Chapter 2
Issues and Key Questions

2.0 Introduction

The purpose and objective of Chapter 2 is to identify elements of the ecosystem that are most relevant to the management questions, human values, and/ or resource conditions within the watershed. Key issues are identified under headings for aquatic, terrestrial, and human uses elements. The key questions that will guide the analysis in addressing these issues are listed under each of these three categories. Indicators most likely to reveal current conditions of the core analysis topics are identified. These will be used as measures of departure from historic or reference conditions.

A response to the key questions will be addressed in Chapter 5, and summarized and synthesized in Chapter 6.

2.1 Aquatic Resources

2.1.1 Issue: Watershed and Stream Processes

- What is the occurrence of different geologic substrata and surface deposits in the watershed and how do they affect soil and watershed processes?

> *These questions are addressed in section:* ***5.1.1, Geology.***

- What are the historic and current erosion, mass wasting and soil productivity conditions in the analysis area?

> *This question is addressed in section:* ***5.1.3, Soils: Soil Erosion and Soil Productivity.***

- What are the greatest departures from the natural state in soil conditions and disturbance regimes?

> *This question is addressed in section:* ***5.1.3, Soils, Soil Erosion - Current Processes***

> *Indicators or measurement criteria*: Areas of high risk affected by management related disturbances: miles of road on high substratum sediment hazard lands, miles of road on landslide prone terrain, acres of harvest on landslide-prone terrain, acres of road-caused loss of productivity, acres of tractor logging and/ or dozer piling on areas of high compaction hazard.

- What were the historic hydrologic regimes, channel morphology, water quality, and pattern of hydrologic states in the area under natural disturbance regimes?

> *This question is addressed in sections:* ***5.1.4, Landforms, 5.1.5, Channel Types, 5.1.6, Watershed Conditions - Water Yield and Sediment Yield, 5.1.7, Water Temperature, 5.1.8, Other Water Quality Parameters, and 5.1.9, Riparian Areas and Floodplains.***

- What is the current watershed condition, and what changes in regime, channel conditions, water quality, and pattern of hydrologic states have occurred?

> *This question is addressed in sections:* ***5.1.4, Landforms, 5.1.5, Channel Types, 5.1.6, Watershed Conditions - Water Yield and Sediment Yield, 5.1.7, Water Temperature, 5.1.8, Other Water Quality Parameters, and 5.1.9, Riparian Areas and Floodplains.***

- What are specific watershed improvement needs and priorities, in addition to those listed under fisheries issues?

> *This question is addressed in sections:* **6.2.3, Recommended Aquatic Management Direction, 6.2.4, Aquatic Themes**, **7.3** through **7.12, Subwatershed Integrated**

Recommendations, and in **Appendix K**.

- Slate, Little Slate, Little Boulder, Van Buren, and Turnbull Creeks are designated as Water Quality Limited Streams under the Clean Water Act, with sediment being the specified pollutant of concern. If sediment is verified to be a problem, what measures should be taken to reduce impacts?

This question is addressed in sections: **6.2.3, Recommended Aquatic Management Direction, 6.2.4, Aquatic Themes**, **7.3** through **7.12, Subwatershed Integrated Recommendations**, and in **Appendix K**.

Indicators or measurement criteria: Changes in watershed condition, water yield regimes, sediment regimes, water temperature regimes, riparian conditions, channel morphology, pattern of disturbance states across subwatersheds, and identified watershed improvement needs.

2.1.2 Issue: Aquatic Species

- What kinds of aquatic habitat exist in the watershed, and what is the inherent potential of this habitat to support aquatic species?

These questions are addressed in sections: **5.1.10, Aquatic Species Habitat**, for general habitat elements, and individually under each species, in this document in **Appendix Q, Aquatic Species Descriptions**, under Inherent Habitat Potential.

Indicators or measurement criteria: Aquatic landtype associations, stream gradient, stream channel type, valley bottom type, and general habitat elements.

- What was the historic pattern of aquatic habitat condition, and the relationship between this habitat and the natural disturbance regimes?

This question is addressed in section: **5.1.10, Aquatic Habitat Components**, under the discussion of Historic Process and Conditions.

Indicators or measurement criteria: Aquatic landtype associations, large woody debris, pools, substrate, and temperature.

- What is the current aquatic habitat condition in the watershed, compared to historic, and what is the relationship between this habitat and the current disturbance regimes?

These questions are addressed in sections: **5.1.10, Aquatic Habitat Components**, under the discussion of Current Process and Conditions, which addresses individual habitat components, **5.1.11, Aquatic Condition Summary**, which summarizes the current status of aquatic processes and conditions, and **Maps 18 through 23**.

Indicators or measurement criteria: Aquatic landtype associations, large woody debris, pools, substrate, temperature, aquatic integrity rating.

- What aquatic species are present in Slate Creek, and what is the status and context of these species?

These questions are addressed in section: **Appendix Q, Aquatic Species Descriptions**, under the discussion of each species.

- What is the current fish distribution, compared to historic, and population strength of fish species in Slate Creek?

These questions are addressed in section: **Appendix Q, Aquatic Species Descriptions**, under the discussion of Distribution and Population Strength for each species, and on **Maps 24 through 30**.

- What are the interrelationships, population dynamics, and current threats to the fish populations in Slate Creek?

These questions are addressed in section: **Appendix Q, Aquatic Species Descriptions**, under the discussions

of Habitat Relationships, Population Dynamics, Interaction with Other Aquatic Species, and Key Factors and Threats.

- What are the priority management needs in Slate Creek, including themes, to achieve the aquatic objectives in the watershed?

This question is addressed in sections: **6.2.3, Recommended Aquatic Management Direction** and **6.2.4, Aquatic Themes.**

- Where are specific watershed or habitat improvement needs, and their priorities, to achieve the aquatic objectives for Slate Creek?

This question is addressed in sections: **6.2.3, Recommended Aquatic Management Direction, 6.2.4, Aquatic Themes**, **7.3** through **7.12, Subwatershed Integrated Recommendations**, and in **Appendix K**.

2.2 Terrestrial Resources

2.2.1 Issue: Plant community composition, structure, pattern, and function

- What was the pattern of historic plant communities and their disturbance regimes?

This question is addressed in section: **5.2.2, Assessment by Vegetation Response Unit,** and **Maps 31, 32, 34, 37, 38, 39, and 43.**

- How have plant community composition, stand structure, and landscape pattern changed as a result of fire suppression, harvest, livestock grazing and road building?

This question is addressed in sections: **5.2.1, Summary, Plant community composition and process, 5.2.2, Assessment by Vegetation Response Unit** and summarized in **6.3.2, under Summary and synthesis of Vegetation findings,** and **Maps 40, 41, 42, and 44.**

- Where and to what extent have insect and disease agents changed from historic levels?

This question is addressed in section: **5.2.5, Terrestrial Disturbance Regimes and their Alteration.**

- How have open stands of ponderosa pine, early seral communities with snags, forest understories, and old growth changed from historic ranges?

This question is addressed in sections: **5.2.2, Assessment by Vegetation Response Unit, 5.2.8, Wildlife**, and **Map 51.**

- What treatments and areas of treatment are highest priority to move the landscape closer to historic patterns of plant community composition, structure, pattern, and function?

This question is addressed in section: **6.3.4, under Vegetation Themes, Appendix L,** and **Map 45.**

- What are appropriate ecologically based ranges of seral states, patch sizes, and stand conditions in different biophysical settings in the Slate Creek area?

This question is addressed in section: **5.2.2, under Assessment by Vegetation Response Unit, Presettlement Composition and Structure.**

- What are proposed allocations of existing and replacement old growth?

This question is addressed in: **Map 51** and stands are listed in **Appendix M**. No stand specific recommendations for allocations are made in this document, because field validation is required. Recommendations for conservation of old growth are made in **Section 7.3.2, Compatible Management Needs and Rationale: Conservation**

of Old Growth. Recommendations for conservation of late seral mesic communities and old growth are also discussed in **Section 6.4.4, Wildlife Themes** and are shown in **Map 49.**

- What changes in Forest Plan direction are recommended to provide for conservation of old growth?

This question is addressed in section: **6.3.3, Recommended Vegetation and Fire Management Direction: Old Growth.**

- What changes in Forest Plan direction are recommended to provide for snags and down wood?

This question is addressed in section: **6.3.3, Recommended Vegetation and Fire Management Direction: Snags and Down Wood.**

Indicators or measurement criteria: historic and existing forest composition: cover type, size class, canopy cover, canopy layers, snags, and old forest, departures from fire regimes, vegetation change/ fuel models.

2.2.2 Issue: Fire

- What were the historic fire regimes and smoke production in the area?

This question is addressed in sections: **5.2.5, under Fire,** and **5.2.6, Air Quality,** and **Map 34.**

- How and where have fuel quantity and continuity changed as a result of fire suppression, harvest, and succession?

This question is addressed in section: **5.2.5,** under **Fire: Fuels.**

- How and where has the risk of severe fire changed, considering risk of ignition, fuels, fire regime, and interval since last disturbance?

This question is addressed in section: **5.2.5, under Fire: Changes in fire regimes** and **Ignition risks**, and **Map 35.**

- What areas are most outside their natural fire disturbance intervals?

This question is addressed in section: **5.2.5, Fire: changes in Fire Regimes**, and **Map 35.**

- Where are the options for fire treatment or integration of fire and other vegetation management, assuming high risk areas will require some mechanical treatment of fuels; moderate risk areas will allow staged reintroduction of fire; and low risk areas can support a regime of maintenance burns.

These questions are addressed in sections: **6.3.3, Vegetation and Fire Management Direction, 6.3.4, Vegetation Themes, 7.3.2, Compatible Management Needs and Rationale, Prescribed Fire Use**, and **Maps 36 and 45.**

- How would smoke production from severe wildfire compare to smoke if a fire restoration strategy is implemented?

This question is addressed in section: **5.2.6, Air Quality**.

- What changes in Forest Plan direction are recommended to provide for changes in fire management?

This question is addressed in section: **6.3.3, Recommended Vegetation and Fire Management Direction: Fire Management**

Indicators or measurement criteria: Acres by historic fire regime, acres of current fire risk as indicated by departure from historic, and acres suited for fire maintenance, restoration, or mechanical treatment with fire use.

2.2.3 Issue: Invasive plant species and noxious weeds

- Where are the areas most susceptible to noxious weed invasion?

This question is addressed in section: **5.2.7, Noxious Weeds and Exotic Plants: Habitat Susceptible to Weed *Colonization*** *and* ***Map 46***.

- What is the current extent of infestation of noxious weeds in the watershed and adjacent areas?

  This question is addressed in section: **5.2.7**, **Noxious Weeds and Exotic Plants: Present Situation.**

- What is the risk of spread of known infestations?

  This question is addressed in section: **5.2.7, Noxious Weeds and Exotic Plants: Risk of Weed Expansion**, and **Map 47**.

- What are the highest treatment priorities given risk of spread and priority areas for vegetation restoration?

  This question is addressed in section: **6.3.4, Vegetation Themes: Restore Bunchgrass Communities and Restore Ponderosa Pine** and **7.3.2, Compatible Management Needs and Rationale: Noxious Weeds,** and **Appendix H**.

- What are current weed management strategies, including cooperation with adjacent landowners?

  This question is addressed in section: **7.3.2, Compatible Management Needs and Rationale: Noxious Weeds,** and **Appendix H.**

  Indicators or measurement criteria: Acres of susceptible habitat, acres of occupied habitat, acres of high risk of spread, acres of high risk of spread associated with high priority for vegetation management and restoration.

2.2.4 Issue: Threatened, endangered and sensitive plant species

- What is the suitability of different habitats for rare and sensitive plants in the area?

  This question is addressed in sections: **5.2.3, Rare and Important Plants and Plant Communities,** and **5.2.4, Unique Elements.**

- Are there known populations of rare and sensitive plant species in the area?

  This question is addressed in section: **5.2.3**, **Rare and Important Plants and Plant Communities**.

- What and where are TES habitat restoration, protection or creation priorities?

  This question is addressed in section: **6.3.4, Vegetation Themes: Unique Elements or Conditions**, and **Appendix H**.

  Indicators or measurement criteria: acres of suitable habitat, status and threats to known populations, acres of habitat recommended for protection, restoration, or creation.

2.2.5 Issue: Wildlife Habitat

- How have early-seral habitats, post fire/ snags, open ponderosa pine, and late-seral communities changed from historic ranges?

  This question is addressed in sections: **5.2.8, under Wildlife Discussion**, **6.4.2 Summary and Synthesis of Wildlife Findings,** and **Maps 37-44.**

- What was the extent and location of the historic habitat potential for wildlife species given the natural disturbance regimes in the area?

  This question is addressed in sections: **5.2.8, under Wildlife Discussion** and **Maps 37-44 and 51.**

- How has current habitat changed from the historic range?

  This question is addressed in sections: **5.2.8, under Wildlife Discussion**, **6.4.2, Summary and Synthesis of Wildlife Findings,** and **5.2.2, Assessment by Vegetation Response Unit.**

- What areas and treatments compatible with historic potential are priorities for restoration of wildlife habitat?

  This question is addressed in sections: **6.4.3, Recommended Wildlife Management Direction, 6.4.4,**

Wildlife Themes, and **Map 49 and 71; 6.3.3, Recommended Vegetation Management Direction, 6.3.4, Vegetation Themes,** and **Maps 45 and 73.**

Indicators or measurement criteria: Historic and existing forest composition: cover type, size class, canopy cover, canopy layers, snags, and old forest.

2.2.6 Issue: Wildlife security

- What habitats can support wildlife species sensitive to human disturbance?

This question is addressed in sections: **5.2.8, Wildlife Security** and **6.4.2, Summary and Synthesis of Wildlife Findings.**

- What is the current status of wildlife security, how has it changed and what are the trends?

These questions are addressed in sections: **5.2.8, Wildlife Security, 6.4.2 Summary and Synthesis of Wildlife Findings** and **Map 50.**

- What specific actions can improve wildlife security?

This question is addressed in sections: **6.4.3, Recommended Wildlife Management Direction** and **6.4.4, Wildlife Themes; Maps 58-66** and **Appendix J.**

Indicators or measurement criteria: existing and future road densities, current acres providing wildlife security, and acres suited for improvement of wildlife security.

2.3 Human Uses and Values

2.3.1 Issue: Nez Perce Tribe

- What was the historic use of Slate Creek by tribal members?

This question is addressed in sections: **4.3 Treaty Rights** and **5.3.3, Heritage Resources - Historic.**

- How do tribal members currently use the Slate Creek drainage?

This question is addressed in sections: **5.3.2, Nez Perce Tribe.**

- How will significant prehistoric and historic Native American sites be preserved and protected from management activities and human use of the area?

This question is addressed in sections: **5.3.3, Heritage Resources - Current.**

Indicators or measurement criteria: areas needing inventories, protection, and interpretation.

2.3.2 Issue: Other cultural resources

- How will the historic Florence mining area be protected from impacts of road reconstruction, timber harvest, recreational use and other activities?

This question is addressed in sections: **6.5.4, Recreation Themes** and **7.11, Little Slate Creek Integrated Recommendations.**

Indicators or measurement criteria: Sites needing protection, interpretation, restoration

2.3.3 Issue: Livestock Grazing

- What were historic patterns of livestock grazing, their numbers, season, and distribution?

These questions are addressed in section: **5.3.5, Land Uses - Livestock Grazing.**

- What are the current livestock levels in the watershed?

This question is addressed in section: **5.3.5, Land Uses - Livestock Grazing.**

- Are there areas within the watershed where existing grazing strategies need adjustments, and/or where additional management practices are needed.

This question is addressed in: **Appendix K.**

Indicators or measurement criteria: past and current use, acres of capable and suitable lands for livestock grazing and monitoring vegetation response to changes in grazing strategi.s;

2.3.4 Issue: Recreation

- What is the current extent and locations of developed recreational facilities and dispersed use in the area?

This question is addressed in section **5.3.6 Recreation and Trails**

- What are likely future trends in recreational use?

This question is addressed in sections **5.3.6 Recreation and Trails and 6.5.2 Summary and Synthesis of Socioeconomic Findings. .**

- What and where are specific maintenance, improvement, or other management needs and priorities best suited to support and enhance recreational activities in the area?

This question is addressed in sections: **5.3.6 Recreation and Trails, and 6.5.3 Recommended Recreation Management Direction.**

Indicators or measurement criteria: discrepancies between current and projected use and available opportunities, facilities, and facility condition

2.3.5 Issue: Transportation

- What is the extent, condition, use, resource impacts, and future needs for the system of roads and trails in the analysis area?

These questions are addressed throughout this document. Please see in particular section **5.1.6, Watershed Condition**, **section 5.1.1, Aquatic Habitat Condition Summary, 5.2.8, Wildlife Security, and 5.3.4, Transportation Management**. Additionally, refer to **Maps 70 through 74.**

- What is the core system of roads and trails required to access private lands and mineral claims, meet basic forest travel and resource protection needs, and preserve historic travel ways?

This question is addressed in: **Map 70, Main Roads/Trails display**.

- What existing roads and trails are needed within the next 20 years to support timber harvest, livestock management, weed treatment, prescribed fire and public uses?

This question is partly addressed in: **Maps 58 through 66 Road management objectives**. Additional details related to this question are identified in **Appendix O, Data Gaps.**

- What existing roads and trails currently provide the greatest risk to recovery of aquatic processes, and risk to control of invasive plants and noxious weeds?

This question is addressed in sections: **5.2.7 Noxious Weeds and Exotic Plants. Please see also Map 47, Weed Risk of Expansion and Map 16, Aquatic Risk Rating From Existing Roads.**

- What are specific road management needs and priorities given the aquatic, terrestrial and human uses of the area including maintenance, decommissioning, reconstruction or other management?

This question is addressed in section**: Maps 58 through 66. Please see also section 7.2 , Roads themes.**

- Are there new travel routes compatible with the aquatic recovery objectives and needed to support other management objectives?

This question is addressed in section: The analysis did not provide the detail to fully address this question. Please see **Appendix O, Data Gaps** section related to the harvest planning needs.

Indicators or measurement criteria: road densities by subwatershed, road

maintenance, road use restrictions, roads ranked by risk to natural resource.