

CHAPTER 4 - ISSUES AND KEY QUESTIONS

Major Issues

There are 3 major issues within the Wolf Creek watershed: fisheries, habitat, and water quality and quantity. Each of these major issues has spawned a series of key questions that will assist in addressing the issue.

Issue 1 - Fisheries and Stocks at Risk - The major focus of this issue is the fish stocks deemed "at risk". What fish are present within the Siuslaw River drainage and are there any stocks at risk? What role does Wolf Creek play in terms of migration, spawning and rearing habitats, and populations numbers?

Issue 2 - Habitat, Fragmentation, and Special Status Species - The focus of this issue is on the currently listed wildlife species - the habitat quantity, quality, distribution, fragmentation, and connectivity. Also of concern is the identification of which species rely on Wolf Creek only for some critical life stage and what species are present within the Siuslaw River Basin, but not within Wolf Creek watershed. Identification of the species and possible reasons for their use or lack of use of Wolf Creek is also important. Several issues around management of Roosevelt elk have been identified by the Oregon Department of Fish and Wildlife.

Issue 3 - Water Quality and Quantity - This issue deals with understanding the role and frequency of hydrological and physical events and processes within the basin. This is translated into an attempt to determine Wolf Creek's contribution to the Siuslaw River Basin in terms of water quantity (peak and low flows) and quality (temperature and sediment). An understanding of these physical processes as it relates to management actions will help determine whether it is in balance with the needs of the inhabitants and users.

Key Questions

The following is a listing of the key questions identified by major resource. Each question was numbered with the prefix identifying the resource group, e.g., WS is water and soils. Each question was ranked by the line officer as to importance and priority to the analysis to provide the team with a sense of priorities for gathering the information and completing the analysis. The question numbers in parentheses provide a cross reference to other questions where information and/or data may come from or feed into to help fully answer the question.

Water/Soils

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
High	WS1	Where is there evidence of, or potential for, mass wasting in the watershed (what areas are sensitive)?
High	WS2	What mass wasting processes are active?
High	WS3	Where do erosion processes (mass wasting, hillslope, roads) deliver sediment to stream channels or other waters?
High	WS4	What is the hillslope erosion potential (e.g., what areas are sensitive)? (S2)
High	WS5	What is the sediment production potential from roads? (S5,S9,S2)
High	WS6	What is the inherent, natural range of soils/site productivity and has it been affected by man? (V1,V3,V5)

High	WS7	Is the amount of sediment transported to stream/water sufficient to cause a change in channel, habitat conditions, or beneficial use?
High	WS8	What is the spatial distribution of channel morphological types?
High	WS9	What were the historic channel conditions and have management actions altered them? (F5)
High	WS10	What is the spatial distribution of channels in which the hydrological processes are functioning properly?
High	WS11	What are the watershed conditions influencing hydrologic response? What are the hydrological responses (flow regimes) that influence beneficial uses? (V1,V2,R3,V4,V5,F4)
High	WS12	What is the history of flooding and what other disturbances are of hydrologic significance? (F3)
High	WS13	Are all water quality standards listed in Chapter 340 of Oregon Administrative Rules being met?
High	WS14	What are expected maximum summer temperatures for _____ duration? (F7)
High	WS15	What are the beneficial users/uses of water?

Fisheries

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
High	F1	What is the current distribution and abundance of habitat for critical life stages of stocks at risk fish species? How does it relate to natural range of variability?
High	F2	What is the distribution and abundance of habitat for critical life stages of aquatic species other than stocks at risk?
Med-Low	F3	How do disturbance events (human-caused and natural) impact habitat for all aquatic species? (V2,R3,WS12,S5,S2)
High	F4	What is the long-term availability of structural materials, primarily large woody debris, to provide for channel stability and habitat diversity? (V1,R2,WS11)
Med-Low	F5	What are the aquatic habitat trends and how are they influenced by our actions? (V3,WS9)
High	F6	What is the distribution and abundance of native nonsalmonids and also distribution and abundance on nonnatives?
High	F7	Are there any barriers to fish migration or colonization routes? Where do they occur? (WS14,WS5)

Riparian Vegetation

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
Med.	R1	What are the successional patterns for riparian vegetation?
High	R2	What is and was the composition and structure of riparian areas?
High	R3	What are the major disturbances past and current? (WS12,WS1,S4,S2)
Med.	R4	How are upland disturbances related to the riparian areas?
High	R5	How fragmented or continuous are/were the riparian areas?
V-High	R6	What criteria are important to consider in establishing riparian reserves? (WS7,WS11,V6,V7,WL1,S2,S4,S6,F5,S5,WL6,WL2)

Vegetation

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
High	V1	What types of vegetation exist within the watershed?
High	V2	What disturbances (historic) occurred within Wolf Creek? (R3)
High	V3	How has the vegetation pattern (seral stages, landscape elements) and amount changed?
High	V4	What is the Range of Natural Conditions (RNC) and are current vegetation patterns within that range?
High	V5	How have human disturbances (logging, roads, settlement, fire suppression) altered the historic veg pattern? (S4,S6)
High	V6	What special habitat/plant communities exist in Wolf Creek?
Med.	V7	What are the plant species of concern?
Med-Low	V8	Are there individual plant species or communities that are decreasing due to fire exclusion, management activities, or nonnative competition?

Wildlife and Habitat

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
High	WL1	What limited or scarce habitat types or components exist within the watershed? (snags, CWD)
High	WL2	Where are the major elk travel corridors? (V1,S2)
High	WL3	What impacts do management (roads, agricultural activities) have on elk travel corridors?
High	WL4	What are ODFW elk population targets for elk emphasis areas?

High	WL5	What impacts to the elk population target can be expected from management within the watershed?
High	WL6	What special attention, special status, and T & E species occur in the watershed?
High	WL7	What is the impact to wildlife species from current LUAs?
High	WL8	What other high interest species (cougar, bear, accipiters, etc.) occur in the watershed?
Med-Low	WL9	What introduced/exotic species occur in the watershed?
Med-Low	WL10	What are the impacts to native species from exotics?
High	WL11	What endemic species could occur, but currently do not occur, in the watershed? What endemic species occur in the Siuslaw Basin but not in the Wolf Creek watershed? (V1,V3,V2,R3)

Social

<u>Rank</u>	<u>Question #</u>	<u>Key Question</u>
High	S1	What commodities are or likely will be produced in the WCW? What are the expected quantities and values of products over what time frames?
Med.	S2	How are market forces likely to drive private land and public land use, regulation, and zoning?
Med.	S3	What/how are human populations affected by commodity production activities?
Med.	S4	What is the location and density of residences?
Med.	S5	What is current land use zoning and how is it likely to change? (WS12)
High	S6	What is the land ownership pattern?
High	S7	What are the attitudes of residents/corp. private landowners concerning land use, LUAs, watershed restoration?
Med.	S8	What are the existing recreation opportunities (ROS social, physical, and managerial settings, criteria, and attributes)?
Med.	S9	Where/how are recreation activities impacting the WCW?
Med.	S10	What and where are unique recreational values (sacred places)?

Organization of Key Questions and Logic Flow

The following pages illustrate how the key questions were organized both for prioritization by the line officer as well as data and logic tracking. Those questions along the top of each of the following pages tend to represent the highest priority to the line officer and are the broadest in scope of data needs. The further down in one progresses, the more specific the question becomes requiring more specific data. Usually the data obtained from the first level question assisted in answering

the second level question. Questions located along the bottom of each page represent the most specific in terms of data needs for each of the major resource areas. In some cases, the analysis was able to answer the questions at this level. Generally, some insight was gained into what a possible answer to these lowest level questions were, but no diffinitive answer was available.

