

## **Scenery**

The desired trend for scenic management encourages a more natural appearing landscape, especially along existing recreation roads.

## **Wilderness**

The desired trend for wilderness is to more fully understand the role and value of natural areas in ecological and social systems. Wilderness will be integrated into watershed inventory and monitoring. The recreation program in wilderness will continue to provide opportunities for wilderness experiences without impinging on the protection and enhancement of non-recreation values of wilderness. Wilderness-dependent activities are favored such as seeking solitude and nature study.

## Desired Future Conditions by Ecosystem Strata

Desired future conditions were formulated specific to the ecosystem strata introduced in Chapter 4. These strata are: Beaver Creek, north side of Jackson Creek, Whisky/Coffin/Pickett, the Late Successional Reserve, and main stem Jackson Creek (Figure 27). Specific DFCs for each stratum follow.

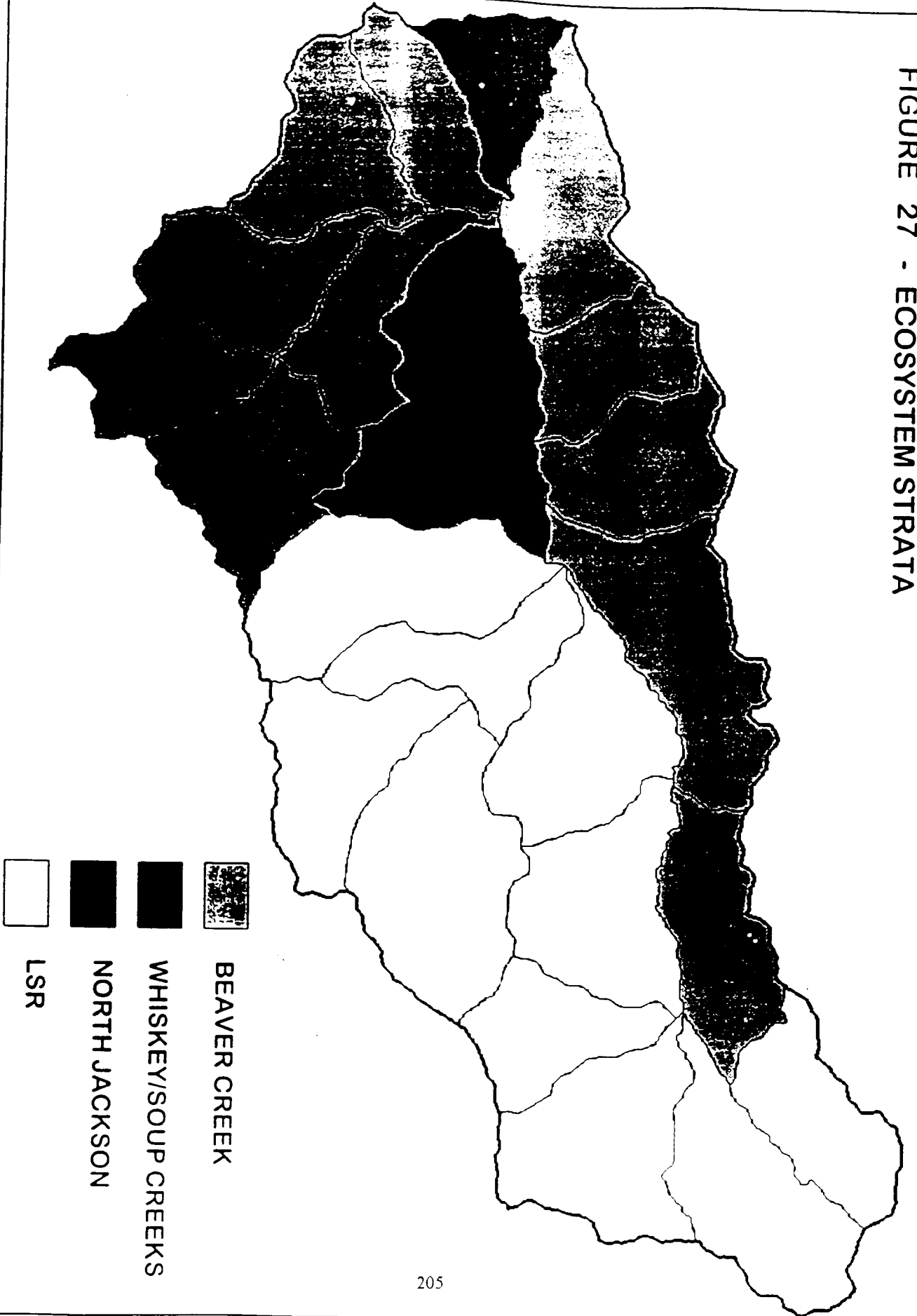
### Beaver Creek Ecosystem Stratum

Beaver Creek watershed was identified as its own landscape stratum due primarily to the high aquatic values documented in chapter 4. This stratum encompasses six WAAs (P, Q, R, S, T, U) totaling 22,473 acres. A number of specific recommendations have been designed specifically for Beaver Creek drainage to meet desired future conditions described below.

#### Aquatics Desired Future Condition

<b>Beaver Creek - Aquatics Desired Future Conditions</b>		
<b><u>Lower 1.5 Miles</u> Aquatic Condition</b>	<b>Current</b>	<b>Desired</b>
Streambank Ground Cover	25-50%	50-75%
Cobble Embeddedness	>35%	<35%
Streambed Surface Fines	36%	<15%
<b>Coho</b>		
Spawners/Mi	0-4	158 fish/mi
Spawning sites w/ >20% fines	83%	<20%
Fredle Index (spawning sites)	1.69	>3
Spawning sites w/ shallow gravel	67%	<10%
<b>For All of Beaver Creek</b>	<b>Current</b>	<b>Desired</b>
Channel Extension due to Roads	27-35%	0
Daily Min Stream Water Temperature	55-65 degrees F	<55
Cutthroat Trout	rare	abundant
Erosional Sites	extensive	minimal
Low Flow Wetted Width (lower 5 Mi)	17 feet	11 feet
Effective Stream Shade Class 1, 2, and 3 Streams	16-60% of stream miles w/ >70% canopy closure	87-96% of stream miles w/ >70% canopy closure
Instream Large Woody Debris (>24"dbh, > 50' in length)	9-34 pieces/mile	60-110 pieces/mile

FIGURE 27 - ECOSYSTEM STRATA



## Vegetation Desired Future Condition

Desired Landscape Structure for Beaver Creek				
Landscape Structure 4)	Current		Desired	
	Proportion, %	Arrangement	Proportion, %	Arrangement
<b>Riparian Vegetation</b>		<b>Connectivity</b>		<b>Connectivity</b>
Establishment	16		10-25	
Stem Exclusion	57	1)	10-25	1)
Late Seral	27	Not Connected	60-90	More Connected
<b>Upslope Vegetation</b>		<b>Patch Number/Size</b>		<b>Patch Number/Size</b>
Establishment 3)	17	457/8	10-30	
Stem Exclusion	61	67/200	10-30	2)
Late Seral	22	67/74	40-80	
<b>Riparian Vegetation (Lower 1.5 Miles)</b>				
Establishment				
Stem Exclusion				
Late Seral	0		80-100	
<b>Ponderosa Pine Plantations</b>			0%	

The following assumptions and conditions formed a basis for devising vegetation desired future conditions in Beaver Creek.

- 1) Riparian connectivity is based on a qualitative evaluation of mapped late seral, riparian vegetation.
- 2) There is more interior habitat than at present. Patch density and size reflect fire regime:
  - \* high frequency, low intensity regime; there are more, smaller patches;
  - \* low frequency, high intensity regime; there are fewer, larger patches
- 3) The statistics for historic establishment patches are skewed by the private land that was mapped as establishment although it was likely late successional.
- 4) Habitat condition objectives for wildlife species are incorporated into the vegetation DFC unless otherwise specified.

The headwaters of Beaver Creek are connected with Jackson Creek by interior, late seral habitat.

Beaver Creek Minimum Snags and Down Woody Debris, per Acre				
Condition and Diameter Class	High Frequency Fire Regime		Low Frequency Fire Regime	
	Snags		Snags	
Hard > 21 inches	2		3	
Soft > 21 inches	1		2	
Hard < 21 inches	1		1	
Soft < 21 inches	1		2	
	Large Woody Debris			
	Pieces	Feet	Pieces	Feet
Hard > 21 inches	4	130	5	190
Soft > 21 inches	3	100	5	220
Hard < 21 inches	2	50	4	100
Soft < 21 inches	4	110	5	150

### Wildlife Desired Future Condition for Beaver Creek

#### Beaver Creek Wildlife Species Populations Desired Future Conditions

Late Successional Species	*Current	Desired
Distribution	Isolated or missing in 1 or more WAAs	Continuous in all WAAs
Population Size	Low /declining	Abundant
Patch Occupancy	< 60%	>80%

Early Successional Species	*Current	Desired
Distribution	Continuous in all WAAs	Continuous in all WAAs
Population Size	Abundant/increasing	stable
Patch Occupancy	>90%	>80%

\*estimated

## North Side Jackson Creek Ecosystem Stratum

This ecosystem strata is characterized by a :

- \* microclimate that is strongly dominated by the strata's south aspect;
- \* historically high fire frequency that maintained a, generally, "park-like" forest;
- \* high concentration of cutthroat trout in tributaries;
- \* predominance of earthflow terrain with downcutting, erosive channels that lack large wood;
- \* high level of timber harvest.

### Aquatics Desired Future Condition

<b>North Side of Jackson Creek - Aquatics Desired Future Conditions</b>		
Aquatic Condition	Current	Desired
Fish Population Connectivity Instream Large Woody Debris	8 of 9 streams w/ potential barriers 1 of 13 streams w/ > 60 pieces/mi, remaining 12 streams avg 28/mi	No Barriers All streams with 60-110 pieces/mile
Cobble Embeddedness Bank Stability	< 35% embeddedness in 31% of reaches 60% of stream reaches have > 50% streambank ground cover	< 35% embeddedness in > 50% reaches > 70% of reaches have > 50% streambank ground cover
Effective Stream Shade Class 1, 2, and 3 Streams	13-66% of stream miles w/ 70% canopy closure	87-96% of stream miles with > 70% canopy closure
Erosional Sites	Extensive	Minimal
<b>Pfankuch Scores</b>		
Earthflow Terrain	82	32-68
Non-earthflow Terrain	73	32-62

## Vegetation Desired Future Condition

Desired Landscape Structure for the North Side of Jackson Creek				
Landscape Structure 4)	Current		Desired	
	Proportion, %	Arrangement	Proportion, %	Arrangement
<b>Riparian Vegetation</b>		<b>Connectivity</b>		<b>Connectivity</b>
Establishment	19		10-15	
Stem Exclusion	50	1)	10-15	1)
Late Seral	31	Not Connected	80-90	More Connected
<b>Upslope Vegetation</b>		<b>Patch Number/Size</b>		<b>Patch Number/Size</b>
Establishment 3)	23	533/9	10-20	
Stem Exclusion	44	103/92	10-20	2)
Late Seral	33	113/63	60-80	
<b>Ponderosa Pine Plantations</b>			0%	

The following assumptions and conditions were used to devise vegetation desired future conditions for the north side of Jackson Creek.

- 1) Riparian connectivity is based on a qualitative evaluation of mapped late seral, riparian vegetation.
- 2) There is more interior habitat than at present. Patch density and size reflect fire regime:
  - \* high frequency, low intensity regime; there are more, smaller patches;
  - \* low frequency, high intensity regime; there are fewer, larger patches
- 3) The statistics for historic establishment patches are skewed by the large unique habitat and establishment patches, the latter a map assumption, in the west end of the watershed.
- 4) Habitat condition objectives for wildlife species are incorporated into the vegetation DFC unless otherwise specified.

There is connected, interior late seral habitat between Jackson Creek and Buckeye Creek to the north.

North Side of Jackson Creek Minimum Snags and Down Woody Debris, per Acre					
Condition and Diameter Class	High Frequency Fire Regime		Low Frequency Fire Regime		
	<u>Snags</u>		<u>Snags</u>		
Hard > 21 inches	2		3		
Soft > 21 inches	1		2		
Hard < 21 inches	1		1		
Soft < 21 inches	1		2		
	Large Woody Debris				
	<u>Pieces</u>	<u>Feet</u>	<u>Pieces</u>	<u>Feet</u>	
Hard > 21 inches	4	130	5	190	
Soft > 21 inches	3	100	5	220	
Hard < 21 inches	2	50	4	100	
Soft < 21 inches	4	110	5	150	

## Wildlife Desired Future Condition

### North Side of Jackson Creek Wildlife Species Populations Desired Future Conditions

<b>Late Successional Species</b>	<b>*Current</b>	<b>Desired</b>
Distribution	Isolated or missing in 1 or more WAAs	Continuous in all WAAs
Population Size	Rare/declining	Stable
Patch Occupancy	<60%	>60-80%

<b>Early Successional Species</b>	<b>*Current</b>	<b>Desired</b>
Distribution	Continuous in all WAAs	Continuous in all WAAs
Population Size	Abundant/increasing	Abundant/stable
Patch Occupancy	>90%	>80%

\*estimated



## Late Successional Reserve Ecosystem Stratum

The LSR Stratum coincides with the land allocation described in the ROD. In terms of almost all measures of the range of natural variation, the LSR is in the most favorable position. It is the least disturbed area of all the strata used for this analysis.

### Aquatic Desired Future

#### LSR - Aquatics Desired Future Conditions

Aquatic Condition	Current	Desired
Instream Large Woody Debris	38 pieces/mile	60-110 pieces/mile
Cobble Embeddedness	58% of reaches w/ < 35% embeddedness	> 70% w/ < 35% embeddedness
50-100% Streambank Ground Cover	88% of reaches meet standard	> 80% meet standard
Effective Stream Shade Class 1, 2, and 3 Streams	54-96% of stream miles w/ 70% canopy closure	87-96% of stream miles with > 70% canopy closure
Erosional Sites	Extensive	Minimal
<b>Squaw Creek</b>		
Instream Large Woody Debris	19 pieces/mile	60-110 pieces/mile
Macroinvertebrate Total Index	63	> 75
Daily Minimum Stream Temperatures	51-60 degrees F	< 55
Daily Maximum Stream Temperatures	56-67 degrees F	< 66
Cutthroat Trout Abundance	Rare	Abundant

## Vegetation Desired Future Condition

<b>Desired Landscape Structure for the Late Successional Reserve</b>				
Landscape Structure 4)	Current		Desired	
	Proportion, %	Arrangement	Proportion, %	Arrangement
<b>Riparian Vegetation</b>		<b>Connectivity</b>		<b>Connectivity</b>
Establishment	13		10-25	
Stem Exclusion	30	1)	10-25	1)
Late Seral	57	Not Connected	60-90	More Connected
<b>Upslope Vegetation</b>		<b>Patch Number/Size</b>		<b>Patch Number/Size</b>
Establishment 3)	15	1223/6	10-30	
Stem Exclusion	34	168/94	10-30	2)
Late Seral	51	58/416	40-80	
<b>Ponderosa Pine Plantations</b>			0	

The following assumptions and conditions were used to devise vegetation desired future conditions for the Late Successional Reserve.

- 1) Riparian connectivity is based on a qualitative evaluation of mapped late seral ,riparian vegetation.
- 2) There is more interior habitat than at present. Patch density and size reflect fire regime:
  - \* high frequency, low intensity regime; there are more, smaller patches;
  - \* low frequency, high intensity regime; there are fewer, larger patches
- 3) The statistics for historic establishment patches are skewed by the small unique habitat patches on the Rogue-Umpqua Divide.
- 4) Habitat condition objectives for wildlife species are incorporated into the vegetation DFC unless otherwise specified.

The Donegan/Squaw Creek watershed is connected to the Squaw Flat Research Natural Area and Jackson Creek by interior, late seral habitat.

<b>Late Successional Reserve</b>		
<b>Minimum Snags and Down Woody Debris, per Acre</b>		
<b>Condition and Diameter Class</b>	<b>Snags</b>	
Hard > 21 inches	3	
Soft > 21 inches	4	
Hard < 21 inches	2	
Soft < 21 inches	3	
	<b>Large Woody Debris</b>	
	<b>Pieces</b>	<b>Feet</b>
Hard > 21 inches	7	250
Soft > 21 inches	8	320
Hard < 21 inches	6	150
Soft < 21 inches	7	200

## Wildlife Desired Future Condition

### Late Successional Reserve Wildlife Species Populations Desired Future Conditions

Late Successional Species	Current	Desired
Distribution	Fragmented in 1 or more WAAS	Continuous in all WAAs
Population Size	Moderate/declining	Abundant/increasing
Patch Occupancy	60-80%	>80%

Early Successional Species	*Current	Desired
Distribution	Continuous in all WAAs	Continuous in all WAAs
Population Size	Abundant/increasing	declining/stable
Patch Occupancy	>90%	60-80%

estimated

## Whisky, Coffin and Pickett Ecosystem Stratum

The WAA's on the south side of Jackson Creek have a number of similarities. These areas are in the lower reaches of Jackson Creek and include a number of tributaries that contribute to the reaches of Jackson Creek determined to be critical for spring chinook and other aquatic species. High landslide rates, both natural and management related, appear to be contributing to the degraded aquatic conditions in and below these areas. The riparian vegetation is less than half the desired condition, and associated large wood is twenty five to fifty percent of the desired range. High road densities and potential for additional landslides will lead to recommendations to reduce the causal mechanism's and minimize the risk of additional impacts to the aquatic environment. Vegetation management in the past resulted in low amounts of Late Seral vegetation remaining, only one third of these areas are currently considered Late Seral. The desired condition is to enhance the connectivity of larger Late Seral patches and develop the Establishment and Stem Exclusion types to enhance structure and diversity.

### Aquatic Desired Future Condition

Whisky, Coffin and Pickett Stratum (WAA's N, O, and V) - Aquatics Desired Future Conditions		
Aquatic Condition	Current	Desired
Instream Large Woody Debris	18-43 pieces/mile	60-110 pieces/mile
Effective Stream Shade Class 1, 2, and 3 Streams	56-62% of stream miles w/ 70% canopy closure	87-96% of stream miles with > 70% canopy closure
Landslide Rates and Character	> Natural	Natural
Debris Flow Rates and Character	> Natural	Natural
Channel Extension due to Roads	27-47%	0%
<b>Pfankuch Scores</b>		
Earthflow Terrain	82 (Mean)	32-68
Non-earthflow Terrain	86 (Mean)	32-62

## Vegetation Desired Future Condition

<b>Desired Landscape Structure for Whisky, Coffin and Pickett Stratum</b>				
Landscape Structure 4)	Current Proportion, %	Current Arrangement	Desired Proportion, %	Desired Arrangement
<b>Riparian Vegetation</b>		<b>Connectivity</b>		<b>Connectivity</b>
Establishment	10		10-20	
Stem Exclusion	56	1)	10-20	1)
Late Seral	34	Not Connected	60-90	More Connected
<b>Upslope Vegetation</b>		<b>Patch Number/Size</b>		<b>Patch Number/Size</b>
Establishment 3)	12	289/4	15-25	
Stem Exclusion	57	51/115	15-25	2)
Late Seral	31	56/58	40-70	
<b>Ponderosa Pine Plantations</b>			0	

The following assumptions and conditions were used to devise vegetation desired future conditions for the Whisky, Coffin, and Pickett Stratum.

- 1) Riparian Connectivity is based on a qualitative evaluation of mapped late seral, riparian vegetation.
- 2) There is more interior habitat than at present. Patch density and size reflect fire regime:
  - \* high frequency, low intensity regime; there are more, smaller patches;
  - \* low frequency, high intensity regime; there are fewer, larger patches
- 3) The statistics for historic establishment patches are unaffected by unique habitat or map assumptions.
- 4) Habitat condition objectives for wildlife species are incorporated into the vegetation DFC unless otherwise specified.

Whisky, Coffin and Pickett Stratum Minimum Snags and Down Woody Debris, per Acre				
Condition and Diameter Class	High Frequency Fire Regime		Low Frequency Fire Regime	
	Snags		Snags	
Hard > 21 inches	2		3	
Soft > 21 inches	1		2	
Hard < 21 inches	1		1	
Soft < 21 inches	1		2	
	Large Woody Debris			
	Pieces	Feet	Pieces	Feet
Hard > 21 inches	4	130	5	190
Soft > 21 inches	3	100	5	220
Hard < 21 inches	2	50	4	100
Soft < 21 inches	4	110	5	150

### Wildlife Desired Future Condition

#### Whiskey, Coffin, Pickett Wildlife Species Populations Desired Future Conditions

Late Successional Species	*Current	Desired
Distribution	Isolated or missing in 1 or more WAAS	Continuous in all WAAs
Population Size	Low/declining	Abundant/stable
Patch Occupancy	<60%	>80%

Early Successional Species	*Current	Desired
Distribution	Continuous in all WAAs	Continuous in all WAAs
Population Size	Abundant/increasing	stable
Patch Occupancy	>90%	>80%

\*estimate

## Main Stem Jackson Creek Stratum

Jackson Creek main stem flows from Lonewoman Creek to the mouth of Jackson, separating the north and south watershed strata to Beaver Creek and the South Umpqua River. The following desired future conditions concern stream habitat, fish, wildlife, or channel conditions that are unique to this large stream. The riparian reserve of Jackson Creek has approximately half the late successional forest desired. The is warm during summer, has very little wood in it, and is much wider than the DFC and historic widths. This will lead to recommendations to grow larger, taller trees where they have been cut, remove Jackson Creek road fill that is occupying floodplain habitat, and discourage poaching and harassment of adult spring chinook salmon during summer. It will be important for fish, especially cutthroat trout, to get through culverts into Jackson Creek's tributaries. More detailed discussion of aquatic desired future conditions can be found in Appendix W.

Mainstem Jackson Creek - Aquatic Desired Future Conditions		
Aquatic Condition	Current	Desired
Daily Minimum Stream Temperatures	50-71 degrees F	< 58
Cutthroat Trout	Rare	Common
Floodplain Connectivity	Low	High
% of Riparian Veg in Late Successional	39%	>80%
Dominant Substrate	Cobble	Gravel
Effective Stream Shade Class 1, 2, and 3 Streams	40% of stream miles > 70% canopy closure	87-96% of stream miles > 70% canopy closure
<b>Chinook</b>		
Spawning sites with > 20% fines	47%	< 20%
Fredle Index (Spawning sites)	2.7	> 3
Spawning sites with shallow gravel	25%	< 10%
Escapement	0-180	> 1018 Adults
Adult Over-Summer Holding Pools	Poaching, Swimming, Harassment	No Poaching or Harassment
<b>Coho Spawners</b>	0-4/mile	223-258/mile
<b>Low Flow Wetted Widths</b>		
From mouth to Beaver Creek	34 ft	17 ft
From Beaver to Squaw Creek	33 ft	20 ft
From Squaw to Lonewoman Creek	22 ft	13 ft
<b>Instream Large Woody Debris</b>		
Lower 11 miles (reaches 1-3)	6.2 pieces/mile	40-60 pieces/mile
Upper 11 miles (reaches 4-8)	13.1 pieces/mile	60-110 pieces/mile
<b>Macroinvertebrate Total Index</b>		
Lower 11 miles (reaches 1-3)	32-52	> 65
Upper 11 miles (reaches 4-8)	56-64	> 75
<b>Western Pond Turtle</b>		
Population Structure	Limited on N Bank	55-70% Adults
Nesting Habitat	Riparian roads are barriers	Restored on N Bank
Movement		No Barriers
<b>Yellow-legged Frogs</b>		
Population		Abundant
Habitat		> 40% riffles
<b>Wildlife Riparian corridor</b>	Disconnected	Connected
<b>Exotic Predators</b>	Bullfrogs Present/ Smallmouth Potential	No Exotic Species

## Chapter 7 Guidelines for Project-Level and Land Management Planning

This chapter contains recommendations for many aspects of land management for the Jackson Creek watershed. The chapter is organized in a somewhat hierarchical fashion, starting at the large scale and growing progressively more site-specific. First, we present broad, basin-wide recommendations, followed by basin-wide recommendations which are categorized by specific resource areas. Those are followed by even more geographically specific recommendations, grouped by the ecosystem strata described in chapters 4 and 6. The recommendations in this chapter reflect recognition of the fact that Jackson Creek is a tier-1 Key Watershed, by definition a “refuge” for the three anadromous fish stocks at risk in the basin.

The first series of recommendations is broad-based and embodies what we judge to be the most basic changes in land management in the watershed. The recommendations are basin-wide in nature and are multi-faceted in that they are supported by many aspects of the watershed analysis.

1. We recommend deferment of regeneration timber harvest in the entire Jackson Creek watershed at least until aquatic desired future conditions are met. The objectives of this recommendation are as follows:
  - prevent further peak flow increases so that peak flow regimes can recover, including those in erosive earthflow streams;
  - prevent further erosion that could worsen the excessive sedimentation already apparent in main stem Jackson Creek;
  - prevent further increases in stream pH, which may be associated with effects of regeneration harvest activities on nutrient availability;
  - and to move the percentage of late seral vegetation in the watershed in the direction of the Desired Future Condition.
2. Suspend livestock grazing in riparian reserves and unique habitats to protect riparian and unique habitat values.
3. Suspend use of ground-lead harvesting systems throughout the watershed to prevent additional compaction and increase in peak stream flows due to compaction.
4. We recommend retaining the riparian reserve widths which are described in the ROD. We highly recommend vegetative restoration activities within riparian reserves as described later in this chapter.



5. Through this analysis we have identified Jackson Creek Road along the valley bottom as a very high priority for decommissioning to prevent poaching of adult spring chinook salmon and to re-establish floodplain connectivity, riparian function, and channel margin complexity. In particular, the portion of the road from Beaver Creek to Squaw Creek is an important section for aquatic resources. We recommend that this be considered during Access and Travel Management planning in the watershed. Detailed rationale for this recommendation is contained in the Aquatics section of chapter 4 of this analysis.
6. We recommend using an interdisciplinary team in conducting Access and Travel Management (ATM) planning. This I.D. team approach should begin with initiation of any ATM planning. We recommend that journey level biologists and earth scientists be on the team to ensure that the full range of wildlife and aquatic resource issues are addressed.
7. Pursue a land exchange for the lower portion of Beaver Creek at T30S, R01W, section 22. This area is important to aquatic values (see chapter 4) and is known to have a prehistoric village site currently undergoing looting. Acquisition of this land would provide opportunities for upslope and riparian restoration as well as provide protection of the prehistoric village site from looters.

## **Basin-wide Land Management Recommendations**

This section is a series of basin-wide land management recommendations for many different resources. We broke the recommendations down by the following resource headings: Aquatic Resources, Wildlife and Vegetation, and Social Resources.

### **Basin-wide Land Management Recommendations for Aquatic Resources**

The following are basin-wide land management recommendations we believe are necessary to eventually attain Aquatic Conservation Strategy objectives.

1. Examine and evaluate options that best meet ACS objectives for ensuring fish population connectivity in streams with culverts within fish distributions.
2. Review and evaluate effects of water uses on stream flow and aquatic habitat. This includes evaluation of water volume and rate of pumping for fire and road watering. The objective of this recommendation is to minimize or prevent direct loss of aquatic habitat at summer low flows, especially in small tributaries that flow partially subsurface during summer.
3. Defer all fish stocking activities, except in Skookum Pond, until an interagency I.D. team, which includes ODFW, is convened to conduct basin analysis to address the issue of non-native fish stocking.

4. Do not promote or allow introduction of exotic, undesired species that pose a threat to native aquatic faunal populations.
5. As road maintenance budgets decline, focus limited funds on WAA's known to have a high risk of impacts to aquatic resources from roads. These include WAA's C, E, H, R, O, N, J & X. Focus activities on maintaining drainage function to protect aquatic resources rather than on road surfaces.
6. Use of nitrogen fertilizers should be deferred until effects on water quality, including effects of spills, has been evaluated for the basin.
7. Suspend application of fertilizers and magnesium chloride within the hydrologic influence zones of pond and wetland habitats.
8. Maintain aquatic habitat components for foothill yellow-legged frog.
9. Timber harvest in riparian reserves should only occur in those associated with intermittent streams. Such activities should only be initiated to meet specific wildlife or aquatic resource objectives. These activities must be consistent with Aquatic Conservation Strategy Objectives and must benefit the wildlife species given additional protection under Riparian Reserve Scenario 1 (See FSEIS). Vegetation manipulation should not occur in riparian reserves of fish-bearing and permanently flowing streams, constructed ponds and reservoirs, lakes or ponds, any wetlands, or unstable or potentially unstable areas, except as described for specific areas. Specific exceptions are elucidated in recommendation #10 of this section.
- X 10. Riparian Canopy Restoration: Devise and implement silvicultural prescriptions designed to release tall conifers (including western red cedar, western hemlock and Douglas fir) to increase stream shade and future supply of large wood, in the following specific locations:
  - Mouth of Squaw Creek and plantations along Squaw Creek.
  - South side of Jackson Creek (0.5 miles) below Falcon Creek, and above Falcon Creek to the 405 road (0.5 miles).
  - South side of Jackson Creek, from mouth to Squaw Creek.
11. Re-establish streamflow gaging station USGS# 140307700 in Jackson Creek, near Tiller.
12. Install continuous water quality monitor at existing stream gage on the South Umpqua at Tiller (USGS #143008000). Monitor should include water temperature, conductivity, pH, dissolved oxygen, and turbidity.
13. Measure diurnal pH in Jackson Creek reaches and tributaries where high pH was found in summer 1994, to establish water quality extremes. Reference reaches and tributary data should be recorded for comparison with 1994 and future water quality trend studies.

14. Initiate studies on the Pacific Northwest Forest and Range Experiment Station (South Umpqua Experimental Forest) Coyote Creek Watersheds to determine (a) the effects of road decommissioning and forest regrowth on peak and low flows, and (b) the effects of forest regrowth on nutrients (especially nitrogen) in runoff, stream algae, and water quality (including pH).

## **Basin-wide Guidance for Aquatic Watershed Restoration**

Aside from dealing with the valley bottom road, there are many high priority upslope, road-related restoration measures. This section is intended to summarize basin-wide prioritized guidance for upslope road-related watershed restoration planning. This is not an all-encompassing list of recommended measures for the entire basin. It only includes upslope road-related measures at the WAA scale. A few additional specific recommendations appear later in this chapter within specific recommendations for each landscape stratum.

Aquatic restoration priorities for the entire basin are documented in the Aquatic Restoration Strategy Appendix X. A prioritized list of areas for aquatic restoration based on aquatic values present is as follows: (1) Lower 11 miles of Jackson Creek; (2) Beaver Creek; (3) Squaw Creek; (4) Cutthroat trout tributaries in WAAs C, E, J; (5) upper Jackson Creek from Luck Creek Flats to Falcon Creek. These aquatic values are each affected differently by the variety of processes taking place in all the different WAAs.

Because there are numerous potential road-related aquatic restoration projects, it is critical to identify the highest priority WAAs where such work will most benefit the resources listed above (Table 61). The prioritization scheme reflected in Table 61 was devised based on known aquatic values, stream channel conditions, and dominant processes assessed for each WAA. The known or potential impacts emanating from each WAA was an important part of the prioritization, not merely the aquatic resources listed for each WAA. For example, WAA "A" is shown as affecting aquatic resources in the lower main stem of Jackson Creek. While these values are a high priority to be restored, WAA "A" rated out as a low priority to do upslope work due to the dominance of private land there, indications of low landslide rates, and relatively low extension of the drainage network (possibly underestimated). WAAs rated out as "Very High" and "High" priorities are obviously the ones of highest concern.

The intention of having this relatively loose rating scheme was to identify the most critical areas for restoration while allowing room for district people to refine priorities based on new or more advanced information than was used in this analysis. The project types listed in the table are prioritized by WAA based on our assessment of processes acting in those WAAs. Some recommendations appearing in each landscape stratum section will be somewhat repetitive of measures listed in Table 61. However, one of the main purposes of Table 61 is to place a watershed prioritization context on the measures listed in each landscape stratum.

WAA	Primary Aquatic Resources Affected	Restoration Priority	Prioritized List of Upslope Project Types
C	Cutthroat, Steelhead Refuge 1, Main Stem Jackson Creek	Very High	Reduce extension of drainage network, reduce landslide risk, reduce plugged culvert potential, increase large wood in class III/IV streams
E	Cutthroat, Steelhead Refuge 1, Main Stem Jackson Creek	Very High	Reduce landslide risk, reduce potential for plugged culverts reduce extension of the drainage network
S	Devils Knob Creek (cold water source), Beaver Creek Values, lower Main Stem Jackson Creek	Very High	Reduce landslide risk/culvert plugging potential, reduce extension of drainage network, increase wood in class III/IV streams as necessary
T	Beaver Creek Values, lower Main Stem Jackson Creek	Very High	Pursue riparian conservation easements with private landowners, reduce culvert plugging potential, reduce extension of drainage network, increase large wood in class III/IV streams, reduce landslide risk
R	Beaver Creek Values, lower Main Stem Jackson Creek	Very High	Reduce landslide risk/culvert plugging potential
U	Beaver Creek Values, lower Main Stem Jackson Creek	Very High	Pursue riparian conservation easements, reduce culvert plugging potential, reduce extension of drainage network, increase large wood in class III/IV streams
X	Donegan Creek (cold water source), Migratory Cutthroat, Steelhead Refuge 2, Main Stem Jackson Creek	Very High	Reduce landslide risk/culvert plugging potential, examine effects of roads on subsurface drainage of springs
Q	Beaver Creek Values, lower Main Stem Jackson Creek	High	Reduce culvert plugging potential, reduce extension of drainage network
P	Beaver Creek Values, lower Main Stem Jackson Creek	High	Reduce culvert plugging potential/landslide risk
O	Cutthroat, Spring Chinook Stronghold, Main Stem Jackson	High	Reduce landslide risk/culvert plugging potential
J	Cutthroat, Steelhead Refuge 1, Main Stem Jackson Creek	High	Reduce landslide risk/culvert plugging potential
N	Spring Chinook Stronghold, Main Stem Jackson Creek	High	Reduce landslide risk/culvert plugging potential, reduce extension of drainage network
H	Steelhead Refuge 1, lower Falcon Creek	High	Reduce landslide risk/culvert plugging potential
G	Steelhead Refuge 1, Falcon Creek	Medium	Evaluate floodplain connectivity in lower 3 miles Falcon Creek, reduce culvert plugging potential/landslide risk
B	Cutthroat, Main Stem Jackson	Medium	Reduce culvert plugging potential, reduce extension of drainage network in headwaters
I	Cutthroat, Steelhead Refuge 1, Main Stem Jackson	Medium	Reduce culvert plugging potential/landslide risk
L	Migratory Cutthroat, Steelhead Refuge 2, Main Stem Jackson Creek	Medium	Reduce culvert plugging potential/landslide risk
K	Migratory Cutthroat, Steelhead Refuge 2	Medium	Reduce culvert plugging potential/landslide risk
W	Cutthroat, Main Stem Jackson Creek	Medium	Reduce culvert plugging potential, reduce extension of drainage network in headwaters
M	Cutthroat, Steelhead, Main Stem Jackson Creek	Medium	Reduce culvert plugging potential, reduce extension of drainage network
D	Steelhead Refuge 1, Main Stem Jackson Creek	Low	Reduce culvert plugging potential, reduce extension of drainage network
F	Cutthroat, Steelhead Refuge 1	Low	Examine floodplain connectivity and riparian silvicultural opportunities for lower 0.5 mile of Lonestar Creek
V	lower Main Stem Jackson Creek	Low	Pursue conservation easements for riparian areas w/private landowners
A	lower Main Stem Jackson Creek	Low	Pursue conservation easements for riparian areas w/private landowners

**Table BASINREST. Prioritized list of WAAs with prioritized upslope road-related watershed restoration project types. This list does not include all recommended restoration measures in the basin.**

## Basin-wide Land Management Recommendations for Wildlife and Vegetation

The following are basin-wide recommendations for Wildlife and Vegetation

- Priority*
1. In conjunction with watershed analysis and project planning in a WAA, conduct intensive field inventory of all special and unique habitats. Follow inventory procedures developed and outlined in (Appendix CC).
  2. Site-specific analysis and prescription for protection and recovery of unique habitats will be developed by district wildlife biologist and botanist team, and included in project EA's. Analysis will include core zone and zone of influence.
  3. Reduce occurrence of roads in microclimate (<600 feet) and hydrologic influence zones associated with unique habitats.
  4. Defer timber harvest or road construction activities within core zone, as described in Table 62, unless determined to benefit unique habitat.
  5. For timber harvest within influence zones of unique habitats, minimize risk of impact to unique habitat values, as described in Table 62.
  6. By breast height age 20, the average trees per acre on sampled plantations was 713. This rapid and complete domination by conifers negatively impacts early successional processes. To allow a prolonged establishment period, site-specific reforestation prescriptions with reduced planting density and accepting lower stocking for certification should be developed. The same objective, at a higher cost, could be met with thinning. However, funds for timber stand improvement are declining and unpredictable.
  7. Manage stands to provide, at least, the snag and down woody debris amounts described in the Desired Future Condition.
  8. Conduct stand exams in managed stands to determine whether they have the structure and composition necessary to meet the vegetation Desired Future Condition. The first priority for examination are stands where vegetation manipulation can occur.
  9. Salvage is acceptable outside of Riparian Reserves. Adjusting Riparian Reserve buffers for salvage is not recommended. Defer salvage harvest of standing dead and dying timber in WAA's that are deficient in 40 acre area distribution of snags.
- 24 Oct 01  
WAA's  
2000-2001*

HABITAT	ZONE OF INFLUENCE <sup>1</sup>	CORE ZONE <sup>1</sup>
Ponds	400 ft	300 ft
Bog	650 ft	450 ft
Swamp	400 ft	200 ft
Swamp: skunk cabbage	400 ft	200 ft
Sedge meadow	400 ft	300 ft
Vine maple talus	200 ft at the base	----
Mesic meadow	400 ft	200 ft
Moist rock garden	400 ft	200 ft
Mineral deposits	500 ft	400 ft
Dry meadows	400 ft	200 ft
Rock outcrop	300 ft	150 ft
Dry rock garden	400 ft	200 ft
Talus (non forest)	200 ft at the base	150 ft
Talus (forest canopy)	400 ft	450 ft
Vine maple rocky soils	200 ft at the base	----
Rare forest plant associations	200 ft	200 ft

**Table 62. Recommended Protection Zone Widths and Minimum Sizes For Special Habitat Group Types. 1. These widths represent expected averages. Prescriptions are recommended to be written on a site specific basis.**

### Refuge Habitat

10. Using the process of Access and Travel Management, consider reducing road densities in the watershed to less than 3 miles of road/square mile. see Table Hab-Rd in chapter 4 (pg XXX)
11. Consider using Harvest prescriptions that maintain closed forest canopies, snags and LWD in Old growth stands. Treat understories of these stands to mimic historic disturbance regimes and minimize risk of stand replacing fire and increase sugar pine vigor.
12. Treat riparian influence zones to provide moist conditions for amphibians.
13. In addition to 300 foot buffer around ponds/lakes, when these habitats are used for breeding ponds for amphibians, maintain an additional 400 feet width of closed forest (>70% canopy closure), with down wood exceeding minimum levels averaged in DFC's described in chapter 6.

### Red tree vole

14. Establish wide spacing in young plantations, with aggressive pre-commercial thinning program, to allow fuller canopy trees with more branches in mid-canopy.

*Current  
width  
A.*

15. Maintain wide spacing to allow deep canopy limb development.<sup>1</sup>
16. Restore Douglas fir and associated species as dominant species in plantations having >25% ponderosa pine.
17. Complete R6 Timber Stand Exams in all stands, prior to project design within, incorporating parameters outlined in PNW GTR-302 Huff et. al. 1992), to allow evaluation of suitable habitat for the red tree vole.
18. When unmapped LSR patches, occupied by red-tree voles, are located and protected, identify upslope linkage corridors and manage them to provide interconnected stand linkages by maintaining closed canopy stands with enough large Douglas fir trees per acre to allow dispersal to other stands. This may provide commercial opportunities for young stand density reduction projects.

### **Special Habitats**

19. Complete intensive field inventory of all special habitats, in conjunction with watershed analysis and project planning in a WAA.<sup>2</sup>
20. Biologist and botanist team should develop site specific analysis and prescriptions for protection and recovery of habitats for project EAs. Analysis will include identification of core zone, zone of influence, site specific environmental factors controlling the habitat and wildlife use patterns or structures necessary for wildlife habitat within the unique habitat and it's zone of influence.
21. Design habitat improvement projects which are consistent with native plant policy and plant community and diversity objectives.
22. No commercial or personal use firewood cutting is permitted within the core zones of special habitat areas. Gathering of firewood is allowed only for onsite recreational use.

### **Facilities/Roads**

23. Roads presently affect a high percentage of special habitats. Risk of introducing, exotic species, increases in accessibility by livestock and human disturbance during critical periods, changes in microclimate, hydrological processes affecting special habitats, and habitat loss are all associated with roads. Opportunities exist in Jackson Creek Watershed to decommission, close, and rehabilitate soil condition and hydrological processes.

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<sup>1</sup> Bisswell noted traditional 25 year commercial thinning treatments do not sustain lower branch regrowth which reduces suitability for red tree voles).

<sup>2</sup> Inventory will follow procedures developed and outlined in RLMP supplement Appendix XZ (Willamette National Forest Special habitat Management guide pp 19-30)

24. Avoid road construction where hydrological processes influencing unique habitats will be affected.
25. Roads within 600 feet of a unique or mosaic habitat should be considered for decommissioning, closure, or rehabilitation where needed.

### **Special restoration opportunities identified during Jackson Creek watershed analysis**

26. Restore Blue Bluffs pond and rock pit. Blue Bluffs pond is a key area for the western pond turtle and red-legged frog, which are both at risk. Present conditions, including altered water depth, alteration to fish, rock pit development, and timber harvest, have all had significant effects on habitat conditions. Given current conditions, one current recreational use has been target shooting, and pond turtles are known to have been destroyed by this use. Opportunities to restore the rock pit, wetland, wetland, and adjacent forest to a more suitable condition. Rock pit restoration should be designed to rehabilitate wildlife habitat and increase aesthetic values. An inventory to determine fish species should be conducted. An evaluation of impacts to locally native aquatic species should be completed and any harmful species should be eradicated. This may involve restoring the pond to its original depth. To reduce direct human impacts, and increase wildlife viewing opportunities, change the access and viewing design to reduce disturbance. Decommission that portion of the road nearest the pond, and revegetate. Pond turtle nesting habitat enhancement opportunities are also possible.

27. Enhance species diversity and habitat condition in ponderosa pine plantations.
28. Enhance big game and turkey habitat conditions in winter range, especially in WAAs within 4 part winter range.
29. Rejuvenate hardwood species and restore bunch grass in conjunction with species diversity treatments in ponderosa pine plantations. Opportunities may be limited or need deferral where they may impact stream habitat. Ponderosa pine plantations have potential long term impacts on local old growth related species. Priorities for treatment are areas to meet condition objectives to maintain and restore old growth habitat characteristics in LSR and riparian reserves and matrix and some ponderosa pine plantations on north aspects and above 4000 feet. These areas are far outside their natural range of conditions and may need treatment first.

### **Basin-wide Land Management Recommendations for Social Resources**

The following are basin-wide recommendations for Social Resources including Recreation, Transportation Planning, and Heritage Resources.



## **Recreation**

1. Enhance visitor's recreation experiences and understanding of natural systems.
2. Promote recognition of the need to protect our natural and cultural heritage for present and future generations.
3. Promote a land and outdoor ethic among users.
4. Complement potential or existing interpretive opportunities in the surrounding area.
5. Enhance the economic viability of communities in the area.
6. Restrict ORV use where damage to special habitats is an issue
7. Devise a basin-wide, interdisciplinary Recreation Management Plan to incorporate issues involving recreation impacts to riparian areas and relationships between recreational activities and Aquatic Conservation Strategy objectives.
8. Review Rogue-Umpqua Divide Wilderness Plan for consistency with the President's Plan. The President's Plan stipulates that the most restrictive direction and standards and guidelines will apply.
9. The Jackson Creek Corridor Dispersed Recreation Plan, which was started in 1990, should be reviewed for consistency with the President's Plan and possibly expanded to include the entire watershed.
10. Incorporate direction from the President's Plan into the Wild and Scenic River Planning process for Jackson Creek. The region directed forests to complete the eligibility determination for use in the watershed analysis process.

## **Transportation Planning**

11. Review the district's Access and Travel Management Plan for consistency with the Forest Plan. We recommend this be done as an I.D. team process.
12. The design and management of road systems will be assessed to recognize possible impacts to the wilderness. New roads should be planned to consider impacts on visitor use patterns and promote opportunities for solitude in wilderness when possible. The desired accessibility to wilderness trailheads will be considered when reconstructing, paving, or generally upgrading current roads. Maintenance levels of roads will be commensurate with the amount and kind of traffic desired at a wilderness trailhead.

## **Heritage Resources**

Federal actions or Federally permitted or approved actions planned for the Jackson Creek watershed will follow the compliance process for the National Historic Preservation Act. This process will include the following:

13. Heritage resource inventories will be completed for undertakings with the potential to effect heritage resources including traditional use areas. The inventory results will be submitted to the State Historic Preservation Office (SHPO) for review and completion of legal compliance. If a proposed undertaking will effect heritage resources the necessary evaluation and mitigation will be completed before the undertaking is allowed to proceed. All steps in this process will be coordinated with the SHPO and, if necessary, the Advisory Council on Historic Preservation.
14. The Cow Creek will be consulted on any undertaking that has the potential to effect traditional use areas. Further information should be obtained from the Cow Creek on the use of this area. Projects with the potential to impact the traditional use area known as the Huckleberry Patch will include consultation with the SHPO, the Advisory Council on Historic Preservation, and the Cow Creek Band of the Umpqua Tribe of Indians.
15. National Historic Preservation Act A prehistoric village site has been recorded on private lands within the Jackson Creek drainage. This site is being vandalized by looters. Negotiated land exchanges should include the site areas within T. 30 S., R. 1 W. section 22 in order to provide protection for this site. Land exchanges should also include the private lands in the area of Beaver Lake which have been identified by the Cow Creek as being a traditional use area. The area has a high potential for archaeological resources.

## **Recommendations for Ecosystem Strata**

The following recommendations have been developed to meet specific Desired Future Conditions pertaining to each ecosystem stratum described in chapters 4 and 6. These recommendations are designed to be more site-specific and detailed than basin-wide recommendations listed up to this point. The recommendations are presented with the same resource categories used in the basin-wide discussion.

### **Beaver Creek (WAAs P, Q, R, S, T, and U)**

#### **Beaver Creek Stratum - Aquatic Recommendations**

Recommendations 1-7 are a prioritized, sequential list of measures judged to be necessary to restore aquatic resources in Beaver Creek. They are listed in the recommended order of accomplishment.

1. Defer all road construction until aquatic conditions recover as stated in aquatic DFCs (see Chapter 6).
2. Conduct timber harvest activities only in stands with >70% canopy closure. In stands where timber harvest is conducted, canopy closure should not be reduced below 70%, as measured by Moosehorn. This threshold should be observed until fine sediment levels on the stream bed surface average less than 15% in the lower 1.5 miles of Beaver Creek as determined by pebble counts (see aquatic DFCs in chapter 6).
3. Conduct interdisciplinary Access and Travel Management plan for Beaver Creek. In this plan, emphasize attainment of ACS objectives for key watersheds, and address the following elements:
  - \* Assessment of roads determined to create high impacts or high risk to aquatic resources.
  - \* Assessment of roads within the influence zone of unique habitats or above unique habitats.
  - \* Assessment of roads in riparian reserves
  - \* Consideration of Beaver Creek road system as part of an alternate access route to upper Jackson Creek given that Jackson Creek road is a high priority for decommissioning from the aquatic resource perspective.
  - \* Consider de-commissioning roads that become damaged during storms in the future.
4. Complete WIN inventories in Beaver Creek and carry out road-related watershed restoration projects.
  - \* In earthflow terrain, emphasize peakflow concerns as related to extension of the drainage network from roads as well as potential plugging of culverts. This is a strong concern in WAAs T, U, and the upper portions of WAA S. In particular, the 520 spur of the 31 Road (in Stampede Creek) is a high priority for decommissioning due to past culvert plugging and water diversion into erosive stream channels. This risk remains high today.
  - \* In WAAs R and S, focus on landslide concerns and culvert plugging potential because these WAAs have undergone relatively high landslide rates due to management activities.
  - \* Use I.D. team process to prioritize watershed restoration sites upon completion of restoration inventories.
5. Pursue land exchange or Conservation Easements with private landowners of riparian areas in the watershed. A prioritized list of opportunities to explore follows below:
  - A. Mouth of Beaver Creek T30S, R1W, sec. 22. Emphasize restoring riparian vegetative communities and instream large wood in lower Beaver Creek to eventually average 60-90 pieces/mile.
  - B. Main stem of Beaver Creek, T30S, R1W, sec. 34. Emphasize reducing landslide/erosion risks and restoration of riparian vegetative communities,

- C. Upslope sections in earthflow terrain, T30S, R1W, sections 28, 30 & 32. Emphasize restoration of riparian vegetative communities, large wood components in stream channels and stream flow regimes.
6. Upon recovery of sediment and flow regimes, begin to restore large wood to the Beaver Creek channel to average 60-110 pieces/mile. This is the best available estimate of large wood requirements for streams with riparian and upslope areas dominated by late seral vegetative communities. The definition of large wood is at least 24" diameter at the small end, and 50' in length. Wood should be placed in the main channel and in side channel areas to increase nutrient retention, aquatic productivity and aquatic habitat complexity. No large wood should be placed into the stream until an interdisciplinary planning effort shows that peak flow and sediment regimes have substantially recovered from their current conditions.
7. Inventory and prioritize silvicultural opportunities to accelerate development of late seral riparian communities. Opportunities for this type of project in the short term should be limited to the upper reaches of WAAs Q and R (Pipestone, Fawn, and Maverick Creeks) with only <0.5 mile of class IV stream treated in each WAA. Treatments should be considered experimental and should be followed up with monitoring to determine whether objectives are being met.
8. Evaluate roads in Devil's Knob Creek drainage, in terms of their effect on water yield, to correct interception of groundwater and/or routing from other basins. The objective of this work is to protect the integrity of the quality and quantity of water flowing from Devils Knob Creek into Beaver Creek at summer low flows.

### **Beaver Creek Stratum - Wildlife and Vegetation Recommendations**

1. Conduct Administrative study, with ecologist and botanist assistance, to evaluate methods to restore native bunchgrass meadows.
2. Evaluate young ponderosa pine plantations (<5 years old) for opportunities to reduce ponderosa pine stocking to historic species composition.

### **North Side Jackson Creek (WAAs A, B, D, and W)**

#### **North Side Jackson Creek - Aquatic Recommendations**

1. Examine and evaluate options for re-establishing fish population connectivity in streams with culverts within fish distributions.
2. Examine and evaluate the effects of the Jackson Creek valley bottom road on sediment, wood, and stream flow connectivity between tributaries and main stem of Jackson Creek.

3. In WAA C, conduct timber harvest activities only in stands with >70% canopy closure. In stands where timber harvest is conducted, do not reduce canopy closure below 70% as measured by Moosehorn. This threshold should be observed until aquatic desired future conditions are being met. One exception to this recommended constraint is restoration of the Oak woodland in T31S, R1E, section 3.
4. Utilize I.D. team process to prioritize restoration opportunities. Emphasize culvert plugging potential and peak flow concerns as related to channel extension from roads in the following areas: WAA C, the western portion of WAA D, and upper portions of WAAs B & W. These areas have or are suspected of having highly erosive stream channels where increased peak flows would tend to increase in-stream erosion and downstream sedimentation.

### **North Side Jackson Creek - Wildlife and Vegetation Recommendations**

1. In Watershed Analysis Areas A, B, D and W, the Desired Future Condition can be met by using silvicultural methods to:
  - a) improve the health of the sugar pine
  - b) restore species composition and structure more typical of native forests in the following stand types:
    - i) off-site pine plantations,
    - ii) Douglas-fir/ponderosa pine plantations,
    - iii) selection/salvage harvested stands,
  - c) restore high fire frequency areas to composition and structure that is more sustainable and typical of native forests prior to fire suppression.

These activities can be extended through the riparian zones of intermittent streams if they meet Aquatic Conservation Strategy Objectives and benefit those wildlife species given additional protection under Riparian Reserve Scenario 1. Interior, late seral habitat should not be reduced by these activities. Take advantage of these opportunities to place large wood in intermittent streams as deemed desirable.

2. Conduct an Administrative study, with ecologist and botanist assistance, to evaluate methods to restore native bunchgrass meadows and oak woodland located in \*T31S R1E, section 3. There is evidence that continued livestock grazing will prevent the recovery of oak woodlands even if other measures are taken. Investigate opportunities to restore and maintain additional woodlands and unique habitats.

### **Late Succession Reserves (WAAs E, F, G, H, I, J, K, L, M and X)**

#### **Late Successional Reserve - Aquatic Recommendations**

1. Conduct WIN inventories in the following WAAs in order of importance: X, E, J, H (focus strongly on 310 road), and M. This is our judgment of a prioritized order for the LSR (see appendix Aquatic Restoration Strategy for details).  
For this work emphasize:
  - \* Focus on landslide risk, culvert plugging potential, and peakflow effects in WAA E.
  - \* Focus primarily on landslide risk and culvert plugging potential in other WAAs.
  - \* Utilize an I.D. team process to prioritize restoration sites
2. Evaluate fish passage conditions in Black Canyon Creek drainage at 2 stream crossings on road 2950 (see appendix Fish Passage for details).
3. Evaluate roads in Donegan and Paradise Creeks in terms of their effect on water yield to correct interception of groundwater and/or routing from their basins. These streams are important providers of cool water at summer low flows.
4. Evaluate floodplain connectivity and riparian zone function for lower 3 miles of Falcon Creek along road 29-300.
5. In the portion of WAA E that lies outside of the LSR boundary, conduct timber harvest activities only in stands with >70% canopy closure. In stands where timber harvest is conducted, do not reduce canopy closure below 70% as measured by Moosehorn. This threshold should be observed until aquatic desired future conditions are being met.

### **Late Successional Reserve - Wildlife and Vegetation Recommendations**

1. Within the LSR, the Desired Future Condition can be met by using silvicultural methods to:
  - a) improve the health of individual sugar pines;
  - b) restore species composition and structure more typical of native forests in the following stand types:
    - i) off-site pine plantations.
    - ii) Douglas-fir/ponderosa pine plantations.

For the small localized areas not designated as LSR but included in this stratum due to geographic logic, the Desired Future Condition can be met by using silvicultural methods to :

- a) improve the health of individual sugar pines;
- b) restore species composition and structure more typical of native forests in the following stand types:
  - i) off-site pine plantations,
  - ii) Douglas-fir/ponderosa pine plantations,
  - iii) selection/salvage harvested stands,
- c) restore high fire frequency areas to composition and structure that is more sustainable and typical of native forests prior to fire suppression.

These activities can be extended through the riparian zones of intermittent streams if they meet Aquatic Conservation Strategy Objectives and benefit those wildlife species given additional

protection under Riparian Reserve Scenario 1. Interior, late seral habitat should not be reduced by these activities. Take advantage of these opportunities to place large wood in intermittent streams as deemed desirable.

2. Re-introduce fire as a disturbance process in the Squaw Flat RNA
3. Conduct an Administrative study, with ecologist and botanist assistance, to evaluate methods to restore and maintain the productivity of huckleberry fields on the Rogue-Umpqua Divide.

## **Whisky/Coffin/Pickett (WAA's N, O, and V)**

### **Whisky/Coffin/Pickett - Aquatic Recommendations**

1. Include active earthflows in Soup Creek with Riparian reserves. These areas are shown on the riparian reserve map.
2. Conduct WIN inventories and interdisciplinary ATM process to evaluate road effects in WAA's O & N.
  - \* In WAA O, focus on reducing landslide risk associated with roads.
  - \* In WAA N, focus on restoration of hydrologic functions, e.g.; channel extension and earthflow hydraulics.

### **Whisky/Coffin/Pickett - Wildlife and Vegetation Recommendations**

1. Evaluate both WAA's using the elk habitat effectiveness model to identify a reduced road density to improve elk winter range and calving conditions.
2. The Desired Future Condition can be met by using silvicultural methods to :
  - a) improve the health of individual sugar pines;
  - b) restore species composition and structure more typical of native forests in the following stand types:
    - i) off-site pine plantations,
    - ii) Douglas-fir/ponderosa pine plantations,
    - iii) selection/salvage harvested stands,
  - c) Except in WAA V, restore high fire frequency areas to composition and structure that is more sustainable and typical of native forests prior to fire suppression.

These activities can be extended through the riparian zones of intermittent streams if they meet Aquatic Conservation Strategy Objectives and benefit those wildlife species given additional protection under Riparian Reserve Scenario 1. Interior, late seral habitat should not be reduced by these activities. Take advantage of these opportunities to place large wood in intermittent streams as deemed desirable.

- 3 Survey for oak woodlands. If necessary, conduct an administrative study, with ecologist and botanist assistance, to evaluate methods to restore native bunchgrass meadows and oak woodland.

## **Main Stem of Jackson Creek (from its mouth to Lonewoman Creek)**

### **Main Stem Jackson Creek - Aquatic Recommendations**

1. Conduct an interdisciplinary ATM planning process where Jackson Creek road is a high priority for decommissioning, based on the many documented resource concerns (see “Effects of Valley Bottom Road” section in Chapter 4). This road is the single highest priority road for decommissioning in the basin, because of the broad range of aquatic and riparian wildlife resources it affects. From the aquatic standpoint, the portion from the mouth of Beaver Creek to Squaw Creek is of very high importance to the three fish stocks at risk. Another high priority project potentially involving the valley bottom road would be floodplain restoration in the Luck Creek Flats area at approximately Milepost 13.
2. Restrict access to potential salmon poachers during summer periods when adult spring chinook hold in Jackson Creek. This recommendation is consistent with the 1990 LRMP standard and guideline #C2-VI, page IV-183.
3. Once sediment and flow regimes and floodplain connectivity are re-established, add large wood to the mainstem. High priority areas are:
  - \* Alluvial deposit area at the mouth of Beaver Creek (private land)
  - \* Channel margin and floodplain areas between Beaver and Squaw Creeks
  - \* Luck Creek Flats
  - \* Alluvial depositional reach around the mouth of Falcon Creek

In this context, the definition of large wood is >50' in length and >24" diameter at the small end. No wood should be placed into the stream until floodplain connectivity, peak flow, and sediment regimes recover from their currently poor condition.

4. Restore pond turtle nesting habitat on north side of Jackson Creek.



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## Acronyms Commonly Used in this Document

ACS	Aquatic Conservation Strategy
ATM	Access and Travel Management
BLM	Bureau of Land Management
CCC	Civilian Conservation Corps
cfs	Cubic Feet per Second
CHU	Critical Habitat Unit
CPOM	Coarse Particulate Organic Matter
CWD	Coarse Woody Debris, AKA Large Woody Debris
DCA	Designated Conservation Area
DFC	Desired Future Condition
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement for the 1990 Umpqua National Forest Land and Resource Management Plan
FSEIS	Final Supplemental Environmental Impact Statement on Management of Habitat for Late -Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl
FEMAT	Forest Ecosystem Management Assessment Team
GIS	Geographic Information System
HCA	Habitat Conservation Area
LAC	Limits of Acceptable Change
LRMP	Land Resource Management Plan
LSR	Late Successional Reserve
LWD	Large Woody Debris, AKA Coarse Woody Debris
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
ODFW	Oregon Department of Fish and Wildlife
ONHP	Oregon Natural Heritage Program
PMR	Pacific Meridian Resources
REAP	Regional Ecosystem Assessment Project
REO	Regional Ecosystem Office

## Acronyms Commonly Used in this Document, Continued

RNA	Research Natural Area
ROD	Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl
S&G	Standards and Guidelines
SCORP	State Comprehensive Outdoor Recreation Plan
UNF	Umpqua National Forest
UPAD	Umpqua Project Activities Database
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WAA	Watershed Analysis Area
WIN	Watershed Improvement Needs

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