

CHAPTER 5 DESIRED TRENDS AND RECOMMENDED PROJECTS

COMMODITY VALUES

The desired future trend for the Elk River watershed would involve a variety of activities; individually, each will make a small contribution, but collectively, they will provide a broad spectrum of reliable and sustainable commodity values. The activities would include:

- a predictable supply of timber harvest and related employment,
- steady to slightly increasing fish runs for sport and commercial fisheries,
- employment opportunities in restoration work, road decommissioning, and riparian planting for bank stabilization
- economic diversification through non-timber forest products including mushrooms, boughs, conks, etc., and
- eco-tourism, and natural resource interpretation.

AMENITY VALUES: Scenery

The desired trend is to maintain the natural beauty along the Elk River and within the watershed. In the upper river corridor, the Siskiyou Forest Plan and the NFP complement these goals for natural beauty, or natural appearing landscapes; the elimination of roads for watershed restoration will restore the natural landscapes. As vegetation grows, views from the Elk River road may be maintained by cutting vegetation adjacent to the road.

PUBLIC USE VALUES: Recreation and Access

As stated in FEMAT, "The information on recreation demand that is reported in the Oregon and Washington State Outdoor Recreation Plans indicate there is a high and increasing demand for recreation settings with little development and management activity, relatively low use, and no motorized access permitted. For example, recent work by Swanson and Loomis (1993) indicates that although there are about 5.5 million acres already currently allocated to primitive and semiprimitive, nonmotorized recreation, the forecasted demand by the year 2000 will be nearly 13.5 million acres" (FEMAT 1993).

The elimination of roads for watershed restoration will complement the local and regional demands for semiprimitive, nonmotorized opportunities. Semiprimitive, motorized opportunities may be enhanced by upgrading existing recreation facilities along the Elk River road to modern accessibility and pit toilet standards.

The main roads; Elk River 5325, Iron Mtn. 5502, and Sixes 5201 will be important for fire suppression access.

ENVIRONMENTAL QUALITY AND ECOLOGY: Terrestrial Ecosystem

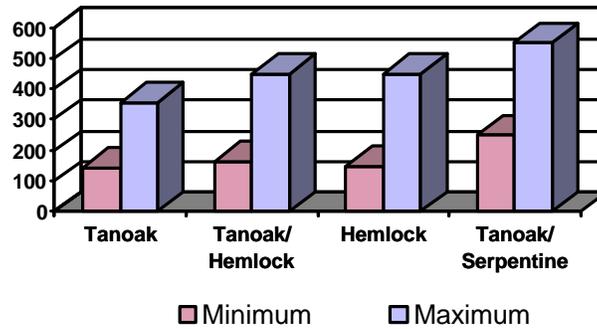
The desired trends would extend the historic trends under which the watershed has evolved, maintaining biodiversity within the watershed.

Landscape Patterns: Disturbance Frequency and Patch Size
Large Woody Material

Landscape Patterns: Disturbance Frequency

For the watershed, the desired stand replacement interval would be within the range of conditions under which all species have evolved and would not approach the extremes of the range (Swanson et al.). This range will vary by plant series (Figure 63).

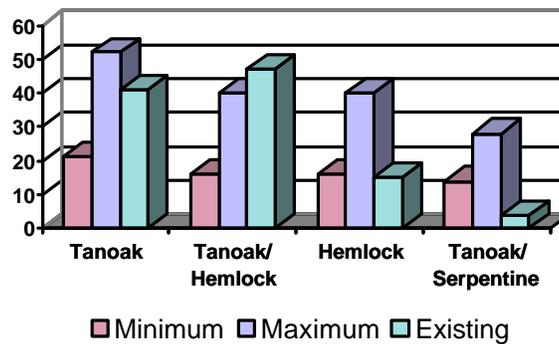
Figure 36: Desired Stand Replacement Interval



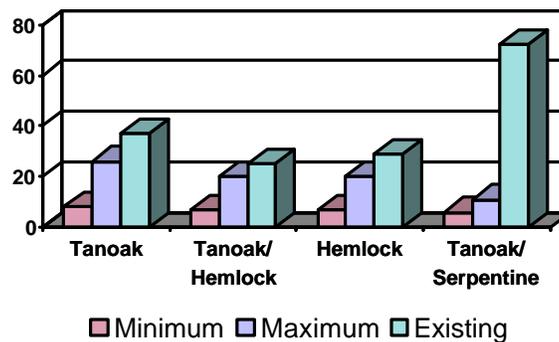
Given the desired range of stand replacement intervals, the range of age class distributions displayed in Figure 37 should be appropriate.

Figure 37: Desired Age Class Distribution by Plant Series

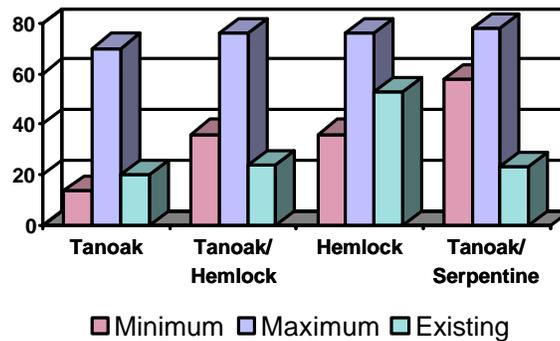
Vegetation less than 100 years old (Percent Of Area)



Vegetation 100 - 200 years old (Percent of Area)

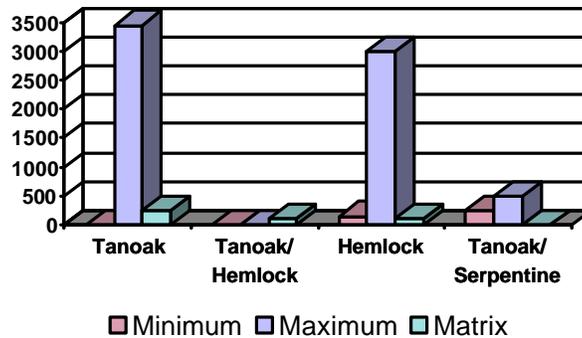


Vegetation Greater Than 200 Years Old (Percent of Area)



The existing age class distributions for the hemlock, tanoak/hemlock, and tanoak/serpentine plant series are outside the desired ranges shown in Figure 37. This existing imbalance can be corrected by vegetation management activities such as fire and harvest, dispersed over a 50-year period. Figure 38 shows the range of treatment acres that would correct this imbalance, and the acres of Matrix land available for treatment.

Figure 38: Desired Acres for Vegetative Treatment, Matrix Acres, by Plant Series



Treating only Matrix lands will not correct the existing departure from natural trends. For example, the tanoak/serpentine plant series appears to have the largest imbalance with an excess amount of vegetation between 100 and 200 years of age, and a limited amount of vegetation less than 100 years of age. However, the land available in the Matrix is not sufficient to correct the imbalance. The plants and animals dependent upon the young seral stage in the tanoak-serpentine plant series have limited habitat. Use of prescribed fire in the Late-Successional Reserves could correct this imbalance.

Patch Size

The desired patch size should include the range of conditions under which all species in the watershed evolved and should not approach the extremes of the range. This range will vary by plant series.

Large Woody Material in the Terrestrial Ecosystem

The amount of large woody material on site will vary. The extremes between no large woody material and excessive amounts of large woody material may occur through naturally occurring events such as wildfire and windthrow. In effect, the entire range of large woody material levels will probably occur throughout the landscape.

ENVIRONMENTAL QUALITY AND ECOLOGY - Wildlife

- Late/Early Successional Species
- Exotic Species
- Neotropical Migrant Bird Species (NTMB)
- Natural Disturbance
- Wildlife Habitats

Late/Early Successional Species

The desired trend for late-successional species is to maintain present numbers of individuals and provide suitable habitat sufficient for breeding activities to facilitate increases in those species for which declines have been observed. Maintaining natural openings and creating new ones when necessary will be important for the early successional species.

Exotic Species

The desired trend is to minimize introduction of any exotic species or the spread of ones already established, primarily in the lower river.

Neotropical Migrant Bird Species (NTMB)

Desired trends for future populations of neotropical birds include maintaining the species abundance and richness that has been observed in the watershed, and observing increases in those species for which declines have been documented.

Natural Disturbance

The desired trend is to maintain an ecosystem capable of withstanding the natural catastrophic events that will affect wildlife species numbers and distribution.

Wildlife Habitats

The desired trend is to maintain the integrity of the unique habitats and the intact blocks of late-successional habitat present. Also, to maintain and improve connectivity between these blocks and increase interior habitat acreage (where needed; analysis not completed). Maintaining openings also is critical for species dependent upon that habitat type.

ENVIRONMENTAL QUALITY AND ECOLOGY: Aquatic Ecosystem

- Landslides and Surface Erosion
- Water Clarity
- Large Wood Supply Affecting the Aquatic Ecosystem
- Riparian Canopy Disturbance and Stream Water Temperature
- Stream Flow
- Channel Morphology
- Fish Habitat, Distribution, and Populations

Landslides and Surface Erosion

The desired trend is to reduce sediment delivery in areas where rates are above natural levels. This trend could be enhanced by road restoration treatments such as diversion prevention, culvert capacity upgrades, other drainage treatments, fill pullback and road decommissioning.

Water Clarity

Projects intended to reduce sediment delivery and improve bank stability will also ensure continued water clarity.

Large Wood Supply Affecting the Aquatic Ecosystem

The desired trend is to accelerate reestablishment of large conifers through vegetative treatment. High priority areas include east fork of Butler Creek and the mainstem of Elk River.

Riparian Canopy Disturbance and Stream Water Temperature

In areas where temperatures have increased as a result of management activities, reestablishing conifers will provide long-term shade and cooling. This is particularly important in the East Fork Butler, Bald Mountain Creek, and along the mainstem of Elk River.

Stream Flow

Although the exact effects of harvest and road construction on streamflow in the watershed are unknown, road decommissioning and drainage stabilization will restore natural streamflow patterns. Effects of harvest will diminish as vegetation continues to grow.

Channel Morphology

Desired future trends include establishment of a cooperative joint effort between private land owners and the Forest Service to restore damaged stream channels. The focus of this effort would be to restore the channel in Bald Mountain Creek and the lower Elk River below the Forest Boundary. Priority Projects would include stabilizing sediment sources such as roads in Bald Mountain and streambanks on the lower Elk River and establishing future large wood sources.

In addition to the joint effort, the focus on Federal lands is the east fork of Butler Creek. The desired future trend in this subwatershed is to reduce chronic sediment sources to allow the aggraded channels to incise and create a narrower channel with deeper pools.

Fish Habitat, Distribution and Populations

The desired trend for the Elk River watershed is a functioning ecosystem, sustaining healthy populations of anadromous and resident salmonids, non-salmonid fishes and other aquatic organisms. Elk River is the most northern large watershed in the South Coast basin under substantial Federal ownership. The health of this system is important to fisheries diversity on the Oregon Coast.

The historic assemblage of salmonids-coho salmon, fall chinook salmon and searun cutthroat trout once dominant in the lower valleys and lower Forest stream segments has changed. This change is partially due to emphasis on fall chinook salmon production for commercial and sport fishing, and habitat alterations in the lower valley from agricultural development. Restoration activities below the Forest boundary are ongoing. Restoration work on National Forest lands will complement activities downstream. These actions will help restore the biodiversity in Elk River. Aquatic systems on Federal lands should be maintained at the high end of the range of natural variability to promote recovery on the lower reaches.

Subwatersheds on National Forest will continue to be subject to major winter storms, wildfire, and other agents of change. These phenomena will cause large amounts of sediment and large wood to be transported in the system. The impact of these events on the aquatic and riparian ecosystems would be ameliorated by maintaining mature conifer and hardwood trees in riparian areas. It would be desirable to

reduce road densities in subwatersheds, with priority given to decommissioning roads in areas with high potential for sediment delivery as mapped by high watershed sensitivity.

Large wood complexes and individual pieces present in the stream channel in a range from 20 to 150 pieces per mile are desirable. These numbers vary with the geomorphology of the stream segment. Confined valley segments should generally contain fewer pieces, arranged in complexes at confined points (bottlenecks) within the channel. Low gradient unconfined segments should generally contain an average of 80 or more pieces of wood per mile in more variable configurations (Columbia Protocol, 1994). The desired trend to achieve large wood levels is through protection, enhancement and establishment of riparian vegetation and upslope areas with a potential for stream delivery. Where appropriate, silvicultural practices such as thinning and planting should be implemented to achieve desired results.

The future fish habitat condition of Elk River and tributaries would continue to be rated as good. Under the proposed NFP, wide stream buffers and reduced timber harvest activities in headwater areas will cause fish habitat to be more diverse. Pool area with quality cover for salmonids will probably increase, summer stream temperatures will decrease and better quality water will be supplied to the fish hatchery and downstream valley habitat.

The following attributes and numerical values are recommended critical elements to assess fish habitat condition in productive flats. The intent is to focus monitoring efforts on productive flats to measure habitat conditions, upslope processes and long term trends. These numbers are guidelines based on the range of natural variability of streams in the Pacific Northwest. Actual numbers should be based on site-specific analysis.

- Pool frequency will vary with the width of the channel, approaching one significant channel pool greater than 3 feet in depth every 5 to 10 channel widths, in low gradient unconfined segments
- Width to depth ratios in low gradient segments of streams will be ten or less, when dividing the mean wetted width of the channel by the maximum depth of the adjacent channel pool.
- The diversity of aquatic insects and other aquatic organisms will remain stable or increase.
- Fine sediment in the fish-bearing segments of the watershed will remain stable or decrease as roaded areas are restored and vegetative regrowth occurs.
- Large wood pieces in low gradient unconfined stream segments will range from 20 to 150 pieces per mile.

A sustainable and functioning aquatic ecosystem in Elk River will require that conservation measures and restoration activities be applied across the entire watershed and adjacent marine habitats.

Escapement Goals: Currently there are no spawning escapement goals available for Elk River salmonid species. The ODFW is in the process of compiling a South Coast Basin Plan that is scheduled to be published in 1998. These escapement goals can be used in the interim until the plan is published or until more complete and comprehensive methodologies are developed.

These escapement goals are optimum numbers (Figure 39). They represent female escapement only. They were calculated for the Siskiyou National Forest portion and does not include the lower mainstem. Since environmental conditions can be quite variable, these numbers represent a range. These figures will vary spatially and temporally depending upon current conditions, local disturbances, and ocean conditions. For methods used to determine escapement goals see Appendix K.

Figure 39: Optimum Range of Female Salmonid Escapement for the Siskiyou National Forest Portion of the Elk River.

Species	Low End	High End
Chinook salmon	2,800 females	3,100 females

Coho salmon	125 females	150 females
Winter steelhead	690 females	750 females
Cutthroat trout	1,000 females	1,200 females