STEP 2 - *ISSUES and KEY QUESTIONS*

INTRODUCTION

The following ten issues have been identified by the District, Forest Ecosystem Analysis Team, and District Ranger: **Upslope Hydrologic Processes, Riparian Reserves**, **Aquatic and Riparian Dependent Species**, **Forest Health**, **Fire Management, Late-Successional Habitat**, **Terrestrial Wildlife**, **Roads**, **Timber Outputs**, and **Human Uses**. A background statement for each issue was developed to provide the context of the issue and focus for the analysis. Key Questions follow and are presented for Steps 3, 4, and 5.

The desired conditions and recommendations for each issue will be discussed in the final part of Step 5 (following a summary of management direction) and in Step 6.

ISSUES and KEY QUESTIONS

UPSLOPE HYDROLOGIC PROCESSES - Human activities, e.g., roads, timber harvest, mining, etc., have impacted streams and downstream beneficial uses. The watershed contains several different geologic and soil types, including easily eroded granitic soils. The large variation in snow and rainfall results in variable hydrologic and erosion processes. A small portion of the watershed is designated an Area with Watershed Concerns (AWWCs) in the *Forest Plan* (about 500 acres of National Forest land near Messner Gulch) but several subwatersheds; French, Sugar, and Boulder Creeks have high cumulative watershed effects as modeled in the *Forest Plan*. This analysis will discuss the important hydrologic and erosion processes, reevaluate cumulative watershed effects, and make recommendations for future management in subwatersheds potentially impacted by Forest Service activities.

STEP 3 - CURRENT CONDITIONS

1- What are the dominant hydrologic and erosional characteristics and processes within this watershed?

2- What parts of the watershed are considered Areas with Watershed Concerns (AWWCs) in the *Forest Plan* and what additional areas will be evaluated in this process? What parameters are used to make this determination?

STEP 4 - REFERENCE CONDITIONS

1- What were historical (pre-Euro-American settlement) and reference erosion rates, and what disturbances affected them?

STEP 5 - INTERPRETATION

1- Are there changes between current and reference/ historical erosion rates and what are their causes?

2- What are the hydrologic/erosional concerns in the watershed and what management strategies should be used for each subwatershed to minimize impacts from upslope hydrologic processes?

3- Which subwatersheds should be considered Areas with Watershed Concerns, when will they be considered recovered, and how can recovery be promoted?

4- What are the trends for upslope hydrologic processes in the watershed?

RIPARIAN RESERVES - The *Northwest Forest Plan Record of Decision (ROD)*, incorporated into the *Forest Plan*, establishes Riparian Reserves as a land allocation where riparian-dependent resources receive primary emphasis. Riparian Reserves are also intended to provide habitat connectivity for late-seral dependent species. Interim Riparian Reserves are described in the *ROD*, and subject to refinement recommendations made through the analysis process for the watershed. The analysis will discuss current and reference conditions of riparian areas and make recommendations for field delineation and management of Riparian Reserves in the watershed.

STEP 3 - CURRENT CONDITIONS

1- What is the extent of interim Riparian Reserves in the watershed and how are they defined?

2- What are the current vegetation conditions in the interim Riparian Reserves?

3- What are the current stream channel characteristics and aquatic species habitat conditions?

4- What are the water quality, quantity, and beneficial-use conditions of streams within the analysis area?

STEP 4 - REFERENCE CONDITIONS

1- What are the historic and reference riparian conditions in the watershed?

STEP 5 - INTERPRETATION

1- What are the natural and human causes of change between historical/reference and current riparian area conditions?

2- What are the limiting factors for riparian habitats?

3- What is the role of Riparian Reserves for terrestrial wildlife habitat and connectivity?

4- How should Riparian Reserves be delineated on-the-ground in this watershed and what activities are appropriate in the different types of Riparian Reserves?

5- What are the trends for riparian areas in the watershed?

AQUATIC DEPENDENT SPECIES - Anadromous and resident fish spawn and rear in the Scott River and its tributaries within the watershed. Several of these species are considered at-risk, and may be placed on the Federal Endangered Species list. Amphibian and reptile species are dependent upon aquatic and riparian habitat. This analysis will describe the current status of aquatic dependent species, as compared to historic populations, describe their trends, and describe maintenance, protection, and recovery needs of species at-risk.

STEP 3 - CURRENT CONDITIONS

1- What is the distribution and population size of native and non-native aquatic dependent species?

2- What aquatic/riparian dependent species are identified as at-risk?

STEP 4 - REFERENCE CONDITIONS

1- What were the distributions and population sizes of aquatic dependent species?

STEP 5 - INTERPRETATION

1- What are the natural and human causes of change between historical/reference and current species distribution and population sizes?

2- What areas are critical for maintenance, protection, and recovery for at-risk species?

3- What are the population trends for aquatic dependent species in the watershed?

FOREST HEALTH - Due to past management practices, fire suppression, and prevention activities, some plant communities are in a condition susceptible to disturbances such as stand replacing fires or insects and disease outbreaks. In parts of the watershed, the existing conifer species composition is not sustainable over time. These conditions can impact wildlife habitats and commodity outputs. This analysis will examine the extent of forest health concerns in the watershed and recommend possible treatments for maintaining long-term forest health.

STEP 3 - CURRENT CONDITIONS

1- Where does mortality exist within the watershed and what are the current levels?

2- What are the current vegetation communities in the watershed?

3- Are there conifer stands at risk of catastrophic loss and if so, where are they located?

STEP 4 - REFERENCE CONDITIONS

1- Under natural disturbance regimes, what were the vegetation communities and what were the stand densities of the conifer communities?

2- What were the endemic levels of mortality in conifer stands?

STEP 5 - INTERPRETATION

1- How have the vegetation communities changed over time and what have been the agents of change?

2- What are forest health trends for the watershed?

FIRE MANAGEMENT - Previous to fire suppression activities, wildfires frequently burned through the watershed. Fire suppression and prevention programs have been very effective since the 1920s. Fire suppression and management activities have increased the risk of stand replacing fires. The analysis will evaluate the effect of interspersed land ownership patterns, private residences in the wildland interface, and fire protection agencies. Recommendations for fuels management, and suppression and prevention strategies will be provided.

STEP 3 - CURRENT CONDITIONS

1- What are current fuel characteristics and fire behavior potential in the watershed?

2- What are the fire protection agencies and where are their response areas within the watershed?

3- What are current fire risks in urban interface areas?

STEP 4 - REFERENCE CONDITIONS

1- What was the historic fire regime for each vegetation community?

STEP 5 - INTERPRETATION

1- What has changed and what have been the agents of change for fuels and fire behavior potential?

2- Are there high risk areas in or bordering high fire behavior potential areas and what are the management implications?

3- What are the trends for fire risks and fire behavior potential?

LATE-SUCCESSIONAL HABITAT - Areas of this watershed have been allocated as Late-Successional Reserves (LSR) to provide habitat for late-successional associated wildlife species, specifically the northern spotted owl. Past management has fragmented late-successional habitat in the LSRs and across the watershed. These activities, combined with fire suppression, have left some areas of late-successional habitat at risk to loss from large scale disturbance. This analysis will evaluate the current condition of and make recommendations for providing and sustaining late-successional habitat. The analysis will also assess the existing condition of late-successional connectivity and recommend ways to provide connectivity across the watershed and to adjacent watersheds.

STEP 3 - CURRENT CONDITIONS

1- How much of the watershed is currently late-successional habitat, where is it located, and what condition is it in?

2- What areas of the watershed are capable of supporting late-successional habitat?

3- Where is the existing connectivity and dispersal habitat across analysis area and to adjacent watersheds?

STEP 4 - REFERENCE CONDITIONS

1- What was the historic distribution and pattern of late-successional habitat in the watershed?

2- What were the historic dispersal routes in the watershed?

STEP 5 - INTERPRETATION

1- In terms of late-successional habitat and connectivity, what has changed from historic to the present and what were the agents of change?

2- What are the future trends in late-successional habitat and connectivity?

TERRESTRIAL WILDLIFE - The watershed is home to many wildlife species. Including Threatened and Endangered species (bald eagle, spotted owl), Forest Service sensitive species (goshawk, marten and fisher), species of special interest (deer and elk), and Survey and Manage species from the *Forest Plan*. The distribution and condition of habitat for these species can have implications for management activities in the watershed. This analysis will evaluate the availability of habitats for these species and recommend strategies to maintain them over time.

STEP 3 - CURRENT CONDITIONS

1- For the species identified in this analysis:
- **a-** What are the habitat needs?
- **b-** Where is the habitat in the watershed?
- **c-** How much habitat is in the watershed?

STEP 4 - REFERENCE CONDITIONS

1- What was the historic distribution of habitats for the identified species?

STEP 5 - INTERPRETATION

1- For these habitats, what has changed from historic to present and what have been the agents of change?

2- What are the future trends for these habitats?

3- Based on current direction, what are the implications for forest management in providing habitat for these species?

ROADS - The watershed road system was primarily developed to provide access for timber sales. The road system currently provides access for timber, fire management, recreational use, access to wilderness trailheads, hunting, woodcutting, sightseeing, etc., while causing some impacts to streams, riparian areas, and wildlife. A declining road management budget has decreased road maintenance. This analysis will identify current road system uses, impacts, and resource concerns, and provide the basis for a travel and access management plan.

STEP 3 - CURRENT CONDITIONS

1- What are the current conditions and uses of roads within the watershed?

STEP 4 - REFERENCE CONDITIONS

1- Why and how was the road system developed?

STEP 5 - INTERPRETATION

1- How have road uses changed from the past and why?

2- What resource and social concerns exist with the current road system?

3- What are future trends in road uses, needs, and management?

TIMBER OUTPUTS ON PUBLIC LANDS - Timber harvest has been an important practice on both private and public lands in the watershed. The *Forest Plan* expects sustainable timber harvest on available lands using an ecosystem approach. This analysis

will take into account our current understanding of ecosystem needs to predict future timber yields in this watershed. It will also refine *Forest Plan* estimates of available lands and identify opportunities and make recommendations for timber outputs.

STEP 3 - CURRENT CONDITIONS

1- What are the existing harvest volumes and growth rates on timber lands?

STEP 4 - REFERENCE CONDITIONS

1- When, where, and how was timber in the watershed harvested?

STEP 5 - INTERPRETATION

1- How have timber harvest practices changed (recent past) and why?

2- How do *Forest Plan* estimates for capable, available, and suitable lands compare to those recommended in this analysis?

3- What future trends affect timber management in the watershed?

HUMAN USES - The watershed has a rich cultural heritage from American Indians, and pioneering ranchers and miners. The watershed has diverse land uses including residential, agricultural, grazing, recreational, and industrial forestry. This analysis will discuss important heritage resources, non-timber commodities, private land uses, and recreational activities, and will recommend ways to enhance or protect these uses.

STEP 3 - CURRENT CONDITIONS

1- What heritage resources exist within the watershed?

2- What non-timber commodities are utilized in the watershed?

3- What are the primary recreational uses in the watershed?

4- What are the generalized private land uses in the watershed?

STEP 4 - REFERENCE CONDITIONS

1- What were prehistoric and historic land uses within the watershed?

STEP 5 - INTERPRETATION

1- What types of cultural sites and/or uses influence current Forest management?

2- How have non-timber commodity uses changed from the past and what are their trends?

3- How have recreation uses changed from the past and what are their trends?

4- What private land uses have changed from the past and what is likely to change in the future? How do activities on private land affect management on public lands?