

## **CHAPTER 5. RECOMMENDATIONS FOR ODF**

### **5.1 GENERAL APPROACH**

The following recommendations are intended to work in accordance with the strategies of the Northwest Oregon Area Forest Management Plan (FMP). In keeping with the intent of that plan, the general approach of the recommendations incorporates elements of cooperation, strategic approach, priorities, and alternatives. This chapter was prepared jointly by E&S and ODF personnel.

#### **5.1.1 COOPERATION**

Opportunities to improve watershed health in the Trask watershed can most effectively be addressed through partnerships that involve cooperation among private landowners and state and federal agencies. Local watershed groups, including the Tillamook Estuaries Partnership and the Tillamook Bay Watershed Council, can play vital roles in facilitating such cooperation. Specific recommendations can be provided here with respect to actions and/or management decisions by ODF, and these actions and decisions can, in fact, improve watershed health and increase the amount and quality of aquatic, riparian, wetland, and forest habitat within the watershed. Some issues, however, do not lend themselves very well to unilateral actions on the part of a single ownership category.

For example, stream temperatures in the mainstem Trask River are likely to remain above federal standards, irrespective of the actions taken by ODF and/or BLM. Similarly, high concentrations of fecal bacteria and low dissolved oxygen concentrations in the Lower Trask subwatershed are not likely to be influenced at all by federal or state land management within the watershed. The temperature and dissolved oxygen water quality problems, which are most pronounced downstream from ODF and BLM land holdings, adversely impact anadromous salmonids that utilize streams on public lands during parts of their life cycle. Only through cooperation that involves private landowners can such problems be effectively addressed.

#### **5.1.2 STRATEGIC APPROACH TO ADDRESSING AQUATIC/RIPARIAN ISSUES.**

Historically, ODF has often implemented improvements related to resource issues opportunistically. That is, these improvements have been implemented in connection with timber sales. This approach offers advantages. First, there is a direct geographical connection between the funding source and the area of improvement. Second, the improvement projects are often able to take advantage of equipment already in the area.

While these advantages are important, a purely opportunistic approach may result in the most important issues not being addressed. It is here proposed that a three-tiered approach be applied to watershed management. This approach would incorporate the following strategies:

1. Make improvements in connection with timber sales.
2. Make improvements as part of normal maintenance activities.
3. Employ focused management to make improvements, independent of other management activities.

Based on policy, cost, and operational factors, ODF resource managers will determine the appropriate times to use each of these strategies.

### **5.1.3 PRIORITIES**

Watershed improvement strategies can often be performed most effectively if a prioritization scheme is implemented. Toward that end, this chapter identifies two types of priorities: subwatersheds that should be treated based on resource needs, and watershed characteristics that need to be addressed to meet resource objectives. Additionally, the watershed-related issues of greatest concern within Salmon Anchor Habitat subwatersheds are identified.

While the opportunistic and strategic approaches offer two different perspectives toward addressing resource issues, they are not necessarily exclusive. Indeed, there may be opportunity to incorporate the priorities identified within this watershed analysis in future implementation plans.

### **5.1.4 ALTERNATIVES**

These recommendations are intended to address the primary watershed health issues identified earlier in the watershed analysis. They provide general guidance to develop projects to move toward desired conditions. In most cases, they do not prescribe a specific solution. Except where these considerations reiterate guidance from ODF planning documents, they are to be considered as alternatives for use in future planning. Site-specific projects and practices need to be designed and implemented by local managers and personnel based on local conditions.

## **5.2 RECOMMENDED MANAGEMENT ACTIONS TO ADDRESS MULTIPLE RESOURCE CONCERNS**

- Establish conifers in the riparian zone

One of the most important management actions that can be taken by ODF to improve water quality and salmonid habitat in the Trask River watershed is the establishment of conifers, and ultimately large conifers, in the riparian zone. The FMP, Appendix J, specifies that the inner riparian zone (25-100 feet from stream) will be managed to develop mature conifer forest, except in those areas where hardwood-dominated conditions are expected to be the

natural plant community. Based on this watershed analysis, many areas would benefit from a greater conifer component. This can be facilitated by several methods:

1. Release of existing conifers
2. Planting conifers
3. Alder conversions

Where abundant understory conifer is present, release of existing conifers will likely be the preferred method. In other areas, management should consider planting a diversity of conifer species, including western hemlock, western red cedar, SNC-resistant strains of Douglas-fir, and (in lowland areas) Sitka spruce.

The following considerations apply when performing conifer plantings:

- Focus planting efforts primarily on S and W streambanks to maximize shade value relative to labor and planting material costs.
- In areas where bank erosion is prevalent on the N or E bank or where the stream is too wide for effective shading from one side only, planting on both sides is recommended.
- Plant tubing may be necessary to minimize animal damage.

Aquatic and Riparian Strategy #4 of the FMP provides that alternative vegetation treatments should be applied when necessary to achieve habitat objectives. In order to achieve LWD objectives in some alder-dominated areas, it may be desirable to plant conifers in small patches. Girdling and felling of alder trees could complement interplanting with conifers to help facilitate conifer release. Care should be taken, however, to not remove alder too aggressively prior to establishment of conifer shading, which could cause temporary increases in stream temperature.

The goal of this activity is eventual establishment of mature conifer forest. This will provide the following potential benefits: improvement of LWD recruitment potential, establishment of stream shading, lowering of stream temperatures, stabilization of streambanks, and reduction of erosion. An additional benefit to the terrestrial component of the watershed would be the establishment of riparian corridors that provide suitable habitat for plant and animal species dependent upon habitat characteristics associated with mature and older forest structure.

Priority for conifer establishment should be given to areas in and around core salmonid spawning and rearing habitat, such as the East Fork of the South Fork and Elkhorn Creek subwatersheds. Priority consideration should also be given to tributary systems with low in-stream structural complexity, high stream temperature, high streambank erosion, and those that are important salmonid migration corridors.

It must be recognized that the benefits of these riparian planting and alder conversion efforts will not begin to be seen for several years, and will subsequently be manifested over a period of many decades or longer. Management actions taken now will realize benefits well into the 21<sup>st</sup> century and beyond.

## 5.3 RECOMMENDATIONS FOR SPECIFIC RESOURCES

### 5.3.1 AQUATIC

#### 5.3.1.1 Erosion Issues

**Issue:** Certain harvest methods, layouts, and techniques associated with logging on high landslide hazard locations can lead to increased landsliding.

Recommendations:

1. Continue to follow existing FMP guidance related to high landslide hazard slopes (e.g. riparian aquatic strategy 6).
2. Continue to consult with ODF geotechnical experts to evaluate site-specific hazards and risks on high landslide hazard lands. This procedure should include an evaluation of potential benefits provided by the landslide, such as addition of wood to streams (FMP aquatic and riparian strategy 6 and soils strategy 2).

Special emphasis subwatersheds for recommendations 1-2:

- Upper Trask, South Fork Trask, North Fork Trask: High incidence of steep lands, expected heavy cuts to abate Swiss needle cast (SNC).
- East Fork South Fork Trask: Although lower incidence of steep lands, heavy SNC abatement cut planned. Also Salmon Anchor Habitat.

**Issue:** Road cuts are often associated with accelerated landsliding. This is particularly the case with roads created prior to implementation of current standards.

Existing strategies for dealing with issue: The ODF Roads manual prescribes specific road construction and maintenance techniques designed to minimize landslides.

Recommendations:

3. Continue to follow road manual guidance related to road stability.
4. Update road inventory to reflect current status of roads. Develop schedule for fixing known road problems.
5. Develop procedure for monitoring condition of roads with identified high landslide hazard. Evaluate roads for improvement or replacement.

Special emphasis subwatersheds for recommendations 3-5:

These recommendations should be emphasized in subwatersheds with a high incidence of roads on steep slopes and known road washouts. These include the North Fork Trask subwatershed, which has the highest proportion of road slippage problems. The South Fork and Upper Trask subwatersheds were identified in section 4.1.3.4 as priority areas to

address erosion issues (sec 4.1.3.4). The North Fork North Fork subwatershed is also a priority because it has a high incidence of near-stream roads on steep slopes.

**Issue:** High rates of streambank erosion were identified during ODFW aquatic surveys within the Elkhorn and East Fork of the South Fork Trask subwatersheds. No cause was identified for this erosion.

Recommendation:

6. Investigate causes of streambank erosion within the Elkhorn and East Fork of the South Fork Trask subwatersheds.

### **5.3.1.2 Hydrology Issues**

**Issue:** Roads that are hydrologically connected to streams can alter hydrology and contribute sediment to those streams. Hydrologic connection was not completely inventoried during the last road inventory.

Recommendation:

1. Consult with ODF transportation planner regarding opportunities and methods of updating road inventory to include hydrologic connection information.

Emphasis subwatersheds for hydrology recommendation 1:

All subwatersheds with ODF-maintained roads.

### **5.3.1.3 Stream Channel Issues**

**Issue:** Channel structure has been simplified. On ODF lands, this is expressed as a lack of LWD and decreased quantity and quality of pools.

Recommendations:

1. Establish conifers in the inner riparian zone. This is performed with the eventual objective of establishing mature conifers in this zone. Section 5.2 gives alternatives for conifer establishment.
2. Place key pieces of LWD in streams. This will provide short-term benefits to channel structure. However, it should be noted that many stream reaches are prone to LWD blowout. Placement projects will need to be carefully designed to ensure LWD stability. This can partially be achieved by placing key pieces at natural deposition points and in appropriate channel habitat types.

3. Pursue cooperative efforts to improve channel structure on stream segments that have multiple ownerships.

Emphasis subwatersheds for stream channel recommendations 1-3:

All subwatersheds would benefit from these recommendations. However, Elkhorn Creek and the East Fork South Fork subwatersheds should receive priority because of their status as Salmon Anchor Habitat. Areas that might be considered for emphasis because they are most deficient in LWD include the North Fork of North Fork, Middle Fork of the North Fork, South Fork, and Upper Trask subwatersheds.

Measures to improve salmon anchor habitat on Elkhorn Creek should focus on improving density of key LWD pieces, pool depth, and gravel area. Long-term solutions designed to increase conifers in the inner riparian zone should be emphasized. For the short term, placement of key pieces of LWD should also be considered.

Measures to improve salmon anchor habitat on the East Fork of the South Fork should focus on improving density of key LWD pieces and increasing the area and frequency of pools. Depending upon site-specific conditions, improvements in LWD may result in improved pool characteristics. Long-term solutions designed to increase conifers in the inner riparian zone should be emphasized. For the short term, placement of key pieces of LWD should also be considered.

#### **5.3.1.4 Water Quality Issues**

**Issue:** Summer stream temperatures are above federal standards for rearing salmonids in many parts of the watershed. On ODF lands, the principal causes for, and distribution of, high temperature reaches are uncertain.

Recommendation:

1. Expand the temperature monitoring network, determine the location of reaches where temperature exceeds the salmonid migration criterion, and locate stream segments where rapid heating occurs.

Priority subwatersheds for water quality recommendations 1 and 2:

- The North Fork and North Fork of the North Fork subwatersheds. Temperature appears to be highest along the North Fork and its tributaries. In particular, the North Fork of the North Fork appears to be above federal standards quite close to its headwaters.

**Issue:** Many water quality concerns cannot be addressed solely by ODF management. These include concerns related to high concentrations of fecal bacteria, which are concentrated in the lower portion of the watershed, and temperature concerns, which are distributed across multiple ownerships.

Recommendations:

2. Work with the Performance Partnership and Tillamook Watershed Council to promote Best Management Practices related to shading, sedimentation, and bacteria management on private lands.
3. Cooperate with other landowners to implement in-stream restoration projects and retain and enhance riparian overstory.

**Issue:** If improperly performed, practices associated with road construction, maintenance, and use can contribute sediment to streams.

Recommendations:

4. Continue to avoid road-building activities within 100 feet of streams. Where these activities are necessary or these roads already exist, use practices from the Roads Manual designed to minimize sediment delivery to streams.
5. Continue to perform road construction, upgrading, maintenance, and closure in accordance with the Best Management Practices, as listed in the ODF Roads manual.

### **5.3.1.5 Aquatic Species and Habitat Issues**

**Issue:** Salmonids and other aquatic species of concern are not restricted to one ownership. Thus, management for these species is best performed with cooperation among stakeholders.

Recommendations:

1. Maintain active participation in the Tillamook Bay Watershed Council.
2. Participate with local watershed groups to survey all lands for culvert blockages. On ODF lands, blocked culverts will be identified and corrected as part of ongoing maintenance operations.

**Issue:** Human activities have resulted in stream simplification, including loss and disconnection of fish refugia. Although these impacts have been concentrated below ODF lands, there may be opportunities for improvement on ODF lands.

Recommendation:

3. Identify opportunities to restore and reconnect off-channel wetlands and other high-flow refugia.

Emphasis subwatersheds for aquatic species and habitat recommendation 3:

No special emphasis subwatersheds were identified. However, opportunities may exist along streams with some floodplain development; the lower part of the South Fork Trask may be a good candidate for these activities. Opportunities also exist along the lower part of Type N streams near their confluence with Type F streams.

**Issue:** Historic changes in vegetation conditions and stream cleaning have contributed to reductions in in-stream LWD and LWD recruitment potential to streams. This has been accompanied by channel simplification, reduction in pools, and loss of habitat for fish.

#### Recommendations:

4. Work on the long-term development of a more complex riparian zone. This can largely be achieved through the strategies of the FMP, which provide for retention of existing vegetation within the streambank zone and management of the inner riparian zone for mature conifers. As part of this, conifer establishment activities may be warranted. For discussion of conifer establishment, see section 5.2.
5. Place key pieces of LWD in streams. This will provide short-term benefits to channel structure. However, it should be noted that many stream reaches are prone to LWD blowout. Placement projects will need to be carefully designed to ensure LWD stability. This can partially be achieved by placing key pieces at natural deposition points.

#### Emphasis subwatersheds for stream channel recommendations 1-3:

All subwatersheds would benefit from these recommendations. However, Elkhorn Creek and the East Fork South Fork subwatersheds should receive priority because of their status as salmon anchor habitat. Areas that might be considered for emphasis because they are most deficient in LWD include the North Fork of the North Fork, Middle Fork of the North Fork, South Fork, and Upper Trask subwatersheds.

Measures to improve salmon anchor habitat on Elkhorn Creek should focus on improving density of key LWD pieces, pool depth, and gravel area. Long-term solutions designed to increase conifers in the inner riparian zone should be emphasized. For the short term, placement of key pieces of LWD should also be considered.

Measures to improve salmon anchor habitat on the East Fork of the South Fork should focus on improving density of key LWD pieces and increasing the area and frequency of pools. Depending upon site-specific conditions, in-stream LWD improvements may result in improved pool characteristics. Long-term solutions designed to increase conifers in the inner riparian zone should be emphasized. For the short term, placement of key pieces of LWD should also be considered.

## **5.3.2 TERRESTRIAL**

### **5.3.2.1 Noxious/Exotic Plants**

**Issue:** Noxious and exotic plants have invaded many portions of the watershed, particularly in disturbed areas.

Recommendations:

1. Treat noxious weed infestations on state forest land through appropriate control measures (manual labor, biological controls, herbicides, prescribed fire), as per FMP Plant Strategy 4.
2. Continue to use native plant species in re-seeding projects on state forest lands.

### **5.3.2.2 Species Habitat Issues**

**Issue:** Since 1850, fires and human activity have combined to alter the habitat elements available for wildlife species. On ODF lands, these changes have created an abundance of closed single canopy forests at the expense of other structural types. This has had a resulting effect on the distribution and abundance of wildlife dependent upon various structural types.

Recommendations:

1. Follow guidance given in IPs relative to management of habitat for terrestrial species.
2. Continue to implement the principles of structure-based management. As outlined in the FMP, structure-based management provides for a diverse array of forest stand types, habitat function, and key structural components. Under the desired future conditions expressed by the FMP and the IPs, structure-based management will result in a full array of stand types and associated habitat values for species. Because these will be proportionally more diverse and closer to the historical range of natural variability than is currently the case, it is expected that overall value for wildlife will be increased.
3. In planning conifer establishment activities, consider the effects upon riparian wildlife. It will often be important to retain a hardwood component to accommodate wildlife species dependent upon this type of habitat.

### **5.3.2.3 Upland Forest**

No recommendations were made relative to upland forest.

#### **5.3.2.4 Riparian Zones**

**Issue:** In their current condition, riparian areas are unable to provide LWD to streams.

Recommendations:

1. Plan and implement riparian silvicultural projects designed to accelerate growth of riparian conifers and to improve the diversity of species composition and stand structural diversity.
2. Underplant with conifers or release existing conifers in small open areas where hardwoods dominate the riparian zone. Highest priority should be given to zones with high potential for large wood recruitment and stream shade enhancement.

#### **5.3.2.5 Insects and Disease**

**Issue:** Swiss needle cast (SNC) has spread throughout large portions of the watershed, especially close to the coast and on ridge tops and S-facing terrain. It threatens to seriously reduce the productivity of Douglas-fir stands in the watershed.

Recommendations:

1. Actively participate in the SNC Cooperative.
2. Continue current ODF SNC research program.

### **5.3.3 SOCIAL**

#### **5.3.3.1 Recreation**

**Issue:** Depending upon condition and location, off-highway vehicle (OHV) trails can cause erosion and contribute sediment to streams.

Recommendation:

1. Continue to examine the condition and erosion potential of OHV trails within the watershed. Continue to make trail redesignation or closure determinations based on this examination.

**Issue:** Some dispersed campsites near streams have been known to contribute to inputs of bacteria and sediment to the stream.

Recommendation:

2. Continue to improve dispersed recreation sites to minimize effects on water quality.

### 5.3.3.2 Road Related Issues

**Issue:** Depending upon location and condition, roads have the capability to alter hydrologic and erosional regimes, deliver sediment and pollutants to streams, and impair fish migration.

Recommendations:

1. Based on the ODF road inventory, identify roads that constitute barriers to fish, sources of sediment, and those that are likely to fail or contribute to future water quality problems. Reduce road segments that alter flow by closing unnecessary roads that would not be required for access by ODF or neighboring landowners.
2. In future timber harvest activities, continue to reconstruct or maintain roads that will be required for future thinning entries and close unneeded roads. To reduce potential negative impacts, consider upgrading existing roads and using legacy roads rather than constructing new roads.
3. Make efforts to control sediment inputs from roads (both legacy and potential new roads). Emphasis should be placed on road repair and closure of roads within close proximity to the stream channel and on steep slopes.
4. To the extent that new roads are needed to support thinning and/or logging efforts, streamside locations and steep slopes should be avoided where possible. Road construction, road repair, and road decommissioning should be accompanied by planting with native species to minimize erosion.