked with natural reproduction from seedlings to trees 16"+ dbh (diameter breast high or 4.5' above the ground). Most of the reproduction is white fir and Englemann spruce. There are a couple of small areas that have higher sawlog volumes. One area has about 20 MBF and the other has about 50 MBF. These are steeper rocky areas that will be difficult to justify harvesting until there is a very high market price for logs.

Management Recommendation

Because the type is fully stocked for the most part, a commercial harvest could take place as soon as the market for white fir and Englemann spruce is adequate. An overstory removal is recommended within the next 10 years. That will leave a stand of healthy young trees for the future. Thickets of pre-commercial trees should be thinned as soon as that is feasible. Sawlog volume available within 10 years – 100 to 200 MBF.

- **1-2 MBF per acre**
- **Commercial harvest of 100-200 MBF when markets are favorable but within 10 years**
- **Precommercial thin about 40 acres**

Priority: High to moderate for commercial and pre-commercial harvests.

TYPE NW4 – Pole Thickets – 87 acres

This type has 87 acres of pole sized trees. The species mix is mostly western larch and lodgepole pine with some white fir. There are over 2,000 stems per acre with diameters from 2-8". The thickets need to be thinned to release the dominant trees for growth. Growth now is very slow, and the smaller trees are starting to die out. The trees could be thinned for posts and poles if the market is good enough. This type is definitely overstocked.

Management Recommendation

Commercially or pre-commercially thin this type soon. If not thinned, this type may take another 30+ years to produce sawlogs.



- **2,000+ trees per acre**
- **Potential post market when thinning**
- **Precommercial/commercial thin within 10 years**

Priority – High for thinning.

TYPE NW5 – DF/PP Mistletoe Overstory – 23 acres

This type has 23 acres of Douglas-fir and ponderosa pine overstory that is heavily infested with mistletoe. It is on rocky, thin soils, and natural reproduction while present is not plentiful. The trees are of poor form and vigor. Trees have been harvested from this type in the past. There is about 2 MBF per acre. This type is stocked as it is a poor site. It would be difficult to replant. There is mistletoe in Douglas-fir, tamarack and ponderosa pine.

Management Recommendation

The overstory should be harvested as soon as adequate markets are available so that the infected overstory does not completely infect the reproduction. At that time evaluate whether planting will be needed or desired. There will only be about 20 MBF available for harvest so this could be marketed with some of the other harvests.

- **High rate of dwarf mistletoe infection in overstory**
- **Overstory removal will protect understory**
- **Only 20 MBF, a small harvest**

Priority – High priority for management action

TYPE NW6 – WF/LP Thicket – 13 acres

This is a small area of white fir and lodgepole pine on the SW boundary of the NW area. It has been commercially thinned in the past 5 years. The tree sizes are from pole to small sawtimber. It covers 13 acres and has 2-3 MBF per acre. This type has been commercially thinned to release the better trees. It is on moderately good soils and will do well if managed.

Management Recommendation

Commercially and/or pre-commercially thin in this area while harvesting NW5.

- **Recently commercially thinned**
- **2 – 3 MBF per acre**
- **In relatively good shape**

Priority – Low to Moderate, dependent on markets.

TYPE NW7 – Natural Reproduction – 161 acres

This type consists of 161 acres in several areas over the landscape. The natural regeneration came in after harvesting. It was probably harvested because of spruce budworm damage and/or mortality. These are some of the higher sites for growth. It is not unusual for “naturals”



to seed in too thick following a disturbance. The species mix is white fir, western larch, Douglas-fir, Englemann spruce and lodgepole pine. The trees vary from seedlings to small poles. There are individual overstory trees and groups of overstory trees scattered throughout the type. The overstory is generally in poor condition. The regeneration tends to be overstocked.

Management recommendation

A pre-commercial thinning will be needed at some point. Whenever a good market for small sawlogs is available consider a sanitation overstory removal. This will be a very small timber sale but will keep the understory healthy. Even a break-even project would provide a job for the community while improving the timber stand as some of

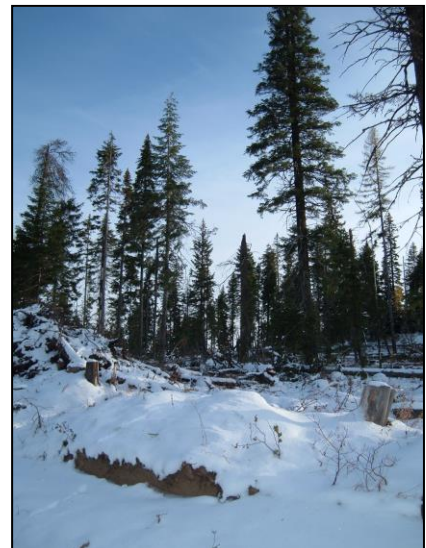
the overstory has mistletoe that could spread to the younger trees. A firewood sale should be considered. Due to the scattered nature of the overstory, the smaller diameter of the logs and the poorer form this is not likely to make money but would be a stand improvement project.

- **Precommercially thin 10+ years**
- **Remove overstory**

Priority – moderate for pre-commercial thinning, high for removing diseased trees.

TYPE NW8 – Recent Harvest – 63 acres

This type has been harvested in the last couple of years. It consists of 63 acres. There is little regeneration at this point, but there are enough trees left to be considered stocked with the expectation that they will naturally regenerate the area. Most of the overstory is white fir and Englemann spruce with about 3 MBF per acre. It has been commercially thinned in the last 5 years. The wide spacing on deep soil makes this type susceptible to windthrow.



Management Recommendation

Wait 3 to 5 years until a good market returns and natural regeneration is plentiful and then conduct an overstory removal. This would be a commercial harvest able to generate some revenue. An estimated volume to be harvested would be 225 MBF. Even if regeneration is not present in adequate quantities consider harvesting and plant where needed.

- **Recently commercially harvested**
- **About 3 MBF per acre**
- **Susceptible to windthrow**
- **Consider harvesting overstory either when natural regeneration has filled in or if it starts getting more windthrow, within 5 years**
- **Could harvest about 225 MBF, considered a small size sale**

Priority - medium

TYPE NW9 – White Fir non-harvest – 38 acres

This type consists of about 38 acres on the northwest boundary. It consists of steep rocky slopes that were not harvested through 2011. The volumes per acre are fairly heavy for this sector at about 6MBF of a mix of white fir, Douglas-fir, tamarack and a few ponderosa pines. There is the usual amount of Douglas-fir and tamarack mistletoe. The white fir has a lot of defect due to old top kill, breakage and rot in the stems.

Management Recommendation

Little or no action needs to be taken in the near future. If there is a strong market price for white fir a small timber sale of probably less than 100 MBF of sanitation and salvage could be considered. Logging would be expensive due to low volume and difficult terrain.

- **Higher volume of sawlogs, about 6 MBF**
- **Difficult to harvest**
- **Could provide hiding cover for big game, and cool cover for summer**

Priority - low

TYPE NE1 – Ponderosa Pine - Douglas-fir – 277 acres

Located on the lower or east portion of this area, this type has about 277 acres and has been harvested in the last several years. The species mix has an overstory of ponderosa pine (80%) with Douglas-fir (15%), western larch and white fir (5%) either mixed in or the majority species in small areas. This is a moderately productive site well suited to growing ponderosa pine and Douglas-fir. If the overstory closes in, Douglas-fir has the advantage as an understory tree. There are areas where reproduction is adequate, but the area of this type south of Conley Creek has a heavy grass understory and reproduction is scarce there except for small patches that

existed prior to this last harvest. Volume per acre ranges from 3 – 6 MBF per acre. The average volume is about 4 MBF per acre. Sawtimber ranges from 10” to 26” DBH. There are only minor



insect and disease occurrences in this type. There are many small areas of ¼+ acres of sapling and pole sized trees throughout this type that are overstocked.

Management Recommendation

This type has been harvested in the last 3 years. It is in good condition to grow very well and remain healthy. To be managed for non-motorized recreation, little or no management activity is recommended for over 10 years. The larger trees will continue to grow at about a 4% rate over the next 20 years if we do not have another drought or insect or disease problems. Some overstory, up to 30% of the volume, could be removed without harming the aesthetic value. The type should be checked for reproduction in about 3 years. If none is present consider planting trees.

- **Nice sawlog stand**
- **Averages about 4 MBF per acre**
- **Recent harvest, no harvest projected for the next 10 years**
- **Low insect and disease occurrence**
- **Check south of Conley Creek for regeneration in 3 years, if needed plant**

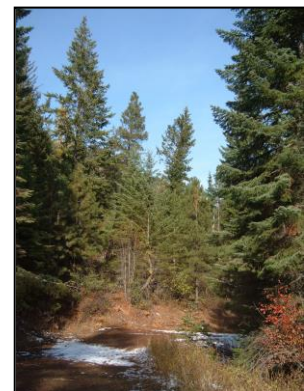
Priority – Low for harvest, moderate for reproduction, moderate to high for pre-commercial thinning.

TYPE NE2 – Mixed Conifer – 129 acres

This type is about 129 acres. It has been harvested in the last several years. It is on the more north and east facing slopes with slightly better soils than Type NE1. The species mix is Douglas-fir, white fir, western larch and ponderosa pine. Volume per acre is about 3 MBF. This type is fully stocked. A lot of the remaining trees are pole to small sawtimber. The trees are mostly healthy with some dwarf mistletoe especially in western larch and some Douglas-fir. Areas within the type are overstocked. This type is a little more productive than NE1. It is a multi-aged stand with seedling to sawlog sized trees. There are many small thickets of sapling and pole sized trees scattered throughout this type.

Management Recommendation

The overstory should have a sanitation/small sawtimber harvest in the next 3 to 10 years. The timing should be planned when a good



sawlog market returns. A good pulp market would also be a good time to salvage and to further thin the dense patches of white fir. Pre-commercial thinning of clumps of sapling and pole sized trees would also help the stand. A projected harvest volume at 1-2 MBF/acre would be 200 MBF in 10+ years. The type is fully stocked at this time.

- **Productive fully stocked site. About 3 MBF per acre**
- **Plan a sanitation/salvage harvest within 10 years, sawlog and pulp**
- **Remove trees with mistletoe to protect other trees**
- **Precommercial thin scattered thickets anytime, 30 to 40 acres**

Priority – Medium for sanitation and thinning.

TYPE NH – Helicopter/Mixed Conifer – 311 acres

This type has about 311 acres. Parts have been harvested in the last 15 years. It is on the steep south and west slopes in the north end of the area. The landing and roads for helicopter harvest are in place. The species mix is Douglas-fir, white fir, western larch and ponderosa pine. Volume per acre is about 2 MBF. This type is fully stocked. It is a multi-aged stand with seedling to sawlog sized trees.

Management Recommendation

This area should be left to grow until enough volume is available to make helicopter logging profitable. This is likely to take 20 to 25 years. The type is fully stocked at this time.

- **No forest management activity needed in the next 10 years**
- **2 MBF per acre**

Priority – Low

TYPE NE3 – Pre-commercial Thin Mixed Conifer – 17 acres

This type is in Conley Canyon on steep northeast facing slopes. It is a sapling to pole sized stand of white fir, Douglas-fir and western larch on productive ground. It has about 17 acres. There is a small amount of small sawlog volume. The trees still are relatively healthy, but individuals are beginning to die due to competition.

Management Recommendation

Pre-commercially thin and reduce slash fire hazard as soon as possible. This definitely should be done within the next 10 years. If there is a good biomass market, some of the thinning may be able to be salvaged. This stand is at high risk for fir engraver and other bark beetles to become active. There probably will not be a commercial sawlog market for the thinning. The type is severely overstocked at this time.

- **Precommercially and/or pulp thinning within 10 years**
- **Already some mortality due to crowding**
- **Good site with healthy trees**

Priority – High for pre-commercial thinning

TYPE NE4 – Mixed Conifer on Steep Slopes – 295 acres

This type has about 295 acres. It has been harvested in the last year. It is on steep north and east facing slopes. This is a good growth site but it does require logging by skyline. Roads are in place to do that. The species mix is Douglas-fir, white fir, western larch and ponderosa pine. There is very little commercial sized timber left, and that which was left was due to the difficulty and expense of logging. The trees are mostly healthy with some dwarf mistletoe especially in western larch and some Douglas-fir. This type is now a stand of saplings and pole sized trees.



Management Recommendation

This type should be monitored over the next 4 years to see if there is enough healthy stocking to satisfy the Oregon Forest Practices Act. If planting is needed it will need to be done in the next 4-5 years. There is no need to harvest in this stand for the next 30 – 50 years. Mistletoe in the stand should be monitored for spread into other trees in this forest type.

- **Mixed skyline and tractor ground**
- **30+ years to next commercial harvest**
- **Check for reforestation need in 3 years**

Priority – High for reforestation needs, low for harvest consideration

TYPE SE1 – Ponderosa Pine - Douglas-fir – 430 acres

This type covers most of the SE area. It is about 430 acres and has been harvested last year. It is a continuation of NE1, and as has many similarities. The species mix has an overstory of ponderosa pine (80%) with Douglas-fir (15%), western larch and white fir (5%) either mixed in or the majority species in small areas. This is a moderately productive site well suited to growing ponderosa pine and Douglas-fir. If the overstory closes in, Douglas-fir has the advantage as an understory tree. Reproduction is adequate in the brushy ninebark and oceanspray areas but the area with grass and snowberry understory has not regenerated. New seedlings are not necessary to meet Forest Practices rules, but would be desirable to have another generation of trees starting to grow. The small openings that were created by past harvests tend to be

overstocked, and that might happen over time if natural regeneration is successful. Volume per acre ranges from 3 – 6 MBF per acre. The average volume is about 4 MBF per acre. Sawtimber ranges from 10" to 26" DBH. There are only minor insect and disease occurrences in this type. There are minor amounts of dwarf mistletoe in both the ponderosa pine and the Douglas-fir. That should be addressed in the next entry. Scattered throughout this stand are small areas of ¼ to a couple of acres that are overstocked with saplings and poles.

Management Recommendation

The southern half of this type was harvested last year. The north half was harvested a couple of years earlier. It is in good condition to grow very well and remain healthy. To be managed for non-motorized recreation, little or no management activity is recommended for over 10 years. The larger trees will continue to grow at about a 4% rate over the next 20 years if we do not have another drought or insect or disease problems. Some overstory, up to 30% of the volume, could be removed without harming the aesthetic value. The type should be checked for reproduction in about 3 years. If none is present consider planting trees to keep the aesthetic character over the long run. The only recommendation is pre-commercial thinning the small overstocked clumps of both ponderosa pine and Douglas-fir in the next 5 years.

- **3 – 6 MBF per acre**
- **Minor amounts of insect and disease**
- **High value for recreation**
- **Some reforestation may be desirable to keep the area stocked in the future**
- **Precommercially thin small overstocked areas, 40+ acres**

Priority – Low for harvest, moderate for reproduction and pre-commercial thinning.

SE -A– Aspen - <1 acre

There are a few small remnant patches of aspen less than an acre in size in SE1. We did not see any trees larger than seedling or sapling. These trees do not have a commercial value at this time but could be very aesthetic and would be a good addition to a recreation area. They are also a preferred browse species for elk and cows. If development of a few stands of aspen is desired some action will need to be taken quickly. The trees are root sprouts that are overtopped by conifers, and they are not very vigorous due to competition.

Management Recommendation

If development of these stands is desired all of the conifers should be removed for a distance of at least 50' from the outlying sprouts. Then the cleared area will need to be fenced with high fences to keep elk, deer and cattle from entering them. The fences can be either native pole fences or wire fences about 8' tall. This could be a good volunteer project. The USFS has had a lot of experience in doing aspen restoration that they are willing to share.

- **If Aspen are desirable they will need to be protected**
 - **Fence with tall fences**
 - **Remove all conifers within desired area**

Priority – depends on interest in having aspen groves. High if desired, low if not

SE2 – Steep Ponderosa Pine and Douglas-fir – 15 acres

SE2 is located on a relatively small steep northeast facing rocky hillside. Most of it has never been harvested due to the difficulty to do so. The area north of the rocky outcrop is mostly ponderosa pine and the area south of the outcrop is mostly Douglas-fir with some white fir. There are about 15 acres in this type. This is a lower productive site with a lot of rock and is densely populated with sawlog sized trees. There is little to no regeneration. Access for harvest would be difficult making it an expensive harvest. Volume per acre ranges is from 8 - 12 MBF per acre. This type is slow growing due to the crowding of the trees. There are only minor insect and disease occurrences in this type. This area is used heavily by turkeys, and mule deer use it for escape cover.

Management Recommendation

This type has not had any harvest for many years. It is slow growing but appears to be healthy. Little or no management activity is recommended for over 10 years. It is good escape cover for the population of elk and mule deer in the area.

- **Steep rocky refuge, fully stocked with sawtimber**
- **Little to no regeneration**
- **8 – 12 MBF per acre**
- **Very difficult to harvest due to location**

Priority – Very low for harvest.

TYPE SE3 – Older Plantation – 52 acres

This type is located in the northwest portion of this area. It was planted to ponderosa pine below the road, with ponderosa pine, Douglas-fir and even a few white pines above the road! White fir has naturally seeded into the better sites. It covers 52 acres and most has been commercially thinned this year. The trees are 45 – 50 years old, and are large enough for small sawlogs and pulp. This type tends to have a lot of brush in the understory and that is likely to increase now that some of the trees have been removed. If trails are built through it sight distances would quickly become very short. The trees appear to be healthy and they are growing quite well. There is little insect or disease activity in this type. The species mix is ponderosa pine (70%) with Douglas-fir and western larch (25%), and white fir (5%). This is a moderately productive site well suited to growing ponderosa pine and Douglas-fir. Where commercial thinning has taken place the trees should grow very rapidly but will have a lot of limbs. There is very little reproduction but that would not be expected in an even aged stand of

trees this age. Volume per acre is about 1.5 MBF per acre. Sawtimber ranges from 10" to 12" DBH and is quite tapered.

Management Recommendation

This type is in good condition to grow very well and remain healthy. No management activity is recommended for over 10 years. Expect rapid growth. In 20 years there should be some nice trees to commercially thin.

- **Recently harvest, consider a harvest in 10 to 20 years**
- **A healthy young stand of trees**
- **This area will become very brushy**

Priority – Low for harvest.

SE4 – Old field plantations – 35 acres

This type is in smaller areas scattered throughout the SE quadrant and collectively amount to about 35 acres. It appears to have been planted in old fields that had been homesteaded at one time. It was planted to ponderosa pine 25 to 35 years ago. This was before much attention was paid to genetically selecting trees from which to gather seeds. That resulted in cones being picked from trees that produced a lot of cones. These were often open grown with a lot of low branches that produced cones and were easy to pick. That may be the reason they are slow to naturally prune even though they were planted on a 12 foot by 12 foot grid. Survival was very high. Most of this type has been mechanically thinned. There are some natural stands that have the same characteristics in the same area. Not all of them have been precommercially thinned. The trees are very limby but seem to be growing very well. Because they have been planted closely together, there are not a lot of natural seedlings. The natural seedlings are a minor mix of ponderosa pine and Douglas-fir. This is a moderately productive site well suited to growing ponderosa pine. Volume per acre is about 1.5 MBF per acre in small limby sawlogs.

Management Recommendation

This forest type has started to close in again and growth of individual trees may start to decline in the near future. If a good pulp market is present consider a pulpwood thinning. Pruning these trees would be a good activity for volunteers as that would increase the aesthetics of those stands and improve the quality of sawtimber in the future. Over the long run this type should be commercially thinned as the trees get larger until a wider spacing of the better trees meets your aesthetic requirements. The short run would be from 5-15 years and the long run as long as 100 years.

- **A healthy plantation of pine**
- **Consider a commercial thinning in 10 – 20 years**

Priority – Low to medium for commercial harvest for 5 to 10 years, medium and depending on strength of markets following that period.

TYPE SW1 – Dry Ponderosa Pine, recent harvest – 530 acres

This type has about 530 acres and has been harvested in the last several years. It is mainly a dry aspect ponderosa pine type with minor inclusions of moist site mixed conifer on sheltered slopes. The mixed conifer sites have Douglas-fir and western larch. A few small areas (<5 acres) have white fir and Englemann spruce. Timber volume averages about 1.5 MBF per acre and can best be described as “clumpy”. Species mix is about 80% ponderosa pine, 15% Douglas-fir and 5% white fir. It is a multi-aged stand with ages ranging from seedling to 30 inches dbh.

A major disease problem is dwarf mistletoe that is slowing the development of the trees. There is almost 100% mistletoe in ponderosa pine overstory. There have been minor pine beetle attacks causing mortality. Insects are at endemic levels at this time.

Most of the sapling and pole sized stands have recently been thinned. These are small areas scattered throughout this type. There are several small areas that were too steep for ground logging and too small for skyline harvest that still have 8 MBF+ per acre of sawtimber.

Management Recommendation

The overstory should have a sanitation harvest in the next 3 to 7 years. The timing should be planned when a good sawlog market returns. A good pulp market would also be a good time to salvage the mistletoe infested pole component. The objective of this harvest should be to sanitize the mistletoe from this type. Hopefully in the next 3 to 7 years more natural regeneration will have taken place. If there is little or no regeneration the area will need reforestation. A projected harvest volume would be up to 800 MBF. The type is fully stocked at this time.

- **Major mistletoe problem**
- **Harvested recently, left stocked**
- **Sanitation harvest next 3 to 7 years to reduce mistletoe in overstory**
- **May need reforestation following next harvest**
- **Projected harvest of about 800 MBF, a mostly young stand would be left**
- **Past bark beetle mortality, monitor for new activity**

Priority – High for sanitation of mistletoe and regeneration of a healthy stand of trees.

TYPE SW2 – Mixed Conifer – 30 acres

Type SW2 consists of about 30 acres in the northeast of this area just west of the rim. This is a recently harvested area that has about 1.5 MBF of merchantable timber on it. The species mix is white fir, Douglas-fir, western larch and ponderosa pine. The area has not been reforested, but natural regeneration is likely to take place to increase the amount of natural regeneration that is present.

Management Recommendation

Monitor this area to make sure natural regeneration does take place. This type will not need a commercial harvest for 20+ years. Once the type is fully regenerated with the majority of the young trees over 10' tall the overstory could be removed. This potential harvest would take place more than 10 years from now.

- **No commercial harvest for 20+ years**
- **Monitor for possible reforestation need**

Priority – low to moderate

TYPE SW3 – Ponderosa Pine – 25 acres

This type has not been harvested in the last 10 years. It has 3+ MBF per acre on 25 acres. The stand has a high incidence of dwarf mistletoe that will spread to any regeneration that takes place. At this time there is little regeneration due to the grass and snowberry understory, and the fact that it is on a dry southwest to west slope.

Management Recommendation

The major problem with this stand is the dwarf mistletoe in the overstory and that natural regeneration is not taking place. Harvest the overstory and poles when a market allows, and replant to ponderosa pine. The volume to be harvested would be about 75 MBF. An option would be to let it grow and that should be done in any case until a good market returns. A third option would be to plant ponderosa pine in the understory and harvest the overstory after the planted trees reach about 5 feet and before they large enough to become infected with mistletoe.

- **3 MBF per acre**
- **High mistletoe incidence**
- **Little regeneration**
- **Harvest trees with mistletoe and plant to pine, difficult site to regenerate**
- **About 75 MBF to harvest, a small sale**

Priority – high to moderate

TYPE SW4 – Steep Mixed Conifer – 14 acres

This type has several small areas within SW1. They consist of about 14 acres and are mostly Douglas-fir (80%), western larch (5%) and white fir (15%) on steep slopes that will require skyline logging. The areas are too small to justify moving equipment in to harvest, especially on this low log market. They may be able to be harvested at the same time a neighbor does their

harvesting. Volume per acre is about 8 MBF in relatively small sawlogs. This type is overstocked.

Management Recommendation

Commercially thin when the opportunity presents itself. The trees still are relatively healthy. It would be good to do this within the next 10 years if possible.

- **Small steep areas, will require skyline logging**
- **8 MBF per acre**
- **Healthy stand of trees**
- **Too small to harvest unless done when skyline harvesting other areas**

Priority – medium

SW5 – Pre-commercial Pine – 13 acres

This type contains about 13 acres of sapling and pole sized ponderosa pine. There are over 800 stems per acre and self thinning is starting to take place.

Management Recommendation

Pre-commercially thin as soon as you can. Leave trees should be spaced at an average of 12'+ leaving the largest most vigorous healthy trees. Leaving good trees is more important than the spacing. Trees with mistletoe should be removed.

- **Precommercial thin in the next 3 years**
- **Remove mistletoe infected trees**

Priority – high

Non-Forest (NF) – 270 acres

There are about 270 acres of rock outcrop and open rocky, brushy, grassy, or seasonally wet areas. These are not capable of growing trees of any economic value. The steep grassy areas provide habitat for deer and elk.

FORAGE

Cattle have grazed on portions of MERA for many years. Besides forage, there is water for some livestock. There are many potential sources of water that either have not been developed or have not been maintained. More water sources would improve distribution of cattle. Not all of the area is fenced and cattle do not use the entire MERA property.

Management Recommendation

There are not many water sources for cattle at this time. This results in cattle going to the one live stream to get water. There are several springs that if developed would help to keep the cattle better dispersed over the property. Salting away from water also helps to distribute the cattle. Either cattle guards or good gates would help MERA users enjoy the area more. Check forage utilization several times over the grazing season so that over grazing in some areas does not occur. Because cattle will be interacting with recreationists consider requiring the lessee to ride the area weekly to check on possible conflicts. This interaction could result in non-beneficial effects several ways. It could detract from the recreational experience for some, and it could result in reduced gains for the cattle. Fences should make allowance for passage of young deer and elk. Oregon Department of Fish and Wildlife can provide specifications for fences. MERA could become a showcase for grazing cattle in the forest, sometimes called agro-forestry. See the MERA Grazing Report published separately for more information and recommendations.

ROADS & TRAILS

There is a good road system in place for harvest of timber. Most of the area has been harvested recently using either ground based or line logging. The only area that has not been harvested is the helicopter unit in the north end of the property, and the present roads would serve that type of harvest. See the roads map for illustrations.

At present the roads and trails on MERA need a maintenance plan. Maintenance needs range from very little to fairly major drainage issues. The lack of maintenance and drainage on heavily used travel corridors (particularly on trails used by non-logging activity) is causing noticeable erosion.

Management Recommendation

Develop a rigid monitoring and maintenance plan. Review all travel corridors annually and plan maintenance accordingly. If annual repair and maintenance of travel corridors is not possible, those routes should be closed until necessary repairs are conducted to prevent additional resource damage and increased erosion rates

The roads used for harvest the past 5 years should be in good condition following the harvest that has been taking place. Some closing out maintenance such as final shaping and pulling ditches should be done to set them up for low maintenance until the next harvest. Not all haul roads were used for recent harvests. Large areas in the northwest portion were not used because there was little or no commercial volume. These roads should be included in a maintenance plan.

All roads that had been used for logging should be maintained at some level to provide access for management and fire fighting. Management should include brushing out and grading to

keep roads in good condition for travel. ATV travel will have a tendency to dust out roads if they have not been rocked. The road can become difficult for fire engines to travel as the fines are removed from the surface, leaving a rough rocky road bed. If the roads are pulled back in every 1 or 2 years they can be kept in good shape.

Erosion control water bars and dips can get filled in or rutted out with ATV traffic. Proper placement of water bars will reduce erosion from water. They need to be regularly maintained to keep them operational. That can be done along with the above mentioned maintenance. There are culverts located on the main roads. These should be marked so they are easily located for checking yearly or more often to make sure they are operational. Spring is a good time to do this. A clogged culvert will quickly lead to a washed out road bed.

The ditches on the main roads should be pulled as soon as possible. There are several places where filled in ditches are starting to develop problems with the road surface. Some of this is due to recent harvest operations. Erosion is starting to take place in some places. This can be cured by clearing ditches and, in some places, by providing a dip to turn water off the roads. Once initial maintenance is done in the non-motorized area it will not need attention nearly as much as in the motorized area. Volunteers with shovels could open ditches that have sloughed in so that water does not saturate the road prism, but instead flows down ditches to culverts.

- **Monitor at least yearly, spring is the best time**
- **Maintain drainage to prevent erosion**
- **Assure that selected roads are open for fire protection and suppression**

Priority: High to maintain and improve road systems in both motorized and non-motorized areas.

ARCHEOLOGICAL AND CULTURAL RESOURCES

Archeology and cultural resource surveys have not been completed but plans are being made to have them completed. Native Americans have undoubtedly used these areas as they would have made good hunting grounds and could have been camping grounds. Old cultural resources are evident in some places in the form of garbage dumps and small orchards. It appears that some of the planted areas in the southeast quadrant were old fields of some sort. The pond in the southeast has been used as a source of irrigation water and there are several springs that could be developed for domestic use. The Archeological and Cultural Resources Report will be published at a later date after surveys have been completed.

RECREATION

This area was obtained for recreation use. It has a long history of being used for recreation, especially when owned by Boise Cascade. It is close to La Grande, the major population area of Union County. It is some of the lowest forested areas of the valley and a pleasant protected area in which to recreate. The primitive infrastructure of roads made it a prime area for hiking

and running. The archery club has been using portions of the area for many years with targets set up over a large area and a common area to use for gatherings and contests. Mountain bikers have built and maintained trails for their use. The area is used for horseback riding, hunting and ATV's. Union County is and has been fortunate to have this area for its people to use for many purposes. The area has been logged several times and cattle have grazed in at least some of the area for many years. Good forest management allows a good recreation experience and can be used to enhance the recreation experience.

A recreation plan is being prepared for the area. Some improvements such as parking areas and pit toilets are already installed. See the recreation plan being prepared by the county for more information.

AESTHETIC AND SCENIC RESOURCES

MERA has two distinct sides from an aesthetic or scenic view. It is located in the scenic Blue Mountains of northeast Oregon. The east side is seen from the Grande Ronde Valley. It takes in much of the forested east slope of the south extension of Mount Emily, the scenic anchor of the valley. The southeast portion of MERA has 100+ year old ponderosa pine and some Douglas-fir of the same age. Trails wind through the 100 foot tall trees with interspersed meadows and one year around stream. The forested view from within is enhanced with glimpses of the valley floor and the mountains on the east side of the valley. The flora consists of several different plant associations. Other places on this east side are more open with fewer overstory trees and more young trees. This area provides more continuous views across the valley.

The west side of MERA is "on top" of the south flank of Mount Emily. This area also is forested with some interspersed small meadows. The trees here tend to be younger (<50 years) in plantations. The species are a mix of relatively pure ponderosa pine and mixed species with few ponderosa pines giving a varied aesthetic experience. You can lose yourself in the solitude of 30 to 40 foot young trees that block long distance views or look for long distances from vantage points. High points provide views of the Blue Mountains to the south and west. The rim of Mount Emily that divides the two areas provides awesome views of the valley, the ringing mountains and beyond. The Eagle Cap Wilderness can be seen to the east.

Improvements in trails and other infrastructure including educational signing can greatly improve the ability of the general public to take in the beauty of this valuable county resource. With carefully planned forest management the scenic and aesthetic values of MERA will be able to be maintained and enhanced while producing various forest products (recreation, mushrooms, logs, big game, etc) for the local economy.

THREATENED AND ENDANGERED SPECIES

No threatened or endangered species were observed while this plan was being prepared. As far as has been generally reported none, are known to exist in MERA. That does not mean that some of the far ranging threatened and endangered animals such as wolves and wolverines will not pass through this area. It is likely that they will. More study and additional reports by

biologists would be needed to identify plants that may be on the list. There is always the chance that some obscure plant, insect or animal may be discovered in the future.

FIRE PLAN

A fire plan is important for this property due to its recreational emphasis as well as for harvest of timber of timber and other forest management uses. A fire plan would include road and trail management as well as fuels management.

Road and trail maintenance are key to providing access for fire fighters in the event of a wild fire. Maintenance is also important in the event that use of prescribed fire for fuels management is planned. All roads that have been used by trucks and pickups should be maintained including keeping brush from encroaching and proper drainage to provide easy and quick passage by wildland fire engines. Roads that have deep ruts, including deep ruts caused by ATVs, slow passage for access and/or escapement for fire fighters. Rolling dips are preferable to steep and deep water bars for drainage. Maintained road and ATV trails will be useful as firebreaks in the event of ground fires, and also expedite fire crews in reaching or escaping from fires.

It is important that fire fighters can refill their fire engines as quickly as possible when fighting wildland fires. Consider developing ponds where there are springs or streams that could be used for firefighting either by ground or air. Helicopters can pick water up from ponds that are developed if necessary. Time is very important to keep small fires from becoming large fires. The Oregon Department of Forestry can advise you as to location of ponds for fire reservoirs.

Fuels management is also important to reduce both the risk and severity of wild fires. Clearing significant amounts of fuel from 50-100 feet on both sides of roads and trails will reduce the risk of fires starting from recreational users. Reduced fuels also provide a "green fire break" in the event of severe fires or crowns fires. They become a focus of attack for fire fighters. Precommercial thinning and treatment of the slash along roads and trails will reduce the risk and severity of fire.

Another part of the fire plan would be to thin out the trees where you have ladder fuels to keep a fire that might start from "crowning out". Cleaning up slash from thinning and harvesting will also reduce fire severity. Some slash can be left on the ground to recycle nutrients, but slash concentrations can become a hazard. Continuing grazing also helps to keep fire intensity and rate of spread down by reducing the amount of fuel on the ground. See the **Fire Prevention Agreement** between Union County and the Oregon Department of Forestry in the appendix for more details.

SUMMARY

The following summary of activities will guide management of MERA. Adherence to this schedule will help ensure that resource values are preserved and that resource goals are met. Activities that prevent the potential for loss of resource and/or economic value should be given

the highest priority. Likewise, when resource losses are identified through monitoring, remediation / action to protect resources should be given the highest priority.

Activities are listed by priority:

- 1) = High priority, conduct annually / as needed.
- 2) = Medium priority, conduct in 2 to 4 years.
- 3) = Low priority, conduct next five years or as budgets allow.

- 1) Conduct annual inspection survey of all travel surfaces (roads and trails) and schedule maintenance according to need.

Conduct annual inspection of forest health and schedule harvest and thinning activities according to need.

Plan projects for volunteer workers.

Noxious weed patrol/control.

- 2) Remove mistletoe infected scattered overstory.

Begin precommercial thinning program.

Start commercial sanitation program.

Reforest where needed.

Monitor pulpwood market.

Monitor post & pole market, thin select stands if market is available.

Consider aspen restoration project.

- 3) Continue precommercial thinning.

Consider pruning planted stands, especially in selected trails areas.

Re-evaluate potential markets.

Table of Recommended Forest Management Actions for MERA

Area	Action	Priority	When(years)	Acres	Volume MBF
NW1	PCT	Mod-High	1 to 5	40	-
	Sanitation	High	1 to 2	All	10 cords
NW2	PCT	Med-High	1 to 5	20	-
NW3	Harvest	Med-High	1 to 10	-	100-200MBF
	PCT	High-Med	1 to 5	70	-
NW4	PCT	High	1 to 5	30	-
NW5	Harvest	High	1 to 5	-	20MBF
NW6	Comm. Thin	Med-High	1 to 5	-	15MBF
NW7	PCT	Med	1 to 10	50	-
	Sanitation	High	1 to 5	50	-
NW8	Harvest	Med	3 to 5	25	75MBF
NW9	Harvest	Low	5 to 10+	15	100MBF
NE1	PCT	High	1 to 8	15	-
	Plant	Med	2 to 5	80	-
	Harvest	Low	2 to 10+	80	150MBF
NE2	PCT	Med	3 to 5	10	-
	Sanitation	Med	1 to 5	As needed	200MBF
NEH	Harvest	Low	10+	80	?
NE3	PCT	High	2 to 10+	10	-
SE1	PCT	High	2 to 5	15	-
	Plant	Med	2 to 5	As needed	-
	Harvest	Low	3 to 10+	As desired	-
SE Aspen	Encourage	Low	1 to 10+	As desired	-
SE2	Harvest	Low	10+	90	-
SE3	Harvest	Low	10+	25	-
SE4	Harvest	Med to Low	5 to 10+	20	-
NE4	Plant	Med to High	3 to 5	20	-
	Harvest	Low	10+	80	-
SW1	Sanitation	High	1 to 5	All	<500MBF
	Plant	High	2 to 6	All	-
SW2	Monitor Reg	High	2 to 5	All	-
	Harvest	Low	20+	All	-
SW3	Harvest	High to Med	2 to 5	All	75MBF
	Plant	High	3 to 6	All	-

*PCT – Precommercial Thinning, Comm. – Commercial, Reg. – Regeneration
Acres – estimated acres needing management activity.*

APPENDIX

GLOSSARY OF TERMS

Age class - One of the intervals into which the range of ages of trees in a stand are divided into for descriptive purposes.

Annual ring - The growth layer of one year on a tree, as viewed on the cross-section of a stem, branches, or root. One year's growth consists of a layer of lighter-colored wood (springwood) and a layer of darker-colored wood (summerwood).

Aspect - The direction toward which a slope faces (exposure).

Basal area - a. The cross-sectional area of the bole of a tree 4.5 feet (breast height) above the ground. It is expressed in square feet per acre and is calculated by: diameter of tree squared times .005454.

b. The sum of all the individual tree basal areas for a stand of trees; it is expressed as _ square feet of basal area per acre. This serves as an indicator of how well a stand is occupying a given piece of land.

Blowdown - Trees that have been knocked over by wind.

Blue stain - A fungus discoloration, predominantly bluish, but sometimes grayish or brownish in appearance; it is confined almost exclusively to sapwood, usually in pines. Blue stain is usually introduced to trees by bark beetles boring into the inner bark and cambium.

Board foot - A volume measure of lumber: 1 foot wide by 1 foot long by 1 inch thick.

Bole - The main trunk of a tree.

Cambium - A layer of cells between the woody part of the tree and the bark. Division of these cells results in diameter growth of the tree through formation of wood cells (xylem) and inner bark (phloem).

Canker - a sore on the outside of a tree caused by a disease. Often soft or "bleeding", or with fungus spores on it.

Co-dominant - A tree in the stand of trees that is growing well and is generally above many trees in the stand. Even-aged stands often have co-dominant trees. They are slightly below the dominant trees in an uneven-aged stand.

Commercial thinning - A forest operation that consists of removing sawtimber-sized trees from a developing young stand that is in need of thinning (see "Forest Operations", Appendix A). The removed trees have a commercial value.

Conk - A hard, spore-bearing structure (mushroom) of a wood-destroying fungus that projects outside the bark of a tree. It is most commonly observed on fir trees.

Conifer – a cone-bearing tree.

Crown - The canopy of green leaves and branches formed by a tree. The amount of ground shaded by crowns is often referred to as "crown cover" and is expressed as a percent of the total ground area shaded.

Cruising - Measuring standing trees to determine the volume of wood on a given tract of land (in board feet). Used for harvesting, purchasing, and general management.

DBH - Diameter of a tree outside the bark at breast height, which is 4.5 feet off the ground on the uphill side of the tree.

Defect - Any irregularity or imperfection in a tree or log that reduces the volume of sound wood and consequently reduces the volume cruised (and scaled) from the tree.

Dominant – the biggest, tallest trees in a stand. They easily stick out above the others and generally have larger crowns than other trees in the stand.

Even-aged - Refers to a stand of trees in which relatively small age differences exist between individual trees.

Forest type - A descriptive term used to group tree stands of similar character in composition and development, differentiating them from other stands.

Gall – an abnormal growth, usually on a limb of a tree.

Intermediate – A tree in a stand that has its crown completely surrounded by other trees in the stand. It does not stick out above the general canopy.

Intermittent – refers to a stream that flows water for part of the year and dries up for a part of the year. The channel has defined channel characteristics such as banks. Usually is not completely vegetated.

Leader - The growing top (terminal shoot) of a tree. The distance between each whorl of branches up a tree's stem generally represents one year of height growth.

Leave trees - Trees left after a harvesting operation.

Mature - The age at which a tree's growth rate begins to decline, and decay begins to reduce salvageable tree volume in a stand. This occurs sometime between 90 and 200 years of age.

MBF - Abbreviation for 1000 board feet.

Merchantable timber - Trees that can be converted into saleable products. Generally this includes trees 10" DBH or greater. Also referred to as "sawtimber".

Multi-storied – a stand of timber with definite levels of trees. There might be a 100-year overstory, a 70-year stand under that, and a pole-sized stand under that.

Noxious – refers to undesirable weeds or plants. These plants are not native to the area and have been officially listed on a county list of plants to be kept under control or eradicated. Because

they are not native and have no native enemies they often spread rapidly and widely, and crowd out native plant populations.

Overstocked - A condition of a stand, indicating that there are more trees present than desired.

Overstory removal - This is a type of harvest designed to remove larger and overmature trees which overtop the remainder of the stand

Pole timber - Timber with a DBH of approximately 6-11".

Precommercial thinning - Removal of some of the trees in a young stand to reduce overall competition for water and nutrients. Trees thinned from these stands have no commercial value, hence are "precommercial".

Reforestation - The natural or artificial restocking of an area with forest tree species. The natural restocking of a site is often referred to as "natural regeneration".

Residual stand - Trees, often of commercial size, left in a stand after thinning to grow until next harvest. Also referred to as "leave trees", these trees are also important for natural regeneration of a site.

Sanitation/salvage harvest - This is an operation in which trees that are dead or in poor condition are harvested before they no longer have any commercial value. This is common where insect-infested or diseased timber is dying or is already dead and should be removed from a stand. This practice also releases healthy trees for additional growth and cleanses the stand of disease.

Sapling - A tree that is 2-5 inches DBH.

Sawtimber - Trees with commercial harvest value, generally 10" DBH or larger.

Second growth - A forest of trees that develops after harvest of the original stand (which often was "old growth"). These stands are generally between 40 and 90 years of age.

Seedling - Any tree, either natural or planted by man that is less than 2" DBH.

Site index - A measure of forest site quality, based on the height (in feet) that dominant trees reach at a given age. It is generally expressed in 50 or 100-year site index. Site index is an indication of the productivity of a forested site. Site indexes are often grouped in "site classes", which give a numerical rating of a site's productivity, generally from 1 to 7, 1 being the highest productivity and 7 the lowest.

Slash - Treetops, branches, bark, and other debris left after a forest operation.

Slash treatment – reducing the amount of slash left on the ground by mechanical means, piling and burning, full length harvesting or broadcast burning.

Stagnation - The condition in a stand where tree growth occurs at a very slow rate due to close tree spacing (overstocking) and high competition.

Stand - A group of trees in one geographic area that is uniform enough in species composition, age, and arrangement to be distinguishable from adjoining areas of forest.

Stand density - A relative measure of the amount of tree stocking on an area compared with other areas.

Stumpage - The value of timber as it stands uncut in the woods.

Suppressed - a tree whose crown is under the crowns of larger trees and does not get enough sunlight to grow rapidly. Usually a slow growing tree.

Thinning - Cutting in a stand to increase the growth rate of the leave trees. It can be precommercial or commercial depending upon whether the trees removed during thinning have a commercial value.

Timber - A term loosely applied to forest stands or their products; also wood in forms suitable for heavy construction (beams, ships, bridges).

Understory - That portion of the trees or other vegetation in a forest stand below the canopy.

Uneven-aged - Term applied to a stand in which there are considerable differences in the age of the trees present.

MERA SOILS INFORMATION

6F – Anatone Klicker complex, 40 – 65% slopes

These soils are found in irregularly shaped areas on mountainous upland at elevations from about 2,500 to 5,000 feet. The Anatone and Klicker soils are so intricately intertwined that it is not practical to map them separately. The Anatone soil is a grassland soil while the Klicker soil is a forest soil, so there will be “islands” of trees in the grassland. The average annual precipitation is about 17 to 30 inches per year with an average frost-free period of 100 to 120 days.

The Anatone soils are shallow and well drained. It is derived basalt with some windblown dust or ash in the surface layer. Depth to fractured basalt is from 10 to 20 inches with the soil layer being quite stony. Effective rooting depth is from 10 to 20 inches. Runoff is rapid and water erosion hazard is high.

The Klicker “islands” have relatively deep, well-drained soils. It too is derived mainly from basalt. Depth to basalt is from 20 to 40 inches, and that is the effective rooting depth. Runoff tends to be rapid, and the risk of soil erosion is high.

As a whole, this soil unit is used as rangeland, but is also used for some timber production and wildlife habitat. The native vegetation for the Anatone soils is mainly bluebunch wheatgrass, Idaho fescue and stiff sagebrush. The native vegetation for the Klicker soils is mainly ponderosa pine, elk sedge and pinegrass. Trees will grow at a rate of about 200 board feet per acre per year on the average.

Management for this soil unit should take into consideration the erosion risk. Well-designed and drained road systems will help to reduce erosion. Plant competition will often delay regeneration of ponderosa pine following logging or death of trees, but a fully stocked stand of trees will eventually become established.

11C – Cowsly silt loam, 2 – 12% slopes

This deep, moderately well drained soil is on mountainous uplands. It formed in loess (wind carried and deposited soils) and volcanic ash overlying native soils formed from volcanic tuff and basalt. The native vegetation is mainly coniferous forest with an understory of grasses, forbs and shrubs. It is found at elevations from 3,500 to 5,000 feet and has an average annual precipitation of 17 to 30 inches. The climate provides an average annual air temperature of 43-46° F and an average frost free period of 60 to 100 days. Depth to bedrock is 60 inches+. Permeability is moderate in the top layers and slow in the lower layers. Runoff is slow to medium, and the potential hazard of water erosion is slight to moderate. Effective rooting depth is 20 to 60 inches.

These soils are mainly used for timber production, but are well suited to woodland grazing and wildlife habitat. The site index for ponderosa pine ranges from 99 to 112 on a site index of 105. These soils are best suited to growing ponderosa pine and Douglas-fir. Mean annual growth can be 400+ board feet per acre per year based on a 120-year rotation. A managed stand with several age classes of trees can produce 300 to 350 board feet per acre per year.

Some factors to keep in mind in producing and harvesting timber are regeneration and windthrow. Conventional methods of harvest can generally be used, and roads and landings can be protected from erosion by logging when dry or frozen, and waterbarring and grass seeding following logging. Plant competition can delay natural regeneration. Plant competition usually does not prevent eventual development of a fully stocked stand of trees providing a seed source is available. In droughty areas planted seedling survival can be improved by providing shade for the seedlings. Trees are commonly subject to windthrow during periods when the soil is excessively wet and winds are strong.

The potential understory is mainly elk sedge, pinegrass and Idaho fescue. The density of the tree stand limits the production of vegetation suitable for grazing. If overgrazed, the proportion of preferred forage plants decreases quickly and it is difficult to restore the proportion because of the aggressiveness of less desirable forage plants. Grazing should be managed to keep the desired balance of preferred forage plants in the stand. Grazing should be delayed until the soils have dried and firmed up in the spring to avoid compaction and the more desirable plants have achieved sufficient growth to withstand grazing pressure.

17E - Gwinly very cobbly silt loam, 20 to 40% slopes

This shallow, well-drained soil is most often found on ridgetops, but in some places is on south and west facing side slopes in uplands. It is formed by a mix of transported and residual material mainly from basalt and volcanic tuff. There is some windblown soil in the surface layer. It is found at elevations from 2,300 to 4,600 feet. Average annual precipitation is 16 to 24 inches, the average temperature is 45 to 50°F, and has 100 to 150 frost free days.

Permeability is slow, and available water is only 1 to 2.5 inches. Water supplying capacity is 10 to 20 inches and effective rooting depth is 10 to 20 inches. Runoff is slow to medium and erosion hazard is moderate to high. This soil type is usually used for rangeland and wildlife habitat.

The potential native plant community is bluebunch wheatgrass, Idaho fescue and Sandberg bluegrass. If the range is overgrazed, the proportion of preferred forage plants decreases and less preferred forage plants increases. Chances of reseeding this soil type are low.

These soils respond well to proper grazing use. Deferred grazing, rotation grazing and aerial spraying for brush control work well. Livestock should be managed to protect the soil from erosion.

18F - Gwinly - Rockly complex, 40 to 70% slopes

This soils unit is on south and west facing side slopes in uplands. It is found at elevations from 2,300 to 4,600 feet. Average annual precipitation is 16 to 24 inches, the average temperature is 45 to 50°F, and has 100 to 150 frost free days.

This soils unit is about 50% Gwinly very cobbly silt loam and 40% Rockly extremely stony loam. The soils components are so intermingled it is not practical to map them separately. Also included in this unit are small areas of rock outcrop and Watama, Ukiah, and Starkey soils.

The Gwinly soils are shallow and well drained. It is form mainly from basalt and volcanic tuff, with some windblown soils in the surface layer. Permeability is slow, and available water is only 1 to 2.5 inches. Water supplying capacity is 5 to 10 inches and effective rooting depth is 10 to 20 inches. Runoff is slow to rapid and erosion hazard is slight to high.

The Rockly soil is very shallow and well drained. It is formed mainly from basalt, with some windblown soil in the surface layers. Permeability is moderate with an available water capacity of about 0.3 to 1.0 inch. Water supplying capacity is 5 to 10 inches. Runoff is slow to rapid, and the hazard of water erosion is slight to high. Both the Gwinly and the Rockly soils are used as rangeland and for wildlife habitat.

The potential native plant community is bluebunch wheatgrass, Idaho fescue and Sandberg bluegrass. If the range is overgrazed, the proportion of preferred forage plants decreases and

less preferred forage plants increases. Chances of reseeding this soil type are low due to the cobbly and stony surface and the steepness of slope.

These soils respond well to proper grazing use. Deferred grazing and rotation grazing work well. Livestock should be managed to protect the soil from erosion.

19E – Hall Ranch stony loam, 2 – 35% slopes

This moderately deep well drained soil is on mountainous uplands. It was formed by overland flow and residual soils with some windblown soil and volcanic ash in the surface layer. The native vegetation would be mainly coniferous forest with an understory of grasses, forbs, and shrubs. It is found at elevations from 3,000 to 4,000 feet. Average annual precipitation is 18 to 30 inches, average annual air temperature is 40 to 45°F, and the average frost free period is 50 to 100 days.

Permeability is moderate. Water supplying capacity is 8 to 16 inches. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is moderate.

These soils are used mainly for timber production. They are also used for woodland grazing and wildlife. Ponderosa pine is the favored tree, with a site index of 85 to 95 on a site index of 90. The potential production is almost 300 board feet per acre per year on a well stocked, managed stand. Conventional methods of ground skidding are suitable for harvest of timber. Roads and landings can be protected from erosion by waterbarring and grass seeding following harvest.

Plant competition delays but does not prevent natural regeneration. In areas of south facing slopes that are droughty in the summer, seedling survival can be improved by providing shade for the seedlings.

The potential native understory plant community on these soils is mainly bluebunch wheatgrass and Idaho fescue. The density of the tree stand eventually limits the production of vegetation for livestock grazing. Livestock grazing should be managed so that the desired balance of preferred forage species is maintained in the plant community.

19F – Hall Ranch stony loam, 35-65% north slopes

This moderately deep well drained soil is on mountainous uplands. It was formed by overland flow and residual soils with some windblown soil and volcanic ash in the surface layer. The native vegetation would be mainly coniferous forest with an understory of grasses, forbs, and shrubs. It is found at elevations from 3,000 to 5,000 feet. Average annual precipitation is 18 to 30 inches, average annual air temperature is 40 to 45°F, and the average frost free period is 50 to 100 days.

Permeability is moderate. Water supplying capacity is 8 to 16 inches. Effective rooting depth is 20 to 40 inches. Runoff is rapid, and the hazard of water erosion is high.

These soils are used mainly for timber production. They are also used for wildlife habitat. Ponderosa pine and Douglas-fir are the favored trees, with a site index for ponderosa pine of 85 to 95 on a site index of 90. The potential production is almost 300 board feet per acre per year on a well stocked, managed stand. High lead logging is the preferred method as it is more efficient and is less damaging to the soil surface. Conventional methods of ground skidding will work but need to be used carefully. Roads and landings can be protected from erosion by waterbarring and grass seeding following harvest.

Plant competition delays but does not prevent natural regeneration. The potential native understory plant community on these soils is mainly elk sedge, pinegrass and Idaho fescue. The density of the tree stand eventually limits the production of vegetation for livestock grazing. Livestock grazing should be managed so that the desired balance of preferred forage species is maintained in the plant community.

33E - Klicker stony silt loam, 2-40% slopes

This is a moderately deep, well-drained soil on mountainous uplands. It is mainly formed of basalt, but has some loess (wind carried and deposited soils) and volcanic ash in the surface layer. The native vegetation is mainly coniferous forest with an understory of bunchgrasses, rhizomatous grasses, annual forbs and perennial shrubs. It is found at elevations from 2,500 to 5,000 feet and has an average annual precipitation of 17 to 30 inches. The climate provides an average annual air temperature of 43-45° F and an average frost free period of 100 to 120 days. Depth to bedrock ranges from 20 to 40 inches. Runoff is slow to rapid, and the potential hazard of water erosion is slight to high depending on associated vegetation.

These soils are mainly used for timber production, but are well suited to woodland grazing and wildlife habitat. The site index for ponderosa pine ranges from 71 to 80. These soils are best suited to growing ponderosa pine and Douglas-fir. Mean annual growth is about 200 board feet per acre per year based on a 160 year rotation. A managed stand with several age classes of trees can produce 300 to 350 board feet per acre per year.

Some factors to keep in mind in producing and harvesting timber are regeneration and windthrow. Conventional methods of harvest can generally be used, and roads and landings can be protected from erosion by waterbarring and seeding. Plant competition, especially from rhizomatous elk sedge and pinegrass can delay natural regeneration. It usually does not prevent eventual development of a fully stocked stand of trees providing a seed source is available. In droughty areas planted seedling survival can be improved by providing shade for the seedlings. Trees are commonly subject to windthrow during periods when the soil is excessively wet and winds are strong.

The potential understory is mainly elk sedge, pinegrass, bluebunch wheatgrass, and Idaho fescue. The density of the tree stand limits the production of vegetation suitable for grazing. If overgrazed, the proportion of preferred forage plants decreases quickly and it is difficult to restore the proportion because of the aggressiveness of less desirable forage plants. Grazing should be managed to keep the desired balance of preferred forage plants in the stand. Grazing

should be delayed until the soils have dried and firmed up in the spring and the more desirable plants have achieved sufficient growth to withstand grazing pressure.

35E - Klicker - Anatone complex, 5 - 40% slopes

This mapping unit is in irregularly shaped areas on mountainous uplands. The native vegetation is mainly ponderosa pine and bunchgrasses. It is found at elevations from 2,500 to 5,000 feet and has an average annual precipitation of 17 to 30 inches. The climate provides an average annual air temperature of 43-45^o F and an average frost free period of 100 to 120 days.

The unit is about 50% Klicker stony silt loam and about 40% Anatone extremely stony loam. Included in this soils unit are small areas of Bocker, Cowsly, Hall Ranch and Olot soils and rock outcrop.

The Klicker soil is moderately deep and well drained. It is formed from basalt with some windblown and ash soils in the surface layers. Permeability is moderately slow. Available water capacity is about 4.5 to 6 inches and water supplying capacity is 8 to 16 inches. Effective rooting depth is 20 to 40 inches. Runoff is medium to rapid, and the hazard of water erosion is slight to high.

The Anatone soil is shallow and well drained. It is derived mainly from basalt with some windblown and ash soils in the surface layer. Permeability is moderate. Available water capacity is about 1 to 2.5 inches and water supplying capacity is 5 to 10 inches. Effective rooting depth is 10 to 20 inches, runoff is medium to rapid, and the hazard of water erosion is slight to high.

These soils are mainly used for timber production, but are well suited to woodland grazing and wildlife habitat. The Klicker soil is suited to the production of ponderosa pine; however, the trees commonly are widely scattered or are only in small stands in areas where the soil is deep enough to support them. Management is therefore limited by the nature of the stand. On the basis of a site index for ponderosa pine of 76 the mean annual growth is about 200 board feet per acre per year based on a 160 year rotation. A managed stand with several age classes of trees can produce up to 300 board feet per acre per year.

Some factors to keep in mind in producing and harvesting timber are regeneration and windthrow. Reforestation must be carefully managed to reduce competition from undesirable understory plants. The low available water capacity generally influences seedling survival in areas where understory plants are numerous. Trees are commonly subject to windthrow during periods when the soil is excessively wet and winds are strong. Roads and landings can be protected from erosion by constructing dips or waterbarring and seeding

The potential understory on the Klicker soil is mainly elk sedge and pinegrass. The density of the tree stand limits the production of vegetation suitable for grazing. The potential plant community on the Anatone soil is mainly bluebunch wheatgrass, Idaho fescue and Sandberg bluegrass. Stones on the surface, shallow rooting depth and steepness of slope limit the production of vegetation suitable for livestock grazing. Grazing should be delayed until the soils

have dried and firmed up in the spring and the more desirable plants have achieved sufficient growth to withstand grazing pressure.

40C - Lookingglass very stony silt loam, 2 to 20% slopes

This deep moderately drained soil is found on uplands. It was formed from windblown soils and volcanic ash overlying older residual soils formed from volcanic tuff and basalt. Native vegetation is mainly coniferous forest and an understory of grasses, forbs and shrubs. It is found at elevations of 2,700 to 3,700 feet, has an average annual precipitation of 17 to 30 inches, and average annual air temperature of 45 to 48⁰ F and a frost free period of 110 to 140 days.

Permeability is moderate to 21 inches and very slow below that depth. Water supplying capacity is 14 to 18 inches, and effective rooting depth is 20 to 40 inches. Runoff is slow to medium and the hazard of water erosion is slight to moderate. Water is perched above the clay subsoil in winter and spring.

These soils are usually used for timber production, woodland grazing and wildlife. It is best suited to growing ponderosa pine. The site index for ponderosa pine is 85 to 90 based on 100 years. The soils are capable of producing 300 board feet per acre per year on the average. Over 400 board feet per acre per year can be produced on a fully stocked sawlog size stand. Conventional ground skidding methods of harvest are suitable. The soils can be compacted when wet, so harvest should be restricted to frozen or dry conditions. Roads for year around use need heavy base rock.

Plant competition delays natural regeneration of trees, but does not prevent the eventual development of a fully stocked stand. Seedling survival on south facing droughty slopes can be improved by providing shade for seedlings. Trees are commonly subject to windthrow when the soils are excessively wet and the winds strong.

The potential understory plant community is mainly elk sedge, pinegrass, bluebunch wheatgrass and Idaho fescue. The production of forage is limited by tree stand density. Livestock grazing should be managed to that the desired balance of preferred species is maintained in the plant community.

44C – Olot silt loam, 2-12% slopes

This moderately deep, well-drained soil is found on ridgetops on mountainous uplands. It was formed by volcanic ash and wind carried and deposited soils over a native soil formed from dominantly by basalt. The native vegetation is mainly coniferous forest with an understory of shrubs, forbs and grasses. It is found at elevations of 3,000 to 5,000 feet. The climate provides an average annual precipitation of 18 to 35 inches, an average annual air temperature of 42 to 46° F, and an average frost-free period of 30 to 90 days.

The soil has a moderate permeability to 19” and slow permeability below that depth. Rooting depth is 20 to 40 inches. Water supplying capacity is 13 to 17”. Runoff is slow to medium, and

the hazard of water erosion is slight to moderate. These soils are usually used for timber production and for wildlife habitat. Its use for grazing is limited to a short time following harvest of timber on grasses seeded on open, disturbed areas.

These soils are well suited to the production of timber and wildlife habitat. It is well suited to growing Douglas-fir and western larch. The site index for Douglas-fir ranges from 70 to 75 on a 50 year basis. The potential average annual production is 375 board feet per acre per year. A managed forest with several age classes can produce more board feet per acre per year.

The main concern in producing and harvesting timber is to disturb the ashy surface layer as little as possible. The ashy soils can hold and easily give up to vegetation high amounts of moisture. This is what provides the high level of growth as the soil is not particularly high in nutrient values. During wet periods ground harvest can easily displace the soil causing deep ruts and/or skid trails. During dry periods the soil is also easily displaced and the dust can get very deep.

Conventional methods of harvest can be used. Roads and landings can be protected from erosion by proper design including shallow grades, water bars, well designed and placed culverts and erosion seeding. Natural regeneration is often delayed due to native plant competition, but fully stocked normal stands can be expected given time. Windthrow can be a problem when the soils are wet.

55D – Rockly extremely stony loam, 2 to 20% slopes

This very shallow, well-drained soil is found on ridge tops and on south and west facing slopes of uplands. It was formed mainly from basalt. Some loess and volcanic ash is found in the surface layer. Native vegetation is mainly bunchgrasses, annual forbs and sagebrush. It is found at elevations of 2,600 to 4,600 feet.

Permeability is moderately slow. Water supplying capacity is 1 to 3 inches, and effective rooting depth is 5 to 10 inches. Runoff is slow to medium and the hazard of water erosion is slight to moderate.

These soils are used mainly for rangeland and wildlife habitat. In good condition, the native vegetation would be bluebunch wheatgrass, Sandberg bluegrass and stiff sagebrush. Usually it does not do well with range seeding. Good grazing management is the best way to keep preferred forage species and production high. Livestock grazing should be managed to that the desired balance of preferred species is maintained in the plant community. The production of forage suitable for grazing is limited by the very shallow depth to bedrock, droughtiness and stoniness.

58E – Starkey very stony silt loam, 2 – 35% slopes

This shallow well-drained soil is found on uplands. It was formed from residual soils or soils carried overland mainly from volcanic tuff and basalt. Native vegetation is mainly bunchgrasses

and annual forbs. It is found at elevations of 2,800 to 4,000 feet. Included in this unit are small areas of Gwinly, Ukiah and McMurdie soils.

Permeability is slow due to the clay in its makeup. Water supplying capacity is 4 to 9 inches, and effective rooting depth is 10 to 20 inches. Runoff is slow to rapid and the hazard of water erosion is slight to high.

These soils are used mainly for rangeland and wildlife habitat. In good condition, the native vegetation would be Idaho fescue, bluebunch wheatgrass and Sandberg bluegrass. The production of vegetation suitable to livestock grazing is limited by stones on the surface and low available water capacity. Usually it does not do well with range seeding. Good grazing management is the best way to keep preferred forage species and production high. Livestock grazing should be managed to that the desired balance of preferred species is maintained in the plant community.

59E - Tolo silt loam, 12-35% slopes

This deep, well drained soil is found on mountainous uplands. It was formed by volcanic ash and wind carried and deposited soils over a native soil formed from wind carried and deposited soils and basalt. The native vegetation is mainly coniferous forest with an understory of shrubs, forbs and grasses. It is found at elevations of 3,000 to 4,200 feet. The climate provides an average annual precipitation of 18 to 35 inches, an average annual air temperature of 42 to 45^o F, and an average frost-free period of 50 to 100 days.

The soil extends to 65 inches or more with a moderate permeability to 33". Rooting depth is to 60 inches or more. Runoff is medium to rapid, and the hazard of water erosion is moderate to high. These soils are usually used for timber production and are used for wildlife habitat. Its use for grazing is limited to a short time following harvest of timber on grasses seeding on open, disturbed areas.

These soils are well suited to the production of Douglas-fir and western larch. White fir and Englemann spruce are other common species on these soil types. The site index for Douglas-fir ranges from 75 to 85 on a 50 year basis. The potential average annual production based on a 110 year rotation is 460 board feet per acre per year. A managed forest with several age classes can produce 500 to 600 board feet per acre per year.

The main concern in producing and harvesting timber is to disturb the ashy surface layer as little as possible. The ashy soils can hold and easily give up to vegetation high amounts of moisture. This is what provides the high level of growth, as the soil is not particularly high in nutrient values. During wet periods ground harvest can easily displace the soil causing deep ruts and/or skid trails. During dry periods the soil is also easily displaced and the dust can get very deep.

If exposed, this soil is very prone to rill and gully erosion. Roads and landings can be protected from erosion by proper design including shallow grades, water bars, well designed and placed culverts and erosion seeding. Natural regeneration is often delayed due to native plant

competition, but fully stocked normal stands can be expected given time. Ground harvesting methods can be used if used with care on these soils.

70B – Wilkens silt loam, 1-5% slopes

This deep, somewhat poorly drained soil is in mountain meadows on uplands. It was formed by volcanic ash and wind carried soil over a native soil formed from basalt. The native vegetation is mainly grasses, sedges and annual forbs. It is found at elevations of 3,200 to 5,000 feet. The average annual precipitation is about 17 to 32 inches, an average annual air temperature of 41 to 45° F, and an average frost-free period of 50 to 100 days.

The soil extends to 60 inches or more with a moderate permeability to 26". Rooting depth is to 60 inches or more. Water supplying capacity is about 10 to 12 inches. Runoff is slow, and the hazard of water erosion is slight. These soils are usually used for rangeland. It is also used as wildlife habitat.

If the range vegetation is good or excellent condition, the native grasses are mainly tufted hairgrass, redtop, and bluegrass. Sedges are also important plants in this unit. If the range condition is seriously deteriorated seeding is needed. Plants that tolerate wetness should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock. This unit is poorly suited for recreational development.

72C - Wolot silt loam, 2 – 12% slopes

This deep well drained soil is on uplands. It formed in volcanic ash deposited over a soil that formed in native soils derived mainly from basalt and windblown material. The vegetation is mainly coniferous forest and an understory of grasses, forbs and shrubs. Elevation is 2,700 to 3,900 feet. The average annual precipitation is 18 to 25 inches. The average annual air temperature is 45 to 48 degrees F and the average frost free period is 100 to 150 days.

The soil depth is about 60 inches and permeability is moderate to a depth of 29 inches and moderately slow below this depth. Available water capacity is about 11 to 24 inches with a water supplying capacity of 13 to 25 inches. Effective rooting depth is 60 inches or more. Runoff is low to medium and the hazard of water erosion is slight to moderate.

This unit is used mainly for timber production and wildlife habitat. It also could be used for cultivated crops. It is well suited to the production of Douglas-fir and ponderosa pine. The site index for Douglas-fir ranges from 71 to 80. The site index for ponderosa pine is 100 to 110. On the basis of a site index of 75 the potential production per acre of wood fiber is 50 thousand board feet per acre from an even-aged fully stocked stand at 120 years.

The main concern in producing and harvesting timber is to disturb the ashy soil layer as little as possible. This layer has exceptionally high available water capacity and nutrients important to plant growth. To attain little disturbance harvesting when the soil is neither too wet nor too dry is essential. Disturbed soil is to rills and gully erosion and to sloughing.

Roads and landings can be protected from erosion by proper drainage and seeding grasses. Plant competition delays regeneration of trees but does not prevent eventual development of a fully stocked normal stand.

This unit is well suited to recreational development but limited during dry seasons due to dustiness. Recreation areas can be protected from dry season dust erosion by providing and maintaining plant cover.

WOODLAND OWNER ASSISTANCE

TECHNICAL ASSISTANCE

Forest landowners wanting technical assistance or information regarding management or acquisition of forest resources have several sources to draw from. Some information is available free of charge, and other information is available for pay. It is important to understand what kinds of services are available as well who will benefit from the offered service. An important question to ask is whether the person offering the service works for you, in your interest, or for someone else that would benefit from offering you advice. There is often an important distinction to be made whether you obtain information from professional resource managers (foresters, wildlife biologists, fisheries biologists, hydrologists, engineers, etc.) or from someone in the business of harvesting the resource (logging contractors, livestock operators, guides, etc.). Following are some sources of technical assistance and some information about the sources.

Professional Consulting Foresters

Consulting foresters are self-employed individuals with education (at least a Bachelor's degree in Forestry) and experience in Forestry. They are available to work for you for a fee, usually based on an hourly rate but sometimes on a percentage of harvest rates. A consulting forester works for you in your best interest. A consulting forester does not represent a mill, logging contractor, timber broker or anyone else that would benefit from the sale of your timber. A consulting forester represents you, and you pay him for his advice and work.

Consulting foresters can advise you on the condition of your timber and other forest resources such as water, forage, wildlife, understory vegetation, and the like. They advise you of all facets of a timber sale, including which trees to harvest, how much to harvest, the logging systems best suited for your land, markets and best times to harvest. The forester should be able to answer any questions you have about forest resource management, or find a reliable source to answer your questions. A consulting forester often makes you enough extra money to pay for his services.

A forester may not be able to answer all of your questions. There are usually other professionals in forested resource management available to help you in other areas of concern such as wildlife or forage management, or in specialty areas such as forest genetics. These individuals work on a consultation basis the same as described for foresters in the above paragraphs.

To find a certified forestry consultant go to: www.forestry.org or www.acf-foresters.org .

Oregon Department of Forestry

The Oregon Department of Forestry has foresters, hydrologists and other professional resource managers available to provide information for you. They have many helpful pamphlets and other sources of information as well providing on the ground advice. The advice and information is available free of charge. They are a good source of information but are limited in the amount of time they can spend with individuals. A Service Forester is available for management information and to administer federal subsidy programs such as SIP (Stewardship Incentive Program), FLEP (Forest Land Environmental Programs), CRP (Conservation Reserve Program) and others. Specials programs become available from time to time and they can advise you about them.

Service Foresters are helpful in initial assessments of forest resource needs and opportunities. They are knowledgeable about local forest products markets and logging, thinning or planting contractors. Advice on forest taxes and laws concerning harvest of your timber is available through them.

The State FPO (Forest Practices Officer) can also be of assistance to you. The FPO can advise you about harvesting rules, notifications of operation and harvesting in stream side and other sensitive areas. The FPO's main job is to see that all laws regarding the harvest of timber, the Oregon Forest Practices Act, are followed.

In Union County the Service Forester or FPO can be reached at:

State Forestry Office
611 Twentieth Street
La Grande, OR 97850
(541) 963-3168

Union County Extension Service

The Union County Extension Service is part of Oregon State University. The Extension Forester provides educational programs to private landowners. The Extension Forester also will provide many educational materials, or help you to find what you need. Advice is available free of

charge. He will also provide you with a monthly newsletter of interest to most landowners. The Extension Forester can be reached at:

Union County Extension Office
10507 N. McAlister Lane
Island City, OR 97850
541-963-1061

Natural Resource Conservation Service

Another source of technical information about forest soils and conservation practices is the Natural Resource Conservation Service. This is a federal agency that works with natural resource owners. They can provide advice on many subjects including grazing, fencing, streamside management, planting grass or other conservation plantings, spring development, bridge and culvert design and other areas. They too help administer federal subsidy programs that provide cost share money for conservation plantings, spring developments, wildlife planting and many other practices. The amount of funding and cost shares is continually changing, so it is best to check with them whenever specific information is needed.

Natural Resource Conservation Service
AG Service Center
1901 Adams Ave.
La Grande, OR 97850
(541) 963-4231

Financial Assistance

Woodland owners can often obtain cost share assistance for many conservation practices. Cost shares are not provided for commercial operations such as harvesting timber, but are available for other activities. These activities include but are not limited to tree planting, precommercial thinning, slash piling, erosion control, riparian planting and other conservation practices. The Farm Services Agency is responsible for disbursing funds for programs you have signed up for, while Oregon State Forestry or the Natural Resource Conservation Service assists in planning and assuring that the work is done correctly.

Farm Service Agency
AG Service Center
1901 Adams Avenue
La Grande, OR 97850
(541) 963-4231

There are many different types of programs available, and the cost share programs change almost on a yearly basis. Asking questions of several of the technical assistance people will help to provide you with the wide array of programs available in a given year.

Fish, Wildlife and Watershed Information

There are two major places to obtain information and advice about fish and wildlife matters. The Oregon Department of Fish and Wildlife will provide personal information as well as many pamphlets and bulletins regarding management of fish and wildlife on your property. The Grand Ronde Model Watershed Program and associated programs can provide advice as well as financial support for water related programs. The offices in La Grande are:

OR Department of Fish and Wildlife
107 20th Street
La Grande, OR 97850
(541) 963-2138

Grande Ronde Model Watershed
10901 Island Avenue
La Grande, OR 97850
(541) 962-6590

OREGON'S FOREST PRACTICES ACT

The Oregon Forest Practices Act establishes standards that encourage and enhance the growing and harvesting of trees while maintaining the environmental quality of the forest. Major components addressed are the trees, soil, air, water resources and wildlife and aquatic habitats. Riparian areas next to streams, lakes and estuaries have been given special protection using BMP's (Best Management Practices) developed through extensive field studies. These areas play an important role in protecting water quality and fish populations. Wildlife often finds all of the necessities of life in these areas. Wetlands and the land adjacent to them are also provided special protection to maintain the water quality and quantity and the fish and wildlife values this resource contributes to the forest environment.

The Act regulates activities during precommercial and commercial operations on all private and state forestlands. It provides for this regulation of forest operations to be under the Oregon Department of Forestry coordination. Through agreements, federal forestland agencies meet or exceed these practices on the lands they manage.

Forest Practices Rules require the landowner, timber owner or operator to file a written notification with the State Forester through its local District or Unit offices **at least 15 days** before starting an operation. Operations notification forms are available for this. Maps of the operation are a part of the notification. This advance notice gives state foresters the opportunity to review the work site, identify potential problem areas and help landowners and operators avoid problems. If there are no sensitive features in the proposed harvest area, the 15-day waiting period might be waived at the discretion of the State Forester. If the operation encompasses a sensitive area such as a stream or area with special biological characteristics an

additional written plan is required and then a 15-day waiting period is required before starting your operation. If some resources such as eagle nest or roost is near your property you will be notified if you need a written plan and the time periods in which harvesting would be allowed.

Copies of the Forest Practices Act and Regulations are available at all Oregon Department of Forestry offices. Your local office is located at 611 Twentieth Street in La Grande. The phone number is 541-963-3168.

Notification of Operations on forestlands is required when:

1. Harvesting of forest tree species
2. Road construction or reconstruction
3. Site preparation for reforestation
4. Slash disposal or treatment
5. Chemical treatment
6. Precommercial thinning
7. Clearing forest land for conversion to any non-forest use
8. Commercial cutting of firewood
9. Surface mining.

STATE OF OREGON PERMIT AND NOTIFICATION REQUIREMENTS

Oregon Revised Statute, ORS 477.625 states that every person conducting an operation using power-driven machinery shall first obtain from the State Forester a written permit for the calendar year. "Operation" means any industrial activity, development, and improvement on or within one-eighth mile of forest land. "Forest land" means any forested land, woodland, brushland, cutover land, and land clearing which during any time of the year contains enough flammable forest growth, slashing, or debris to constitute a fire hazard.

Operations requiring permits are:

1. Logging
2. Sawmilling
3. Clearing of land on rights-of-way
4. Thinning and/or pruning
5. Well drilling
6. Blasting
7. All other uses of fire in any form

Oregon Revised Statute, ORS 527.670 states that an operator, timber-owner, or landowner, before commencing an operation, shall notify the State Forester. "Operation" means any commercial activity relating to the growing, harvesting, or processing of forest tree species. In addition, this notification will be required at least 15 days prior to commencement of the operation.

Operations requiring notifications are:

1. The harvesting of forest crops
2. Road construction or reconstruction of existing roads.
3. Site preparation
4. Application of insecticides, herbicides, rodenticides and fertilizers
5. Clearing forest land for change to non-forest use
6. Treatment of slashing after completion of operations
7. Pre-commercial thinning or release

Both the "Permit to Operate Power-Driven Machinery" and the "Notification of Operation" can be filled out on the same permit form at offices of the State Forester. The office where these permits may be obtained is:

Oregon Department of Forestry
611 Twentieth
La Grande, OR 97850
(541) 963 3168

FIRE PREVENTION AGREEMENT

Between

Oregon Department of Forestry & Union County- Mt. Emily Recreation Area

July 23, 2009

Introduction

The Mt. Emily Recreation Area (MERA) is owned by Union County and is managed for multiple uses including Off Highway Vehicle OHV usage such as ATVs and motorcycles. MERA is protected from wild land fire by the Northeast Oregon District of the Oregon Department of Forestry (ODF). The legal authority for imposing fire prevention measures lies with ODF.

Authority

The authority to regulate public use on lands protected from fire by the Oregon Department of Forestry falls under the requirements developed in Oregon Revised Statutes, Chapter 477 (ORS 477) and Oregon Administrative Rule, Chapter 629 (OAR 629). These are the same statutes and rules that other forest landowners and the general public are required to follow during fire season and public use restrictions such as Regulated Use Closure.

Background

When ODF declares fire season there are no restrictions on OHV or other motorized use of MERA. However under Regulated Use Closure there are two restrictions that apply to motorized and OHV use. These restrictions state:

- Off-road use of any motorized vehicles, including motorcycles and all terrain vehicles (ATV's), is prohibited, except on improved roads or for the commercial culture and harvest of agricultural crops. An improved road is defined as a road that is maintained for passenger car use and is fully clear of any flammable material, including grass
- Possession of the following fire fighting equipment is required while traveling, except on state and county roads: one axe, one shovel, and one gallon of water or one operational 2½ pound or larger fire extinguisher.

At the request and acceptance of an increased potential of fire by Union County, ODF has been asked to review the Regulated Use Closure restrictions to determine what could be done to increase the time period of OHV use on MERA.

Prevention Requirements

In light of the extra measures provided by the County to educate, regulate and enforce fire prevention regulation with MERA users, ODF- NEO District has reviewed the restrictions and agrees to allow OHV (ATVs and motorcycles) use under Regulated Use Closure until an extreme fire danger level is reached with the following conditions:

1. OHV use would be limited to designated roads and trails clear of flammable debris. The County would post and actively enforce usage of only open trails meeting these criteria.
2. ATVs and motorcycles would not be required to carry a shovel or a fire extinguisher. The County would inspect and enforce requirements for adequate exhaust systems and spark arrestors on ATVs and motorcycles using MERA.
3. All OHV use on MERA would be suspended when ODF- Northeast Oregon District declares extreme fire danger. The only exception to this total suspension will be motorized use including OHVs of the Old Mt Emily Road. It will be necessary for any vehicles or OHVs (excluding motorcycles) traveling the Old Mt. Emily Road under extreme fire danger to comply with the standard tool requirements of carrying fire fighting equipment of one shovel and one operational 2½ pound or larger fire extinguisher. The County would inform MERA users and enforce the suspension under extreme fire danger. It will be ODF's responsibility to notify the County when conditions reach extreme fire danger and suspension is required. ODF also would notify the County when

conditions changed and usage could resume. It will be the County's responsibility to inform MERA users when the suspension is in effect.

4. Other Regulated Use Closure requirements prohibiting smoking while travelling in vehicles (including ATVs and motorcycles) and prohibiting camp fires (including MERA campground(s)) would be adhered to and actively publicized, regulated and enforced by the County. **These requirements would go into effect when Regulated Use Closure is declared.**

5. As a condition of this waiver the County will provide 50 person hours of fire prevention education and enforcement of MERA users starting when **ODF enacts Regulated Use Closure** AND strict enforcement of the use suspension under extreme fire danger. The County will be responsible for advertising the use suspension under extreme fire danger in local newspapers and will post these fire prevention requirements (use restrictions, no campfires, no smoking) at key points in MERA.

Agreement

It is mutually agreed that the items identified above will be adhered to by both parties.

John Buckman
State Forester Representative

Date

Union County Commissioner

Date

MAPS