CHAPTER 3 REFERENCE CONDITIONS

3.1 VEGETATION AND FOREST HEALTH

3.1.1 Fire
3.1.2 Ecological Sustainability
3.1.3 Change in Hydrologic Function
3.1.4 Non-timber Vegetation Condition

3.2 RIPARIAN AND AQUATIC HABITAT

3.3.1 Fish Passage
Much of the analysis area was open for migration and dispersal of aquatic organisms in pre-settlement conditions. However, with the construction of roads several streams in the analysis area have impaired passage. Natural barriers may exist in some of the drainages in the analysis, but a comprehensive look at additional habitat that would be available for fish and other aquatic organisms if roads were removed has not been completed.

3.3.2 Sedimentation
Pre-settlement sediment yield from the analysis area is impossible to determine, but natural rates of sediment supply are determined by rates of sediment production from soil and channel erosion, and landslides. Generally it is assumed that sediment production in the analysis area was relatively low in pre-settlement periods.

3.3.3 Structural Habitat/Channel Changes
Habitat conditions in the pre-settlement period were probably better than at present. Under INFISH, riparian management objectives have been set for streams. These can be generally used for a reasonable estimate of reference conditions for channels and stream habitat.

Table __ INFISH Riparian Management Objectives

Pool Freq. (per mi)	Bank Stability (%)	W/D Ratio	LWD (pieces/mi)
56-96	>80%	<10	>20

3.3.4 Water Temperature
Reference conditions for water temperature are generally described in the Oregon Water Quality Standards for stream temperature, which provide that stream temperature should be managed so at to “minimize additional (stream) warming due to anthropogenic sources.” The purpose of the standard is to protect designated temperature-sensitive beneficial uses including designated salmonid life cylcles. The seven-day average maximum stream temperature for streams in the analysis area is 20 degrees Celsius, and it is protective of redband trout.

3.3.5 Riparian Vegetation/Riparian Fuels Treatments

3.3 HUMAN USES

3.4.1 Roads
3.4.2 Livestock Grazing

Reference conditions for livestock grazing

3.4.3 Recreation
3.4.4 Mining

3.4 WILDLIFE

3.4.1 TES Wildlife Species
3.4.2 Old Growth
3.4.3 Connectivity
3.4.4 Cover
3.4.5 Neo-tropical Migratory Birds

4 SYNTHESIS AND RECOMMENDATIONS

NEW- Use issues to ID and organize synthesis

Sample: synthesis questions to answer for each section. If there is a data gap, identify the gap and need for information. Specialists could lump synthesis by key issue if appropriate.

4.1 VEGETATION AND FOREST HEALTH
4.1.1 Fire

What are the obvious differences between existing and reference conditions?

What in your estimate are the resource trends?

What process or mechanism do you think is responsible for similarities, differences or trends?

Are there any natural or human-caused disturbances or activities that have fundamentally altered the resource so that it is difficult to achieve management objectives?

What are the recommendations for meeting management objectives?

4.1.2 Ecological Sustainability
4.1.3 Change in Hydrologic Function
4.1.4 Non-timber Vegetation Condition

4.2 RIPARIAN AND AQUATIC HABITAT
4.3.1 Fish Passage
4.3.2 Sedimentation

It is recommended future projects in the watershed be designed in such a way that there will be a very low probability that there will be an adverse effect on fish species located down stream of the project areas. There must not be a measurable increase in stream sediment delivery in this watershed and efforts should be made to reduce the existing sources of non-natural sediment. Large woody material must not be removed from stream

channels. New roads that cross-streams or enter RHCAs should not be constructed unless absolutely necessary. If they must be constructed, then they must be designed with restrictive mitigation to protect water quality. Existing protection measures should protect other instream habitat needs such as stream cover, bank stability, and water temperature. Implementation guidelines below lists general management measures (Standards and Guidelines) that must be followed for all activities associated with projects in the analysis area.

The following fisheries and watershed restoration activities involving road reconstruction and drainage Improvement needs are recommended:

3.4 miles of a drawbottom road 7040 that parallels Balm Creek and runs from the Balm Creek reservoir to the forest service boundary needs brought back up to maintenance level and drainage improved. This road is a potential haul road.

0.5 miles of the 7065175 (labeled 125 on the ground) needs closed and/or drainage restoration above the 7065191 junction. This is not a haul road.

1.0 mile of the 6700800 road that runs parallel to Velvet Creek needs reconstructed for haul use and to improve drainage problems.

1.0 mile of 7050060 road that runs along Clover Creek needs reconstruction to improve drainage problems

4.3.3 Structural Habitat/Channel Changes
4.3.4 Water Temperature
4.3.5 Riparian Vegetation/Riparian Fuels Treatments

Field observations have confirmed the RHCAs within the watershed analysis area are at moderate risk of an intense wildfire in some of these drainages due to the high fuel loads and are also overstocked in the understory; thereby creating a situation where trees are susceptible to mortality through infestation of insects and competition for water and nutrients.

Under INFISH, in non priority watersheds a watershed analysis is not required to modify RHCA if a site specific analysis has determined an ecological need to maintain or enhance RMOs. INFISH defines the RHCAs as having a standard width of 300 feet for Class I and II, 150 feet for Class III, and 50 feet for Class IV streams. These buffers can be entered into as long as the stipulations under the Timber Management section are met. These state that harvest can take place where catastrophic events resulted in degraded riparian conditions and "...where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other Riparian Management Objectives (RMOs), and where adverse effects on listed anadromous fish can be avoided." Harvest can also take place in RHCAs when silvicultural practices are applied to acquire desired vegetation characteristics in order to meet the following RMOs.

The specific modification of RHCA widths on a case by case basis can and should be used on projects in the watershed to improve riparian conifer stand conditions. The removal of standing and down dead trees within RHCAs will aid in reducing the risk of intense wildfire and provide opportunities for regeneration. Thinning overstocked stands will improve residual tree vigor and take advantage of site productivity. Treatment will favor and promote tree species best suited for the site. Best suited tree species will be more resistent to insect infestation and disease as well as catastrophic fire. There will be no measurable changes to sediment delivery rates as well as no direct impacts on stream shade and bank stability due to site specific marking and layout of units with proposed

harvest. The parameters that will be considered in order to determine harvest in RHCAs will include existing levels of large woody debris in the riparian area and stream channel, existing condition of the riparian vegetation, location of primary and secondary terraces, side slopes, soil type and depth, ground cover and stability, and proximity of the RHCA to natural openings

4.3 HUMAN USES
4.4.1 Roads
4.4.2 Livestock Grazing
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4.4.5 Neo-tropical Migratory Birds

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