

2.0 Issues and Key Questions

The purpose of this chapter is to focus on the key elements of the ecosystem relevant to future land management activities, and to identify data and analysis needed to provide broad direction for future projects. These issues and key questions were identified and developed by the interdisciplinary team. Major issues of immediate concern are identified and characterized. Key questions have been developed.

2.1 Vegetation Dynamics

The “Caribou Nation Forest and Surrounding Area Sub-Regional Properly Functioning Condition Assessment” and other similar broad scale assessments have indicated that existing vegetation distribution, structure, and composition are outside the historic range of variability across much of the Forest. Therefore, the vegetation within the Montpelier watershed assessment area is likely also outside historic ranges, which has the potential to adversely affect ecosystem function.

Key Questions -

Rangeland Vegetation

- 1) How has the structure of rangeland areas changed? (Indicator – canopy densities)
- 2) How has the disturbance regimes of the rangeland areas changed? (Indicator – disturbance frequency)
- 3) How has the increased presence of noxious weeds affected rangelands. (Indicator – acres of infestation by species)

Forest Vegetation

- 1) How has the structure of the forested areas changed? (Indicator - structure class reported by cover type)
- 2) How has the density of the forested areas changed? (Indicator - density reported by cover type)
- 3) How has the species composition of the forested areas changed? (Indicator - species composition reported by cover type)
- 4) How has the disturbance regimes of the forested areas changed? (Indicator - disturbance regimes reported by cover type)

2.2 Hydrologic Processes and Water Quality

The Inland Water West Initiative (IWWI) rating protocol was used in 1998 to complete a broad scale analysis of hydrologic, water quality and other related conditions and impacts, using the 6th level Hydrologic Unit Codes (HUC's), as the analysis unit. It documented that hydrologic processes and water quality within the watershed are mostly of only moderate integrity. The 6th level is the smallest scale widespread watershed delineation completed to date.

Hydrologic processes and water quality within the watershed may be being impacted by past and present activities.

Key Questions -

1. How are physical stream channel dynamics, including isolation of floodplains, constraints on channel migration, and the movement of large wood, fine organic matter, and sediment being impacted? (Indicator(s) – RHCA road density, Rosgen channel types??., stream side vegetation??., etc reported by sub watershed)
2. How are point source pollutants such as selenium impacting streams and other water sources? (Indicator(s) – source proximity to water, reported by pollutant by sub watershed)
3. How are non-point source pollutants, such as sediment, impacting streams? (Indicator(s) –pollutant level reported by sub watershed)

2.3 Soil Productivity

Soil productivity within the watershed may be being impacted by past and present activities. Over 35% of the soils in the Montpelier Watershed have inherent low productivity. In addition, almost 23% have unstable slopes and high erosion rates. Resource management in this area includes a portion of the Elk Valley Cattle Allotment, an old phosphate mine dump and an active phosphate mine. In addition, ATV trails, riparian campsites, and other human activities have the potential to increase the amount of detrimental soil disturbance and reduce soil productivity in the area.

Key Questions -

1. What are the major livestock grazing soil impacts in the watershed?
2. Is recreation use (camping and ATV use) causing a significant increase in soil disturbance, in the form of erosion, sediment delivery or compaction?
3. Is mining, both active and inactive, affecting the watershed soils?
4. How has fire (both wildfire and prescribed fire) affected soil stability?
5. How susceptible to management activities are the land types found within the watershed?
6. How much of the watershed has been detrimentally disturbed by past activities?
7. At what point is an impact to soil no longer considered detrimental?

2.4 Native Fish Habitat

Bonneville cutthroat trout, a Regional Foresters Sensitive Species, occur in the analysis area. The Bear River East Metapopulation is rated at a high risk of extinction due to impacts from land management on and off the Forest. A restoration program that incorporates concerned residents and public agencies will be needed in order to restore Bonneville cutthroat trout populations in the analysis area.

1. How and to what extent has the historic migration of Bonneville cutthroat trout been affected by land management activities, particularly irrigation diversions, dams, and drainage structures?
2. What are the dominant sediment delivery mechanisms in the analysis area and how did they compare with natural processes? Where are the high risk areas?
3. How and to what extent has the historic habitat quality and quantity of Bonneville cutthroat trout and other native species been affected by land management activities? What actions are required to address these factors?
4. How and to what extent has native fish in the analysis area been affected by the introduction of non-native fish? What actions are required to address these factors?

2.5 Wildlife Habitat

The viability of some wildlife species may have been impacted by past and present activities.

Key Questions -

- 1) How and to what extent have human caused changes to habitat affected TES, MIS and other key wildlife species?
- 2) How and to what extent have natural changes in habitat affected wildlife species?