CHAPTER 6. RECOMMENDATIONS FOR BLM

Recommendations are provided here to identify actions and management decisions on the part of BLM that might improve watershed health in the Trask River watershed. This material was prepared jointly by E&S and BLM personnel.

6.1 AQUATIC

6.1.1 EROSION

1. Where appropriate, restore porosity with subsoiler or excavator in compacted areas such as legacy roads and landings.
2. Further define areas that are sensitive or too fragile to tolerate standard timber management during timber management activity planning and project development. Update the current District's Timber Production Capability Classification System.
3. Implement the BLM road and culvert survey recommendations in the Elkhorn and the Middle Fork of the North Fork of the Trask River subwatersheds. Complete a similar type of survey for the rest of the BLM land in the Trask River watershed.
4. Implement Best Management Practices as described in the Salem RMP for reducing sediment and erosion for all relevant land management practices.

6.1.2 STREAM CHANNEL

1. Elkhorn Creek subwatershed is the highest priority BLM area in the Trask River watershed for in-stream and riparian restoration work. Recommended projects in this area include releasing conifers and, where appropriate, planting riparian species in the riparian zone. Another priority project is to remove the section of road 2-5-10 that is directly adjacent to, and adversely affecting Cruiser Creek. This would be accomplished by redistributing the rip-rap, using an excavator, or by using other methods to restore connections with the flood plain and increase sinuosity.
2. The North Fork of the Trask subwatershed is the second highest priority for in-stream and riparian restoration work. In-stream work could include:
   - Increasing habitat complexity by installing instream structures where LWD is lacking. Mimic natural stream patterns as much as possible. Place key LWD pieces in natural deposition points, such as often occur at tributary junctions and below frequent debris flow sites in medium- to low-gradient streams.
   - Creating woody debris jams to mimic windthrow in intermittent and small perennial streams.
   - Planting native tree or shrub species in riparian areas to increase shading and/or long term LWD recruitment; this may require fencing to exclude beavers and other large herbivores.

- Releasing or thinning of riparian conifers to increase tree size while retaining high shading levels.
- Aggressively removing infestations of noxious weeds that replace native vegetation.
- Pursuing cooperative restoration efforts on stream segments that have multiple ownerships.

6.1.3 WATER QUALITY

1. When conducting forest density management projects inside Riparian Reserves, leave a no-harvest vegetation buffer along all intermittent and perennial stream channels, lakes, ponds, and wetlands. The width of the buffer should be sufficient to maintain water quality standards, including temperature and sediment. Buffer widths should be determined on a site-specific basis.
2. Evaluate stream shade conditions and identify and prioritize potential restoration sites to improve stream shade on BLM lands.
3. Work with the Tillamook Watershed Council and ODEQ to further quantify non-point sources of pollution. Expand the temperature monitoring network and locate stream segments where rapid heating occurs, especially in areas used by salmonids.
4. Cooperate with private and state landowners to implement riparian and in-stream restoration projects and to retain and enhance riparian overstory.
5. Minimize or mitigate for road-building activities within Riparian Reserves that have the potential to impact water quality standards, including temperature and sediment, or fail to meet ACS objectives.
6. Road construction, upgrading, maintenance, and closure should be performed in accordance with Best Management Practices, as listed in Appendix C of the Salem District's RMP and the Salem District's Transportation Management Plan.

6.1.4 AQUATIC SPECIES AND HABITAT

1. Maintain active participation in the Tillamook Bay Watershed Council.
2. Work on the long-term development of a more complex riparian zone. Strategies would include: developing multi-storied canopy layers, felling or placing larger diameter trees in strategic locations along the stream, underplanting small openings with conifers, and releasing existing conifers.
3. Pursue a coordinated effort to inventory culverts for fish passage across the watershed, and then prioritize projects across all land ownerships.

6.2 TERRESTRIAL

6.2.1 NOXIOUS/EXOTIC PLANTS

1. Develop and implement a process for identifying and documenting weed infestation sites.
2. Where appropriate, develop "Memoranda of Understanding" (MOU's) with adjacent landowners and state and county agencies in order to expedite weed control.
3. Where consistent with safety and management considerations, protect existing native vegetation along roads to help exclude the infestation of invasive species. When building new roads, keep the clearing limits as narrow as possible to limit available growing sites for invasive species.
4. Consider cleaning with a pressure washer heavy equipment that will be used on BLM land for management activities. Cleaning should occur before entering BLM land, and removed seeds and vegetation should not be allowed into any potential water course.
5. Control noxious weed infestations through appropriate control measures (manual labor, biological controls, herbicides, prescribed fire), consistent with ecological objectives.

6.2.2 SPECIES HABITAT

1. Evaluate forest stands and, where appropriate, apply silvicultural prescriptions that would benefit the development of late-seral forest habitat. Such treatments could include variable spaced density management thinnings to promote large tree growth, canopy gaps to encourage a second canopy layer and vertical diversity of the overstory, and underplanting with shade tolerant conifers to promote multi-layered canopy.
2. When conducting density management thinnings, consider developing new LWD by creating snags and down wood. Also evaluate forest stands adjacent to planned thinnings that are not being considered for silvicultural treatment for the opportunity to create LWD.
3. Within the LSR and Reserve Pair Area, inventory existing LWD and create new LWD, if needed, to reach the high level of LWD expected for older stands as outlined in the Late-Successional Reserve of the Northern Coast Range Adaptive Management Area, January 1998 (LSRA).
4. Evaluate the non-suitable owl habitat within the Reserve Pair Area for the opportunity to release understory conifers in the primarily hardwood-dominated stands. Apply treatment if feasible.
5. Inventory LSR for use by marbled murrelets. Consider using radar for surveys.

6. Coordinate with ODF to explore the feasibility of establishing a corridor of late-seral forest habitat that would connect the Nestucca Block LSR with the Trask/Little North Fork of the Wilson/Kilchis Late-Successional block. (See pg. 67 Nestucca Watershed Analysis October 1994).
7. Consider closing roads that are not needed for management activities and excluding OHV use, especially in Sections 4, 5, and 8, T.2S., R.6W., W.M. and in the vicinity of the LSR lands. These areas are fairly large blocks of unbroken contiguous forest that may provide good core areas for wildlife that are sensitive to human disturbance, such as spotted owls and marbled murrelets.

6.2.3 UPLAND FOREST

1. Consider releasing conifers in alder-dominated areas on steep rocky slopes in the RPA.
2. Implement variable density thinning throughout the watershed to achieve a variety of habitats in both the overstory and understory which will help create late-successional forest characteristics. These objectives include: developing a diverse multi-storied forest structure that will likely be utilized by marbled murrelets and spotted owls; managing for the long-term supply and maintenance of snags and down logs.
3. In density management areas, surveys should be conducted to determine existing levels of LWD. The guidelines in the LSRA should be followed to determine appropriate levels of future LWD.

6.2.4 RIPARIAN ZONES

1. Plan and implement riparian silvicultural projects which are designed to accelerate the growth of riparian conifers and enhance species diversity and vertical stand structure.
2. Underplant conifers or release existing conifers in small open areas where hardwoods dominate the riparian zone. Highest priority should be given to areas with high potential for large wood recruitment and increased stream shade. This is best accomplished with a management plan for a given stream reach so that each alder stand can be individually evaluated for its overall contribution.

6.2.5 INSECTS AND DISEASE

6.2.5.1 *Douglas-fir Beetle*

Douglas-fir beetles are attracted to freshly cut logs, and can produce significant amounts of brood in trees which are 12 inches dbh and larger. The threshold for the number of down trees necessary for beetles to produce enough brood to kill live trees is three per acre. As the

diameters of these trees and the numbers of trees increase, so does the potential for producing more beetles, which in turn increases the risk of additional Douglas-fir mortality in the surrounding area. Based on observations in western Oregon after blowdown events, for every 100 downed trees about 60 nearby trees will be killed over the next three years. Generally, these observations were in mature (100+ years) stands where the trees were much larger than 12 inches dbh.

Several actions may be taken to reduce the risk of unacceptable amounts of additional beetle-caused mortality. How much mortality is acceptable depends on the standards and guidelines of the land use allocation and the existing amount of LWD. Following are general recommendations to consider when writing silvicultural prescriptions to fell green Douglas-fir trees for decay class one LWD inputs:

1. When felling trees which are 12 inches dbh or larger, cut the minimum number of trees possible that will allow achievement of the LWD objectives.
2. Fell the trees in areas that are more likely to receive direct sunlight. Studies have shown that beetles produce less brood in logs with less shading.
3. Avoid felling trees in areas where standing live Douglas-fir trees are known to have reduced vigor and where it would be unacceptable for many of these trees to die.
4. Fell groups of trees in separate events that are spaced 3-5 years apart. Five-year intervals would minimize the risk of the local beetle population building to an unacceptable level.
5. If possible, felling should occur from about August 1 to October 1. This will allow some drying of the cambium before the spring beetle flight, and may lessen beetle brood production. If subsequent beetle-caused mortality is not a particular concern, such as in an LSR area, timing of tree felling may not be an issue.
6. Postpone felling of LWD trees if bark beetle populations are known to be high, or if there has been considerable amounts of tree mortality in the general area for the previous year or two. This information can be gained from the Insect Aerial Detection Survey maps that are available from the USDA Forest Service, Forest Health Protection.
7. Fell species other than Douglas-fir for LWD recruitment.
8. Emphasis on enhancing LWD through snag creation will greatly reduce subsequent mortality from Douglas-fir beetles.

The risk of bark beetle population buildup is less in healthy, young stands than in older, less vigorous stands. The risk of additional tree mortality in a stand 40 years old (common to BLM land in this watershed) or younger is probably very low. This risk probably increases through time, with stands 80 to 100 years old becoming more susceptible to some overstory mortality. Remnant old-growth pockets, in particular, would be at risk of some tree mortality if beetle populations increased significantly in the area because of LWD creation.

6.2.5.2 *Phellinus weirrii*

High *Phellinus weirrii* levels

1. Apply density management between centers of disease infection. The treatment should emphasize the removal of symptomatic live trees where they occur and retention of snags. In addition, thinning should be of moderate intensity, retaining approximately 60 - 100 trees per acre. The trees should be variably spaced to enhance horizontal structure across the landscape. Opening should be planted with western red cedar or other disease-resistant species, such as bigleaf maple, where appropriate.

   The recommended treatment for disease centers is as follows:

   - Retain the snags for their wildlife value.
   - Plant a second stand of *Phellinus*-resistant species in the openings.
   - It may be necessary to manually cut planting spots through the shrub layer to allow planting.
   - Several years of maintenance may be required to control competing vegetation and limit browse until the disease-resistant species can become established.

Low *Phellinus weirrii* levels

2. In areas that have low to moderate levels of *Phellinus weirrii,* a density management thinning of moderate intensity is recommended, retaining approximately 60 - 100 trees per acre. The trees should be variably spaced to enhance horizontal structure across the landscape.
3. When *Phellinus* infections are well defined, they should be surrounded with a "bridge tree cut" which is implemented by removing a ring of susceptible species around the perimeter of symptomatic trees, thus isolating the disease center from the uninfected portions of the stand. The disease centers should be under-planted with disease resistant species, primarily western red cedar.

6.2.5.3 *Swiss Needle Cast*

1. Actively participate in the Swiss Needle Cast (SNC) Cooperative.

Low Swiss Needle Cast levels

2. Density management thinning that favors non-host species is appropriate. Leave trees that have larger and healthier crowns and appear to be non-symptomatic for Swiss Needle Cast. Creating small gaps or openings in which non-host species are planted may be appropriate. Create small openings around advanced non-host reproduction.

Medium to High Levels of Needle Cast

3. Monitor the growth, health, and mortality in stands that are moderately to severely infected. Implement the latest recommendations and findings from the SNC cooperative to develop and maintain late-successional forest structure in stands that are severely infected.
4. Plant non-host species in underplanting and gaps where appropriate.
5. Follow the recommendations contained in Silviculture and Swiss Needle Cast: Research and Recommendations (Filip et al. 2000), as appropriate.

6.3 SOCIAL

6.3.1 RECREATION

1. Conduct an OHV inventory of trails within the watershed. Revisit OHV designations throughout the watershed. Determine if use designations should be changed due to resource, wildlife, or water quality issues.
2. Monitor dispersed recreation sites to determine if use is impacting water quality. Implement corrective actions as appropriate. If water quality issues are present, develop a plan for preventive measures, which could include limiting access, closing area to use, or refurbishing area.

6.3.2 ROAD-RELATED ISSUES

1. Identify BLM roads that pose a present or future threat of blocking fish passage, contributing sediment, or otherwise degrading water quality. Reduce road segments that alter flow by decommissioning roads that would not be required for access by BLM or neighboring landowners.
2. For future density management thinning projects, upgrade existing roads and use legacy roads, rather than constructing new roads, to reduce potential negative impacts.
3. Place large wood collected from road maintenance activities, such as culvert cleanout, in locations where there is potential for the wood to be delivered to a stream.
4. Minimize disruption of natural hydrologic flow paths by installing drivable waterbars on roads that are expected to receive minimal or no maintenance.

There are about 11 miles of surveyed roads on BLM land within the Elkhorn Activity Planning Unit. Reconstruction plans call for:

1. road maintenance and culvert replacement (~ 2.9 mi.)
2. water bar installation and culvert replacement (~ 4.8 mi.)

3. decommission and culvert removal (~ 3.3 mi.)

A total of 20 culverts were rated as poor and are designated as high priority for replacement. In addition, 9 culverts are planned to be removed in conjunction with decommissioning actions.