Chapter 7 - Integrated Themes, Recommendations and Project Opportunities

7.0 Introduction

In Chapter 6, functional themes were assigned to specific resource groups (vegetation, wildlife, aquatics, recreation and roads) for each of the nine subwatersheds in Slate Creek. In this chapter, the functional themes are integrated into a comprehensive management package for each subwatershed. The integrated themes are the culmination and essence of this EAWS.

As part of the integration process, consideration was given to relative functional priorities and needs in each subwatershed, the magnitude and direction of the trends in ecological departures, the ability to effect recovery and restoration, the biophysical capabilities to achieve sustainable conditions, and the need to balance recovery both spatially and functionally across the watershed. Where functional themes conflict, the integration process allows the interdisciplinary team (IDT) to recommend where trade-offs should be considered.

The recommended integrated area themes describe the primary emphases for an area in terms of one or more functional themes. An area theme may emphasize one functional theme, but the other themes are still important. For example, restoring aquatic processes through road reduction, road drainage treatments and other upland sediment source reduction needs to occur concurrently with restoring open stands of large pine in North Fork Slate Creek.

Road themes are a product of integrated functional themes. Road themes address future road maintenance and development in terms of socioeconomic needs and conserving/ restoring biophysical processes, functions, and elements.

This chapter first addresses issues that apply to the entire Slate Creek watershed. Then, it presents the integrated themes, recommendations and key project opportunities for each subwatershed. A complete listing of identified project opportunities is shown in Appendix K and L.

7.1 The Integration Process

The integration process is complex and difficult to depict. It could best be described as having three primary facets: IDT member understanding, discussion and negotiation. Integrated theme development must occur in a face to face, team interaction environment.

The first step in the process is understanding. For every subwatershed, each resource specialist on the IDT explains their functional findings, existing conditions and likely trends, resource themes, unique resource issues and recommended treatment needs, possible projects, and priorities to the rest of the team members. Maps are frequently used to help portray the situation. Highlights of these functional presentations are captured on flipchart paper by another IDT member.

The second step in the process is discussion. The team openly and frankly discusses the ecological processes at work in the subwatershed. They concentrate on identifying processes that are working well and are healthy, and processes that are not working so well. They discuss functional treatment objectives that might potentially conflict with one another. They discuss relative priority of functional subwatershed treatment needs in the context of the overall watershed theme, as well as the watershed in the context of the river basin. In

subwatersheds with special or unique functional needs, the specialists make the case for why their function's treatment needs should be featured in the overall integrated theme of the area.

The third step in the process is collaboration and negotiation. The team discusses the pros and cons of adopting alternative functional area themes. They discuss the probable success, timing, and possible conflicts of functional restoration efforts. After everyone has had a chance to be heard, the IDT will propose an integrated area theme. This is either adopted or after more discussion, amended and adopted.

Based on the area theme adopted, a roads theme is then chosen which is most consistent with the area theme objectives. In areas with especially sensitive and important aquatic resources, all new roads might be deferred. In areas with a terrestrial theme which requires road access to implement, the road theme might be to develop and maintain the road system.

Adoption of an area theme requires full IDT consensus. The recommended area theme that is finally adopted will guide all future management actions on the analysis area, whether that is the entire watershed or a subwatershed.

The team then identifies secondary management themes that do not conflict with the adopted integrated area theme. This entire package is described in the priority management needs for each analysis area. A rationale section is also included, which explains why the IDT chose to recommend a given theme for the area.

7.2 Project Categories

Using the integrated area theme and the priority management needs, the team then identifies possible project opportunities. Projects are placed into two categories: priority projects and compatible projects.

Priority projects are recommended to assist in the achievement of the identified priority management needs in the analysis area. The list of priority projects is not exhaustive, and the projects may not, by themselves, achieve the management objective. These are simply known projects that should be pursued.

Compatible Projects have been determined to be compatible with the priority management needs in the analysis area, however, they do not contribute to the achievement of those objectives. These projects should proceed as possible, given that further analysis confirms that they are compatible, and do not detract from the priority management needs identified.

Finally, in a few unique situations, the IDT might recommend actions or projects that should be prohibited in the analysis area because they are clearly inconsistent with the integrated theme and associated management emphasis in the area. Projects in this category would be defined as those which further degrade the resources highlighted in the area theme.

7.3 - Slate Creek the Entire Watershed

7.3.1 Priority Management Needs and Rationale

The highest priority management needs in the Slate Creek watershed are:

- **restore aquatic conditions and processes in the watershed**
- **adjust the road and trail system to support aquatic restoration and provide for administrative and public uses**

Aquatic Restoration

Slate Creek is uniquely valuable to a variety of aquatic species when compared to other watersheds of comparable size in the Lower Salmon subbasin.

The watershed currently supports year-round use and access for 3 listed species of fish under ESA (spring Chinook, steelhead and bull trout) and 1 sensitive species (westslope cutthroat trout). The drainage contains a mix of high elevation cold water sources and potentially high value spawning and rearing resident fish habitat in the low gradient streams common in the low relief parts of the watershed, and spawning and rearing habitat for spring chinook and steelhead in main-stem Slate Creek.

Slate Creek is a very high priority for restoration within the Lower Salmon subbasin because of its high potential aquatic productivity, intact aquatic assemblages, and current conditions and processes affected by past management activities.

Past management activities have most significantly affected sediment regimes as a result of road building and mining. In addition, in-stream and near-stream activities have affected channel morphology, cover, and habitat complexity. Mining, livestock grazing, road construction, timber harvest, and removal of large wood have contributed to altered habitat conditions. More subtle alteration of the complexity of aquatic habitat at the landscape scale has been caused by fire exclusion and timber harvest. These activities have resulted in changing from a regime of periodic and spatially discrete disturbances to the more recent regime of low levels of disturbance uniformly distributed across much of the watershed. Over the long term this has led to suppression of pulse disturbances in water yield, recruitment of large wood and rock, and processing of this material in the channel system.

Because of the inherent resiliency of most of the streams, the potential to restore aquatic resources is high and should respond to restoration efforts relatively quickly. Many streams are in a properly functioning condition and a few are functioning at risk. None of the streams are considered to be nonfunctioning. Because of cumulative impacts of past mining, logging, roading and grazing, the Little Slate Creek subwatershed (see Map 14) is probably the area in Slate Creek that is most highly departed from properly functioning natural aquatic processes and conditions. The low gradient streams in Little Slate are less resilient than other stream types and will require concerted effort and longer time periods for recovery.

Thus, it is not surprising that the interdisciplinary team recommends aquatic restoration as the predominant, integrated theme for the Slate Creek watershed. Restoration and conservation efforts should focus in areas where long term ecosystem sustainability may be at risk and/ or where resource values and capabilities are high.

Integrated Recommendations for Road and Access Management Objectives

The Slate Creek watershed analysis has developed recommendations for road management objectives throughout the watershed consistent with the priority themes, both at the watershed and

subwatershed scale. These recommendations are summarized in this chapter by subwatershed and displayed in Maps 58-66. They are displayed in detail in tabular form in Appendix J.

In keeping with the overriding aquatic restoration theme, management should emphasize the reduction of road related effects through road maintenance, road stabilization, relocation, and road obliteration. Management should also defer potentially impactive activities in areas which currently serve as refugias to recovering aquatic species.

Four categories were developed to display the summary of the road management objectives:

1) Keep the road. These roads are typically main access routes and generally are open throughout the year. They serve a wide range of access needs and uses. They may require reconstruction and substantial treatment or more frequent maintenance to address resource concerns but the recommendation includes preserving these routes as a means of primary access.

2) Evaluate for stabilization needs. These roads are recommended for evaluation for retention in the transportation system. Stabilization efforts to control surface erosion and sediment delivery may be warranted. Many of these roads currently have access restrictions in place. Continuation of access restrictions is recommended.

3) Evaluate for decommissioning. These roads are recommended for evaluation for removal from the transportation system. Activities to treat these roads to address resource concerns prior to removal from the transportation system are warranted.

4) Decommission. These roads are recommended for removal from the transportation system. Activities to treat these roads to address resource concerns prior to removal from the transportation system may be warranted.

Reduction in road density will be sought where benefits to aquatic and wildlife resources accrue. Road density reduction will focus on roads with the highest potential to contribute sediment to streams, interrupt stream shading or maintain large organic debris, and roads where closure or removal will help enforce access restrictions to improve or maintain security for wildlife especially during critical periods in fall and winter (hunting and trapping) and spring (breeding and parturition).

Further analysis may be required to more adequately address reductions in road density. Some areas have been recommended for restoration of moderate to long interval, coarser scale disturbance activity (VRUs 1 and 6). These areas are suitable for maintenance of a minimum permanent transportation network with temporary systems developed in activity areas only for the duration of that harvest and regeneration activity. For these areas, road density could be expected to vary over time, but a significant proportion of these areas would have lower road densities at any one time than currently exist.

7.3.2 Compatible Management Needs and Rationale

Notwithstanding the overriding emphasis on aquatic resources, there are other resource restoration needs that should also be considered in Slate Creek. Fortunately, most of these restoration activities are consistent with the aquatic objectives. Recommended management emphasis needs for non-aquatic resources emphasis are highlighted below. Keep in mind that this section applies to the entire Slate Creek watershed, thus in most cases, only general emphasis discussions are presented. Where potential restoration and enhancement projects would be implemented across the entire watershed, they will be listed below. More detailed management needs and specific project discussions are included in the 9 subwatershed sections that follow.

Noxious weeds

As a result of the presence of invasive plants, the potential for continual spread, and the level of susceptible habitats in the Slate Creek watershed, the following recommendations should be considered:

- Close integration of future disturbance activities will be necessary within extreme and high risk zones. If the most important disturbances or spread vectors can be efficiently managed, then the risk of expansion could be minimized through active control and prevention actions integrated into management strategies. However, if these factors become too complex then a combination of treatment and activity deferral may become necessary.

- Eliminate all new invasive plants and treat invasive weeds along transportation corridors that could act as a founder population for new infestations.

- Maintain an up-to-date inventory of all invasive weeds and selected exotic plants. Monitor within moderate and high susceptible habitats for changes in exotic plant populations.

- Due to the large and growing infestations adjacent to the National Forest, exotic plant management within the analysis area must be integrated into the broader weed strategies cooperatively developed across the lower Salmon River Canyon.

- Favor the use of native species in restoration activities where the native species can accomplish the site objectives and costs are not excessive. Limit the use of long-lived exotics plants where the invasiveness of the species is unknown. All seed purchased for use within the Slate Creek Watershed, should be tested for all states' noxious weeds.

- Where feasible and consistent with landscape objectives and ecological processes, maintain as much shade as possible on susceptible sites, and maintain the herbaceous layer in a healthy productive state.

Ponderosa Pine Restoration

Due to past timber harvest and fire control, there are many lower elevation areas on the Nez Perce National Forest where ponderosa pine restoration is needed. Slate Creek is not unique in this regard. Managers should pursue such projects so long as they do not impede (either in the short or long term) the primary theme of aquatic restoration. This will usually require that significant watershed improvement work will be needed to offset short term sediment and water yield increases from the vegetation restoration work. New road construction to provide access for ponderosa pine restoration projects should be evaluated very carefully.

Whitebark Pine Restoration

Due to blister rust and fire exclusion, there are many high elevation areas on the Nez Perce National Forest where whitebark pine restoration is needed. Whitebark pine is being lost at an alarming rate. Slate Creek is not unique in this regard, but the accessibility of the Nut Basin area for treatment, and its key location linking the Gospel-Hump and Seven Devils whitebark communities suggest that its restoration priority is especially high.

Managers should pursue such projects so long as they do not conflict with or impede (either in the short or long term) the primary theme of aquatic restoration. New road construction to provide access for whitebark pine restoration projects should be evaluated very carefully, not only because of potential watershed impacts, but because of the poor potential for revegetation or successful decommissioning of high elevation roads.

Restoration of Disturbance Dynamics in Lodgepole Pine and Larch Forests

Past timber harvest has created a fragmented pattern in lodgepole/larch forest types that is inconsistent with the larger openings common to historic natural disturbance events. The pattern of traditional management has resulted in a forest matrix perforated with harvest units

that are uniform in size and condition (see Map 52) . The Florence Basin is probably the most striking example of this situation.

Repatterning of disturbance size, frequency, internal heterogeneity, and securing of adjacent areas from disturbance is needed to bring the landscape and habitat closer to its historic function. Because the need is not immediate, this treatment is considered a moderate priority and should be undertaken only if it is compatible with the aquatic restoration goals. The key to simultaneously restoring the aquatic resources and the repatterning in lodgepole types is to carefully schedule and coordinate any harvest or burning activity with the transportation strategy.

Old Growth Conservation

Old growth is currently estimated to occupy about 26 percent of the potential forest acres in National Forest Lands in the Slate Creek watershed. Conservation of old growth will require:

1) Field inventory of stands identified as having potential old growth attributes using the North Idaho Old Growth standards (see Map 51) to verify their condition.

2) Allocation of existing old growth and late seral stands for protection, in better proportion to their historic occurrence (see Appendix F, South Fork Landscape Assessment. USDA FS 1997). This means that substantially more old growth would be allocated in VRU 3. Some old growth would be allocated in VRUs 1, 6, and 9. This allocation would also consider the recommendations for conservation of mesic late seral/ old growth in Map 49 and Section 6.4.4: Conserve Late Seral/ Old Growth Forest.

3) Restoration of disturbance regimes required to maintain fire dependent old growth types, including ponderosa pine, western larch, and whitebark pine.

4) Current replacement old growth may not provide any old growth attributes now or for many years. By better sustaining historic seral stage representation in the landscape, in appropriate settings and patch configurations, replacement old growth will be most suitably provided for should natural disturbances eliminate patches of current old growth.

Wildlife Management

Most vegetation restoration treatments will also benefit wildlife. Thus, if the vegetation treatments are consistent with the aquatic theme, the wildlife treatments will be consistent as well.

Heritage Resources

The area contains several important Nez Perce Tribal religious sites that must be protected. This protection objective is consistent with most aquatic restoration activities.

Prescribed Fire

Management ignited fire may be used to attain vegetation, wildlife, watershed, or fuel reduction objectives.

- VRUs 1 and 2: In areas unaffected by harvest, fuel models 8 and 10 are now more continuous across the landscape than was likely in historic times. Some treatment to change one delineation or another is more appropriate than low severity fuel treatments in all delineations. Priority is low to moderate. This need is highly compatible with the restore whitebark pine theme.

- VRU 3 and 4: Treatments within stands to address fuel quantity and vertical continuity are needed, e.g. thinning and/ or underburning. Priority is high.

- VRU 6: In areas unaffected by harvest, vegetation conditions (fuel models 8 and 10) are now more continuous across the landscape than was likely in historical times. These conditions can contribute to severe fire behavior under dry windy conditions. Vegetation or fuel treatments that would recreate conditions more closely aligned with historical (larger, internally complex disturbance

patches) would reduce the continuity of vegetation and fuel conditions across the landscape. Priority is moderate.

- VRU 9: Underburns, mixed and high severity fire are needed urgently, for whitebark pine restoration, and to a lesser degree, for fuel management. These high elevation ridges are good topographic barriers to fire spread, and treating them for fuels reduction and whitebark pine restoration could additionally allow for wider use of naturally ignited fires in adjacent roadless or wilderness lands.

- VRU 12: Fuel treatment and grassland restoration will require careful planning and perhaps coordination with prior plant community stabilization or restoration including seeding, herbicides, use of biological weed control agents, or adjustment of grazing or traffic, to avoid increases in annual grasses or noxious weeds.

Wildland Fire Use

There is a high need for increased use of wildland fire to accomplish vegetation and fuels management objectives in areas where additional road construction is not recommended and/or timber values are low. Managers should pursue necessary analysis to implement such projects so long as they do not conflict with or impede (either in the short or long term) the primary theme of aquatic restoration. This is documented further in Chapter 6, Section 6.3.3: Recommended Vegetation and Fire Management Direction.

Fire Suppression

Control line construction and fire camps to support fire suppression activities can potentially affect aquatic resources as much or more than direct fire effects. Close coordination with aquatic resource specialists has become a policy on the forest, and is embodied in the programmatic BA for fire management in settings affecting listed fish species.

Recreation

Slate Creek contains a mix of recreation opportunities. Maintaining the current mix of opportunities appears to be compatible with the primary theme of aquatic restoration.

7.3.3 Summary

The integrated management emphasis and priorities discussed previously, are summarized for the land manager below. If management actions follow these 5 basic guidelines, the probability of success in restoring all the resources (although proceeding at different rates) will be maximized.

1) Focus on main-stem aquatic restoration by effectively responding to and managing the cumulative effects of both natural events and man-made projects throughout the entire watershed, especially those that could potentially increase stream sediment and temperature.

2) Management activities for all resources should be designed to move from chronic press disturbances, to the more natural pulse disturbances with longer intervals of "rest" between them.

3) The need for vegetative restoration in both the canyon (ponderosa pine restoration and associated restoration of very frequent to frequent, low and mixed severity disturbance regimes) and uplands (whitebark pine restoration and repatterning of vegetation disturbance dynamics in areas of infrequent mixed and lethal fire regimes) has been clearly identified, but it is secondary to the aquatic issues and needs in the drainage. Given this, vegetation treatments in the canyon should be scheduled at a smaller scale and overall restoration should proceed at a slower rate than would be considered optimal if vegetation were the only consideration. Likewise, vegetation treatment needs in the upper watershed are not as urgent and have the flexibility to be scheduled and located in such a way as to support road effects reduction and transportation system reconfiguration. Simultaneously

restoring and realigning the aquatic and vegetation dynamics will be a complex job that will require above average levels of analysis. Trade-offs will be made more frequently than usual, especially between aquatic and vegetation/ wildlife objectives and the rate at which these objectives will be achieved. In the vast majority of cases, the suggested aquatics and vegetation emphases should be consistent with current and projected recreational use in Slate Creek.

4) The potential spread of noxious weeds should always be a consideration for any land management practice that might be proposed.

5) Nez Perce Tribal interests and uses in the area should always be a consideration for any land management practice that might be proposed.

6) Last but not least, the success of restoring the aquatic resource functions is highly dependent on road management. Road management will need to include reconfiguring the existing road system. Road reconfiguration is the primary means of realigning the vegetation and watershed dynamics. High levels of public involvement and careful planning will be needed to assure that the transportation system provides the opportunity maintain the diverse recreational uses of the area, that adequate administrative access is maintained and that roads and trails which are most detrimental to the aquatic resource are dealt with swiftly and decisively.

7.3.4 Subwatershed Themes, Priority Projects and Recommendations

The overall emphasis for the entire Slate Creek watershed was discussed in the previous section. Unless otherwise noted, these themes, priorities and recommendations will apply in each of the nine subwatersheds. For the sake of brevity, the integrated themes applicable to the entire watershed will not be repeated for each subwatershed. The length and content of the subwatershed write-up will depend on the issues and uniqueness of the conditions of a given subwatershed. Only pertinent issues will be discussed. The integrated subwatershed discussions represent the finest scale that is presented in this EAWS.

The nine subwatershed sections that follow will discuss the predominant subwatershed theme and rationale, as well as compatible but subordinate management and rationale.

In most cases the predominant or priority theme will be consistent with the overall Slate Creek watershed theme of aquatic resource restoration. However, there may be a few subwatersheds where isolated or unique conditions might warrant the elevation of some non-aquatic resource themes or needs to a higher priority than the overall aquatic theme. Management is encouraged to address these other resource themes if analysis shows that the watershed-wide goal of short and long term aquatic restoration is not compromised.

Table 7.10 - Integrated Management Themes

Subwatershed Name	Roads Theme (see Map 74)	Area Theme(s) (see Map 75)
Lower Slate Canyon	•??Maintain core road system and reduce adverse effects throughout	•??Work collaboratively with neighbors
Main Slate Canyon	•??Maintain core road system and reduce adverse effects throughout	•??Restore: aquatic processes, ponderosa pine & bunchgrass

Little Van Buren Creek	•??Maintain core road system and reduce adverse effects throughout	•??Restore: aquatic processes and whitebark pine •??Restore: aquatic processes and ponderosa pine
Deadhorse Creek	•??Maintain core road system and reduce adverse effects throughout	•??Conserve: aquatic processes & wildlife security, and restore whitebark pine •??Restore aquatic processes and conserve wildlife security
North Fork Slate Creek	•??Reduce adverse effects with an emphasis on reducing overall road densities	•??Restore: aquatic processes and ponderosa pine
Upper Main Slate Creek	•??Defer New Roads •??Roads inapplicable in wilderness portions of this subwatershed	•??Improve recreation opportunities •??Restore: aquatic processes and ponderosa pine •??Conserve aquatic processes and restore whitebark pine
Boulder Creek	•??Defer New Roads •??Roads inapplicable in wilderness portions of this subwatershed	•??Restore aquatic processes •??Conserve aquatic processes and restore whitebark pine
Little Slate Creek	•??Reduce adverse effects with an emphasis on reducing overall road densities	•??Restore aquatic processes, complete transportation planning and enhance wildlife security
Van Buren Creek	•??Defer New Roads	•??Conserve: aquatic processes & wildlife security, and restore whitebark pine •??Restore aquatic processes and conserve wildlife security

7.4 - Lower Slate Canyon Subwatershed

7.4.1 Priority Management Needs, Projects and Rationale

The high priority management need in the Lower Slate Canyon subwatershed is:

- **work collaboratively with the varied private landowners, State and County Jurisdictions, the Nez Perce Tribe and Bureau of Land Management to:**

  1) maintain and improve the water quality in this lower 4 mile section of Slate Creek, and

  2) control the spread of noxious weeds and other harmful non-native plants.

The Lower Slate Canyon subwatershed covers approximately 4,900 acres. The bulk of the subwatershed (4,100 acres or 83%) is privately owned, with residences located along most of the stream reach. The BLM manages 810 acres in the southeast part of the subwatershed. The BLM lands are currently leased for cattle grazing and other land uses including timber harvest and recreation. The Forest Service manages a 30 acre sliver of land at the eastern edge of the subwatershed.

The Lower Canyon section of Slate Creek (extending four miles up from its mouth with the Salmon River) is an important aquatic travel corridor for migratory fish species. It is vital that the water quality in this section of Slate Creek be maintained or improved.

Since only a very small portion of the area is managed by the Forest Service, there are minimal opportunities to effect positive change through direct project implementation.

However, there are significant untapped opportunities to work cooperatively and collaboratively with the Nez Perce Tribe, the BLM and private landowners in this section of Slate Creek. Care must be taken by all landowners to monitor and understand the potential effects of the following on the aquatic resources of Slate Creek: timber harvest and road construction, aerial spraying for weeds, livestock concentrations near Slate Creek or its tributaries, inadequate human waste disposal systems and the cutting of brush or other riparian vegetation which is so important in maintaining low water temperatures.

Some collaboration opportunities might include:

- the formation of partnerships to gather and exchange resource information and data
- continue to work through the Cooperative Weed Management Area in the lower Salmon River Canyon
- pool resources and apply for grants which can be used to enhance the overall ecological (both terrestrial and aquatic) conditions of the area
- recruit volunteers and organize workdays or weekends to monitor conditions and carry out direct restoration projects. Encourage the formation of an "adopt a stream" group
- convene aquatic stakeholders to review restoration needs and set priorities (similar to the Salmon River weed control and eradication efforts)

The IDT recommends that the Salmon River Ranger District encourage face to face discussions and meetings between the mix of Lower Canyon land managers representing both private and public lands. Guest speakers and field trips would foster better understanding of the existing situation and possible trends.

7.4.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment in the Lower

Canyon, the pace and scale of future timber harvest and weed control treatments will have to be carefully managed to avoid negative impacts to watershed processes or aquatic conditions. The need for weed control treatments in this subwatershed is clear, but any such control efforts must be closely monitored and carried out in a manner that minimizes the potential for chemical contamination of Slate Creek.

Ponderosa pine restoration has been identified as a compatible activity so long as it does not impede restoration of aquatic resources. Immediate, concentrated efforts to reduce the fire risk, including intensive, large scale vegetation treatments and significant road construction, are not advised at this time.

Emphasis should be concentrated on the restoration of aquatic habitat and at-risk species in Slate Creek.

The long-term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances affect these components in synchrony.

7.4.3 Compatible Management Needs, Projects and Rationale

This subwatershed provides an important recreational corridor to recreational interests farther upstream. The access road #354 in this subwatershed is under the jurisdiction of and maintained by Idaho County and provides year-round access to private property and residences. Maintenance activities should minimize sediment production and removal of riparian vegetation. In some years, damage has occurred to the main Slate Creek road during the spring thaw. This should be closely monitored, and if needed, the road should be closed during these critical wet periods.

As in the lower elevation Forest service lands farther up the creek, the BLM lands in this part of Slate Creek would benefit from ponderosa pine restoration projects. Thus, a subordinate theme would be for the BLM to pursue projects that would restore ponderosa pine and upslope processes if they do not conflict with the objective to maintain and/or enhance aquatic conditions.

The IDT recommends that the BLM adopt a roads theme consistent with the roads theme on adjacent USFS lands. The objective would be to minimize the road-related aquatic impacts.

The BLM is encouraged to evaluate existing roads on the lands they manage for potential stabilization and decommissioning needs.

The ephemeral road system concept could apply to the BLM lands in this subwatershed. Roads that are creating sediment which might reach the creek should be evaluated for decommissioning or other corrective measures.

The BLM has reviewed thsi document and has indicated that where appropriate, the Lower Slate Canyon subwatershed priority needs, projects, adn rationale will be used for guidance in developing project proposals on BLM managed lands to help achieve the desired resource conditions.

7.4.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic restoration objective.

7.5 - Main Slate Canyon Subwatershed

7.5.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Main Slate Canyon subwatershed are:

- **restoration of the aquatic conditions and processes in main-stem Slate Creek**
- **restoration of the bunchgrass and ponderosa pine plant communities**
- **conserve scenic integrity**

The Main Slate Canyon subwatershed comprises most of the lower Slate Creek watershed, and is an important area from a wide range of resource and social perspectives. The principle management needs in this subwatershed are the dual objectives of aquatic restoration, particularly of the main-stem Slate Creek, and vegetation restoration to the extent and at a rate that does not prevent or significantly postpone achievement of the aquatic objective.

The Main Slate Canyon subwatershed covers approximately 18,300 acres. The bulk of the subwatershed (17,775 acres or 97%) is managed by the USFS. The BLM manages 415 acres in the southwest part of the subwatershed. The BLM lands are currently leased for cattle grazing and other land uses including timber harvest and recreation. There is also a private inholding (approximately 100 acres) in the Hurley Creek drainage.

Mainstem Slate Creek provides unique aquatic resource values within the subbasin context and within the watershed, and is a central component to recovery of at-risk aquatic species. Restoration of the aquatic conditions and processes in this main-stem is a very high management priority. While the vegetation conditions in the main canyon have a high departure from historic levels, they are not as unique in the subbasin context. Vegetation restoration efforts in these communities that result in significant short term impacts on aquatic values should be focused elsewhere in the subbasin where the aquatic values are not as high. The ultimate objective is to synchronize (to the extent possible) these ecosystem components such that their disturbance patterns and resulting conditions more closely reflect the historic interrelationship.

The other important uses and management activities in this subwatershed will generally be compatible with these primary needs, and are discussed below. Management activities in this subwatershed need to maintain the scenic integrity of the canyon, protect the historic value of this area to the Nez Perce Tribe and maintain the Wild and Scenic rivers attributes..

Aquatic Restoration

Restoration of the aquatic conditions in main-stem Slate Creek will require efforts focused on: the in-stream/ near-stream areas along Slate Creek, restoration of watershed slope processes in the main canyon area, and management of cumulative effects throughout the Slate Creek watershed. Restoration of main-stem conditions and processes will require significant efforts outside this subwatershed, particularly in the Little Slate subwatershed. However, given the active nature and sensitivity of the slopes in this subwatershed and the direct effects of activities and conditions in the near-stream/ in-stream environment, these two restoration efforts in this subwatershed are critical to achieving both the subwatershed and the overall watershed management needs.

Priority projects include;

- reduce the effects from the Main Slate Road
- reduce the mass failure risk from other roads in the subwatershed
- evaluate streamside harvest areas or other harvest areas in landslide prone terrain for need to plant trees or

shrubs to more rapidly recover streambank or slope stability

- evaluate and possible restore the near-stream and in-stream environment along Slate Creek, including the habitat improvement structures

- continue the non-motorized designation of trail #309, from the junction of #309 south to the junction with trails #302 and #303

The stream channels in this subwatershed are relatively resilient. Consequently, management of upslope and upstream problems should be the principle focus of the active restoration efforts. Mainstem Slate Creek is expected to have a high rate of natural recovery once these problems are addressed. Unfortunately, the press disturbance of the Main Slate Road has permanently altered the near-stream environment of the main-stem. While efforts should be made to minimize these effects, it should not be expected that there will be full restoration of the natural processes in this area. Response to this condition may require active channel restoration efforts.

Vegetation Restoration

The restoration of the bunchgrass and ponderosa pine plant communities is an important management need in this part of Slate Creek. The vegetation in the bunchgrass and ponderosa pine plant communities is significantly different from its historic condition. The bunchgrass community has altered composition, the ponderosa pine community has altered structure. There is a high priority need to restore these areas.

Restoring ponderosa pine and bunchgrass communities on south aspects and two storied stands of Douglas-fir, larch, and pine on north aspects is an important management need in this part of Slate Creek. Wildlife species that depend on the ponderosa pine communities are considered rare and the quality of that habitat is declining. Weed control will be an integral part of this restoration in open dry habitats susceptible to weed invasion. Increased stand density appears to be the most critical departure in forest communities. This has likely been accompanied by greater fuel accumulations and ladder fuels. There is a moderate to high priority need to restore these areas.

Projects are recommended that reduce stand density, reduce fuel loads and maintain ponderosa pine, as well as improve habitat for wildlife species that depend on these ponderosa pine habitats.

Priority projects in low elevation environments include:

- thin and/or burn in stands of ponderosa-pine and Douglas-fir to maintain pine at lower stand densities and reduce fuels (484 acres)

- foster collaborative efforts to treat noxious weeds, stabilize grassland composition, and improve vigor (2,672 acres)

- conduct a floristic inventory focused on grasslands and the Slate Creek valley bottom

7.5.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment, the pace and scale of these treatments will have to be carefully managed to avoid significant negative impacts to watershed processes or aquatic conditions. The level of vegetation treatment in this subwatershed also needs to be governed by the balance of activities elsewhere in the watershed. Focused, successful aquatic restoration efforts in other parts of the watershed, particularly restoration of the disturbance pattern and sediment regime in the Little Slate subwatershed, will create additional opportunity to manage vegetation in this area.

Restoration of the vegetation communities in this subwatershed is a big job, that will require continued efforts over decades. Over much of the area, there is not a transportation system in place that would facilitate this work. There is an increased

risk of stand replacing fires in this subwatershed, with possible consequences to the aquatic resources, that will take time to address. However, immediate, concentrated efforts to reduce this risk, including intensive, large-scale vegetation treatments and significant road construction, are not advised at this time. Until the aquatic habitat and at-risk species in this subwatershed are recovered to a more functional state, this strategy could be 'destroying them to save them'. By first addressing the press disturbances that are affecting these aquatic resources, such as the sediment regime and disturbance pattern in Little Slate, the habitat and the species should have increased resilience to withstand the expected natural and proposed human disturbances in this subwatershed. The long-term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances effect these components in synchrony.

7.5.3 Compatible Management Needs, Projects and Rationale

As in the lower elevation Forest service lands farther up the creek, the BLM lands in this part of Slate Creek would benefit from ponderosa pine restoration projects. Thus, a subordinate theme would be for the BLM to pursue projects that would restore ponderosa pine and upslope processes, if they do not conflict with the prime directive to maintain and/or enhance aquatic conditions. It will be important to establish specific aquatic objectives, which can be used to monitor attainment of aquatic restoration.

The IDT recommends that the BLM adopt a roads theme consistent with the roads theme on adjacent USFS lands. The objective of both would be to minimize the road-related aquatic impacts.

The BLM is encouraged to evaluate existing roads on the lands they manage for potential stabilization and decommissioning needs.

Wildlife Needs

This subwatershed provides important wildlife values, including low elevation ponderosa pine old growth, and some wildlife security. Wildlife management needs are compatible with the priority vegetation restoration needs. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of open ponderosa pine forest is retarded by the need to recover aquatic condition in the main-stem.

Compatible projects include:

- wildlife inventories that focus on ponderosa pine habitat
- old growth inventories should be conducted in ponderosa pine and mixed conifer communities

Survey techniques should be designed to determine species' presence/absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

On the south side of Main Canyon, many of the roads and trails do not have compatible access prescriptions, especially during times when wildlife are most vulnerable to human disturbances. The fall hunting season is a time when this subwatershed receives the

majority of the disturbance, along with summer OHV use. It is not known how much use these OHV trails receive, but the use has been increasing.

The BLM has reviewed thsi document and has indicated that where appropriate, the Main Slate Canyon subwatershed priority needs, projects, adn rationale will be used for guidance in developing project proposals on BLM managed lands to help achieve the desired resource conditions.

Compatible projects include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues.

7.5.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic restoration objective.

This subwatershed also provides important recreational values, particularly in terms of roaded recreational access, recreation sites, and streamside activities. These activities, properly managed, should not be in conflict with the high priority management needs expressed above and should be encouraged and supported.

Recreational development projects that significantly increase the fishing pressure on the at-risk aquatic species in main-stem Slate Creek would likely be incompatible with the recovery of these populations. Development of additional recreational facilities may also conflict with objectives for preservation of known cultural sites, and conservation of aquatic habitat.

7.6 - Little Van Buren Creek Subwatershed

7.6.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Little Van Buren subwatershed are:

- **restoration of slope processes to contribute to aquatic objectives for Main Slate Canyon**
- **restoration of ponderosa pine communities at low elevations**
- **restoration of whitebark pine communities at high elevations**

The Little Van Buren subwatershed is directly tributary to the Main Slate Canyon and is similar in setting and condition, except that it also includes some high elevation ridges with potential to support whitebark pine.

The principal management needs in this subwatershed should focus on: 1) aquatic restoration of Main Slate Canyon, and 2) ponderosa pine and whitebark pine restoration to the extent and at a rate that does not prevent or significantly postpone achievement of the aquatic restoration.

Slope processes including erosion and mass wasting in Little Van Buren Creek can directly affect main-stem Slate Creek, which provides unique aquatic resource values within the Lower Salmon River subbasin and within the Slate Creek watershed.

The vegetation conditions in this subwatershed have a high departure from historic levels, but slope instability and erodible soils constrain intensive vegetation restoration efforts. Vegetation restoration efforts in these communities that results in significant short term impacts to aquatic values should be focused elsewhere in the subbasin where the aquatic values are not as high. The ultimate objective in this subwatershed, as in Main Slate Canyon, is to synchronize, to the extent possible, aquatic and terrestrial ecosystem processes so that their disturbance patterns and resulting conditions more closely reflect the historic relationship. Wildlife species that depend on the ponderosa pine communities are considered rare and the quality of their habitat is declining.

The other important management needs in this subwatershed will generally be compatible with these primary needs, and are discussed below. All management activities in this subwatershed need to maintain the scenic integrity of the canyon.

Aquatic Restoration

Restoration of the aquatic conditions in Little Van Buren will require efforts focused on restoration of watershed slope processes.

Priority projects include:

- evaluate spur roads for likely decommissioning (see Map 60)
- evaluate Roads 2038, 441A, 2038H, and 9300A for needs to reduce mass failure risk or erosion
- evaluate streamside harvest areas for need to plant trees or shrubs to more rapidly recover streambank stability, shading, and eventual large wood sources
- evaluate need and feasibility for modifying design of road 2038 at stream crossings to accommodate passage of debris torrents

The stream channels in this subwatershed are relatively resilient; consequently management of upslope and upstream problems should be the principal focus of the active restoration efforts.

Vegetation Restoration

The restoration of the ponderosa pine plant communities on south aspects and two storied stands of Douglas-fir, larch, and pine on north aspects is an important management need in this part of Slate Creek.

Wildlife species that depend on the ponderosa pine communities are considered rare and the quality of that habitat is declining. Weed control will be an integral part of this restoration in open dry habitats susceptible to weed invasion. Increased stand density appears to be the most critical departure from historic conditions. This has likely been accompanied by greater fuel accumulations and ladder fuels. There is a moderate to high priority need to restore these areas.

Projects are recommended that reduce stand density, reduce fuel loads and maintain ponderosa pine and larch, as well as improve habitat for wildlife species that depend these ponderosa pine habitats.

Priority projects in low elevation environments include:

- thin and/ or burn in dense stands of mixed conifers on moderately warm and moderately dry habitat types to maintain the ponderosa pine and larch components and reduce fuels (986 acres)
- thin and/ or burn in stands of ponderosa-pine and Douglas-fir on moderately warm and dry habitats to maintain pine at lower stand densities and reduce fuels (152 acres)

The restoration of whitebark pine communities is a very important management need in the subwatershed at elevations above about 6,400 feet. Whitebark pine was historically a component of mixed subalpine stands. Blister rust, fire exclusion, and mountain pine beetle activity threaten to eliminate this species in the Slate Creek watershed. There is a very high priority to restore these areas.

Projects are recommended that provide forest openings for natural whitebark regeneration, protect existing live whitebark pine, or provide openings for planting whitebark pine.

Priority projects in high elevation environments include:

- thin, burn, or regeneration harvest in mixed subalpine stands of moderate or high tree density, and planting of whitebark pine (353 acres)
- thin, slashing, burn and plant whitebark pine in open subalpine forest stands (16 acres)

7.6.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment in Main Slate Canyon, the pace and scale of vegetation treatments in Little Van Buren will have to be carefully managed to avoid negative impacts to watershed processes or aquatic conditions. The level of vegetation treatment in this subwatershed also needs to be governed by the balance of activities elsewhere in the watershed. Focused, successful aquatic restoration efforts in other parts of the watershed will create additional opportunity to manage vegetation in this area.

Some restoration of the low elevation forests is already proposed under the Salmon River Canyon Fire EIS, using prescribed fire. A more extensive transportation system could facilitate vegetation treatments, but much of the lower subwatershed is susceptible to mass failure or debris torrents. Intensive, large scale vegetation treatments or road construction are not recommended at this time.

By designing whitebark pine restoration efforts on ridge systems, watershed effects can be minimized. Until the aquatic habitat and at-risk species in the main-stem are recovered to a more functional state, the ponderosa pine restoration will have to be carefully designed and implemented to minimize short term risks to the aquatic environment. By first addressing the press disturbances, primarily roads, that are affecting sediment regimes in Little Van Buren and the main-stem, streams can be returned to a state of resilience that can withstand the expected natural and proposed human disturbances in the subwatershed.

The long term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances are more closely aligned with historic disturbance regimes.

7.6.3 Compatible Management Needs, Projects and Rationale

This subwatershed provides important wildlife values, including low elevation ponderosa pine old growth, and some wildlife security. Wildlife management needs are compatible with the priority vegetation restoration needs. The aquatic restoration activities will not conflict with these wildlife needs, except insomuch as rate of restoration of open ponderosa pine forest or whitebark pine forest is retarded by the need to recover aquatic condition in the main-stem. It will be important to establish specific aquatic objectives, which can be used to monitor attainment of aquatic restoration.

Compatible projects include:

- wildlife inventories that focus on ponderosa pine and mixed conifer communities
- old growth inventories should be conducted in ponderosa pine and mixed conifer communities

Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

Many of the roads and trails in this subwatershed do not have compatible access prescriptions, especially during times when wildlife are most vulnerable to human disturbances. The fall hunting season is a time when this subwatershed receives the majority of the disturbance, along with summer OHV use. It is not known how much use these OHV trails receive, but the use has been increasing.

Compatible projects include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

It should not be necessary to complete a large planing effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues.

The wetlands in the upper portion of the watershed and the limestone substrate in the lower portion of the watershed may support rare or endemic plant species. Floristic surveys are recommended in these habitats.

Recreation use in this watershed is associated with the open roads and ridgeline trails. Road access for recreational use would change very little with decommissioning of spur roads. Streams are protected from impacts from motorized trail vehicles because this use is confined to the ridgetop. Area wide motorized trail use on the ridgetop, if severe, could retard whitebark pine restoration efforts. Area

management of motorized use is recommended.

7.6.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic restoration objective.

Creation of openings at high elevations for whitebark pine may be limited by acceptable water yield increases to sustain channel stability.

7.7 - Deadhorse Creek Subwatershed

7.7.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Deadhorse subwatershed are:

- **conserve aquatic processes and conditions in most of the watershed**
- **restore aquatic processes and conditions in the lower end of the subwatershed**
- **conserve wildlife security**

Aquatic Conservation

The upper portion of the Deadhorse subwatershed has high aquatic integrity, and is an important contribution to downstream aquatic condition, both in the Deadhorse subwatershed and in Slate Creek in general. The lower end of Deadhorse contains important at-risk aquatic species (see Map 24). The current integrity of the sediment regime and the temperature regime (see Figure 5.19) are key components of this contribution. Maintenance of the aquatic processes in this portion of Deadhorse should ensure that it continues to positively contribute to downstream aquatic conditions.

Priority projects include:

- evaluate the effect of existing trails on aquatic resources, and reconstruct or relocate trails to reduce effects as appropriate while providing for use
- complete fisheries surveys in upper Deadhorse to determine presence of bull trout

In general, passive management will provide for conservation of the existing aquatic processes and conditions in Deadhorse, along with full consideration of management activities proposed for other purposes.

Aquatic Restoration

The lower end of Deadhorse subwatershed is an important area for at-risk aquatic species, and has reduced integrity. Restoration of the aquatic processes and conditions in this portion of the subwatershed is an important management need. Existing roads are the principal contribution to the current situation. The ongoing project that will convert the streamside road in lower Deadhorse to a trail is focused on the worst of the problems with the existing roads. Other significant road decommissioning projects have been identified in the subwatershed (see Map 61) and should be pursued.

Priority projects include:

- reduce effects of existing roads on aquatic resources, including the decommissioning of roads as identified in Map 61
- evaluate the effect of existing trails on aquatic resources, and reconstruct or relocate trails to reduce effects as appropriate while providing for use

It should not be necessary to complete a large planning effort to proceed with the road related projects in this area. The roads recommended for decommissioning do not play an important role in the transportation system. These roads are not connected to identified needs for vegetation treatments prior to decommissioning. A focused environmental assessment process should be adequate to consider the decommissioning of these roads, and should be able to proceed as an important job when resources are available.

The evaluation and subsequent trail improvements in this watershed should be conducted in such a manner to address aquatic, wildlife, and use issues. While this evaluation and any subsequent plans need to integrate these areas, most of the projects should be able to proceed independently. Given the importance and use of this trail system to motorized users, this project should be a priority to implement.

Conservation of Wildlife Security
This subwatershed provides important security for big game and furbearers with low road densities and very little disturbance throughout most of the year. It is also adjacent to the Van Buren subwatershed which has the same characteristics of low road densities and a high level of security.

Priority projects include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

The fall hunting season is a time when this subwatershed receives the majority of the disturbance, along with summer OHV use along ridgetop trails. It is not known how much use these OHV trails receive, but the use has been increasing.

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues. While this evaluation and any subsequent plans need to integrate these areas, the project itself should be able to proceed independently.

7.7.2 Relationship Between Priority Management Needs

The conservation of aquatic conditions and wildlife security in this subwatershed should be mutually compatible. Restoration of the aquatic processes and conditions in the lower portion of the watershed should be able to proceed without conflicting with these conservation objectives.

7.7.3 Compatible Management Needs, Projects and Rationale

Management needs in the Deadhorse subwatershed considered compatible with the priority management needs include: restoration of whitebark pine, conduct wildlife inventories, and providing for recreational trail use, particularly motorized use.

Restoration of Whitebark Pine
The restoration of whitebark pine communities is a very important management need in the subwatershed at elevations above about 6400 feet. Whitebark pine was historically a component of mixed subalpine stands. Blister rust, fire exclusion, and mountain pine beetle activity threaten to eliminate this species in the Slate Creek watershed. There is a very high priority to restore these areas.

Projects are recommended that provide forest openings for natural whitebark regeneration, protect existing live whitebark pine, or provide openings for planting whitebark pine.

Compatible projects in high elevation environments include:

- thin, burn, or regeneration harvest in mixed subalpine stands of moderate or high tree density, and planting of whitebark pine (531 acres)
- thin, slashing, burn and plant whitebark pine in open subalpine forest stands (231 acres)

Additional Wildlife Needs
This subwatershed provides important wildlife values, including low elevation ponderosa pine old growth, and wildlife security. Wildlife management needs are compatible with the priority vegetation restoration needs. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of open ponderosa pine forest or whitebark pine forest is retarded by the need to recover aquatic condition in the main-stem.

Compatible projects include:

- wildlife inventories that focus on ponderosa pine and mixed conifer communities

- old growth inventories should be conducted in ponderosa pine and mixed conifer communities.

Survey techniques should be designed to Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

Provide for Recreational Use

The trails down the ridges of this subwatershed are important facilities for recreation use, particularly motorized use. These trails should be managed to continue to provide for this use, and prepare for the expected increase in this use in the coming years. An important aspect of providing for this use is to ensure that these facilities can accommodate the current and expected use levels while minimizing the effect on other resources, particularly wildlife and aquatic.

Compatible projects include:

- maintain, upgrade, or relocate existing motorized trails to accommodate use levels
- reduce the adverse effect of these facilities and their use on other resources

The motorized user groups in the local area are fairly active in the Slate Creek watershed, and represent a unique opportunity for partnership and cooperation to address the evaluation and improvement of the trails in this area. Efforts should be made to incorporate these users into the evaluation and implementation of this management need.

7.7.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic restoration objective.

Creation of openings at high elevations for whitebark pine may be limited by acceptable water yield increases to sustain channel stability.

7.8 - North Fork Slate Creek Subwatershed

7.8.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the North Fork Slate Creek subwatershed are:

- **restoration of aquatic processes**
- **restoration of ponderosa pine communities**

The North Fork Slate Creek is a fourth order tributary to the Lower Main Slate Creek and provides about ten percent of the flow in the Slate Creek Watershed. The North Fork Slate Creek has one major tributary, Peter Ready Creek. This subwatershed is an important area from a wide range of resources and social perspectives. Aquatic restoration and restoration of ponderosa pine community are the objectives for this subwatershed. Wildlife species that depend on the ponderosa pine communities are considered rare and the quality of that habitat is declining.

The North Fork Slate Creek supports at-risk aquatic species, including steelhead trout in lower reaches and westslope cutthroat trout in upper reaches. Conservation opportunities are good because this subwatershed is a relatively large, undisturbed area. The existing equivalent clearcut area is eight percent and it is unlikely the flow regimes within the subwatershed have been affected by management activities. The upper lower gradient reaches are sensitive to bank damage. Grazing activity and uncontrolled off-highway vehicle (OHV) use have degraded localized areas of these headwater channels and recovery would be retarded if the practices were to continue unchanged.

Aquatic Restoration

Restoration of the aquatic conditions in the North Fork Slate Creek should focus, in general, on the in-stream and near-stream effects in upper North Fork and Peter Ready Creeks, and restoration of upland aquatic processes in lower North Fork. In the upper subwatershed, effects from near-stream activities, such as roads and trails, and grazing need to be addressed. In the lower subwatershed, the risks of road and harvest activities on areas with mass wasting sensitivity, and the direct effects of the North Fork trail should be addressed. Restoration in this subwatershed will contribute to the westslope and steelhead populations in the North Fork, along with the downstream conditions in main-stem Slate Creek.

Priority projects include:

- restore upslope processes by reducing the risk associated with road instability
- reduce overall adverse effects from roads, including reducing road densities
- adjust grazing practices and off road vehicle use to reduce effects to headwater meadows and overall water quality (surface sediment, water temperature, and contaminants)
- evaluate the suitability of trails open for motorized use as they affect aquatic processes and conditions. Upgrade, relocate or restrict use as needed to accomplish aquatic restoration
- restore riparian vegetation, water elevation, and channel morphology in meadows effected by grazing
- reduce trail/grazing impacts on tributary streams to North Fork

Aquatic restoration in the North Fork subwatershed includes a variety of elements. Road related restoration needs will need to be integrated into a overall transportation assessment in this area. Reduction in the risks associated with mass wasting landscapes should be a primary focus of this transportation plan. Additionally, there are many projects in upper North Fork

associated with management of near-stream activities and restoration of riparian conditions. These activities will require adjustment of some activities, along with evaluation and design of active restoration projects. This restoration could be implemented either through a broad integrated planning effort, or through project specific analyses.

Vegetative Restoration

A major portion of the North Fork Slate Creek subwatershed supports ponderosa pine or Douglas-fir-ponderosa pine communities. Fire had commonly played a role in the development and maintenance of this community. Frequent cool surface fires on south aspects thinned and maintained stands rather than replacing them. Post settlement fire exclusion has influenced vegetation conditions. The ingrowth of shade tolerant species (grand fir and Douglas-fir) and absence of fire have resulted in greater continuity of closed canopy conditions across a larger area, more vertical structure and more stress induced susceptibility to insect and disease activity. These vegetative conditions predispose the subwatershed to the risks associated with stand replacing fires.

Restoration of open ponderosa pine communities on south aspects and two storied stands of Douglas-fir, larch, and pine on north aspects is an important management need in this part of Slate Creek. Weed control will be an integral part of this restoration in open dry habitats susceptible to weed invasion. Increased stand density appears to be the most critical departure. This has likely been accompanied by greater fuel accumulations and ladder fuels. There is a moderate to high priority to restore these areas.

These projects also improve habitat for wildlife species that depend on ponderosa pine communities. Priority projects in low elevation environments include:

- thin and/ or burn in dense stands of mixed conifers on moderately warm and moderately dry habitat types to maintain the ponderosa pine and larch components and reduce fuels (2,824 acres)
- thin and/ or burn in stands of ponderosa-pine and Douglas-fir on moderately warm and dry habitats to maintain pine at lower stand densities and reduce fuels (675 acres).
- restore patch size diversity: Increase median area of stands in open canopy mid and late seral forest and closed canopy mid and late seral forest.
- conduct a floristic inventory of the basalt scabs and bluffs

7.8.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment in Main Slate Canyon, the pace and scale of vegetation treatments in the lower elevation portion of North Fork Slate Creek subwatershed will have to be carefully managed to avoid negative impacts to watershed processes or aquatic conditions. The level of vegetation treatment in this subwatershed also needs to be governed by the balance of activities elsewhere in the watershed. Focused, successful aquatic restoration efforts in other parts of the watershed will create additional opportunity to manage vegetation in this area.

A more extensive transportation system could facilitate vegetation treatments in the low elevation portion of the subwatershed, but much of the lower subwatershed is susceptible to mass failure or debris torrents. Intensive, large scale vegetation treatments or road construction are not recommended at this time.

By designing vegetation restoration efforts that utilize and then remove portions of the existing transportation system were failure risk is high , watershed effects can be minimized. Until the aquatic habitat and at-risk species in the main-stem are recovered to a more functional state, a vegetation restoration strategy is recommended that is carefully coordinated with watershed improvement efforts to result in improved or maintained aquatic conditions over short

and long terms. By first addressing the press disturbances, primarily roads, that are affecting sediment regimes in North Fork Slate Creek and the main-stem, streams can be returned to a state of resilience that can withstand the expected natural and proposed human disturbances in the subwatershed.

The long term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances are aligned with historic disturbance regimes.

7.8.3 Compatible Management Needs, Projects and Rationale

This subwatershed provides important recreational as well as cultural values. In particular, motorized trail use and dispersed camping, are valued by the public. Properly managed, these activities should not conflict with the high priority management needs identified above. Activities in the Patrol Point and Dairy Mountain area should not detract from the semi-primitive character of the area.

Compatible projects include:

- maintain system trails
- conserve heritage sites

This subwatershed provides important wildlife values, including low elevation ponderosa pine old growth, and some wildlife security. Wildlife management needs are compatible with the priority vegetation restoration needs. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of open ponderosa pine forest or whitebark pine forest is retarded by the need to recover aquatic condition in the main-stem.

Compatible projects include:

- wildlife inventories that focus on ponderosa pine and mixed conifer communities
- old growth inventories should be conducted in ponderosa pine and mixed conifer communities

Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

The terrain in the headwaters of this subwatershed is such that OHV can travel places other than on designated trails and security for wildlife species at various times of the year is jeopardized. Summer and fall hunting seasons receive the majority of the OHV use.

Projects designed to keep OHVs on designated routes include:

- Improve tread on Trails 385 and 386
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes

in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues.

Several ponds within the subwatershed provide habitat for amphibians. These ponds are also used as watering sources for livestock. There is a need to gather information on the use of these rare elements by livestock and design facilities to both accommodate livestock and protect habitat for amphibians.

Compatible projects include:

- determine the level of use by livestock and then design and implement alternate livestock watering sources and fence ponds which better protect amphibians

It should not be necessary to complete a large planning effort to proceed with this project. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent improvements should be conducted in such a way to address aquatic, wildlife, range, and other issues.

7.8.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic restoration objective.

Creation of openings that result in large water yield increases in areas susceptible to debris torrents are likely incompatible at this time. Eventually, restoration of debris torrent regimes to natural levels in channels where road crossings do not highly alter this disturbance process should be sought.

7.9 - Upper Main Slate Subwatershed

7.9.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Upper Main Slate subwatershed are:

- **conserve aquatic conditions and processes in the upper subwatershed**
- **restore aquatic conditions and processes in the lower subwatershed**
- **restore ponderosa pine communities at low elevations**
- **restore whitebark pine communities at high elevations**
- **improve recreation resources, emphasizing trail recreation**

Over half of the Upper Main Slate subwatershed is in the Gospel-Hump wilderness. The principal management needs in the wilderness portion of the subwatershed are conserving aquatic conditions and processes and restoring whitebark pine. In the nonwilderness, lower elevation portion of the subwatershed, the principal needs are restoration of aquatic conditions and processes in main-stem Slate Creek and ponderosa pine restoration to the extent and at a rate that does not prevent maintenance of the aquatic objective.

The cold water and sustained base flows of the Upper Main Slate subwatershed help support steelhead and spring chinook spawning and rearing in main-stem Slate Creek and locally supported populations of steelhead, redband trout, and westslope cutthroat trout.

Lower and Upper Slate Lakes were historically fishless, but now support introduced brook trout. Brook trout have also become strongly established in the low meadow reaches below Slate Lakes. Most components of in-stream and riparian habitat are in place and in good condition within the wilderness portion of the subwatershed. Fire exclusion within both wilderness and nonwilderness portions of the watershed has affected vegetation and aquatic processes, increasing stand densities, and probably has altered sediment, large wood, and water yield regimes, although less so than in the roaded portion. Fire exclusion, blister rust and mountain pine beetle activity have resulted in dramatic declines in whitebark pine. The ultimate objective in the wilderness portion of the subwatershed is to facilitate the role of naturally ignited fire to restore whitebark pine and align terrestrial and aquatic disturbance regimes.

Mainstem Slate Creek, immediately downstream, is a central component of at-risk aquatic species, and channel and slope processes in the lower portion of Upper Main Slate operate very similarly. Restoration of the aquatic conditions and processes in the main-stem is a very high management priority. Management of upslope and upstream problems in the low elevation portion of Upper Main Slate should be the principal focus of the active restoration efforts. While the vegetation conditions in the lower portion of the subwatershed have a high departure from historical levels, they are not as unique as the aquatic values of the main-stem in the subbasin context. Vegetation restoration efforts in these communities that result in significant short term impacts to the aquatic resource should be focused elsewhere in the subbasin where the aquatic values are not as high.

Most vegetation disturbance will require significant watershed improvement activities to offset short term impacts to aquatic resources. The vegetation conditions in the low elevation portion of the subwatershed have a high departure from historical levels, but slope instability and erodible soils constrain intensive vegetation restoration efforts. The ultimate objective in

the lower portion of the subwatershed, as in Main Slate Canyon, is to synchronize to the extent possible aquatic and terrestrial ecosystem processes so that their disturbance patterns and resulting conditions more closely reflect the historic relationship. Wildlife species that depend on the ponderosa pine communities are considered rare and the quality of that habitat is declining.

Rocky Bluff campground and Rag Station Trail 313 are main access points to the Gospel-Hump wilderness. Slate Lakes are a popular day use area. The old Milner Road is an opportunity to provide for motorized and nonmotorized trail travel in a relatively natural setting. All of these facilities require evaluation and potentially redesign or upgrading of maintenance to accommodate these uses and prevent resource damage. Management activities in the lower portion of the subwatershed need to maintain the scenic integrity of the canyon, and management activities in the wilderness portion need to sustain natural disturbance processes to support a naturally functioning wilderness setting.

The other important management needs in this subwatershed will generally be compatible with these primary needs, and are discussed below.

Aquatic Conservation

Aquatic conservation in the wilderness portion of Upper Main Slate is focused on maintaining the intact upland aquatic processes, while reducing effects on Upper Slate Creek in the near-stream area from trails, roads and grazing. Enhancing the natural role of fire in this area will contribute to sustaining aquatic processes. Nearstream effects that need to be addressed are principally located along Upper Slate Creek. The wide distribution of brook trout throughout this area, along with the absence of other species, makes consideration of restoring the biological integrity of most of this area a low priority, except for Slate Lakes.

Priority projects include:

- improve trail tread and drainage of Rag Station Trail 313, as well as management of use and maintenance priority
- evaluate alternative routes for livestock trailing to reduce effects on Trail 313
- road maintenance, aggregate placement, and surface drainage improvement on Road 444
- evaluate brook trout removal from Slate Lakes, with subsequent establishment of native species in lakes
- provide planning support to enhance the role of naturally ignited fire in the wilderness

Aquatic Restoration

Restoration of aquatic processes in the lower elevation nonwilderness portion of Upper Main Slate will require efforts focused on restoration of watershed slope processes.

Priority projects include:

- reconstruction of road 354 to improve surface stability and surface drainage. Establish a higher design standard and increase the maintenance frequency on Road 354, including template design and drainage improvement
- evaluate sources of channel instability in lowest reaches of Slate Creek near the confluence of Basin Creek
- stabilize road cuts and improve drainage on Road 221 at Slate Creek crossing
- decommission roads as shown in Map 63
- evaluate for decommissioning or stabilization roads as shown in Map 63
- evaluate Milner road and trail south of Rocky Bluff for potential road to trail conversion, and stabilization
- evaluate streamside harvest areas for need to plant trees or shrubs to

more rapidly recover streambank stability, shading, and eventual large wood sources

- revegetation and/ or stabilization of road cut slopes on Road 221

The stream channel in the lower subwatershed shows signs of high instability, thought to be a result of natural flood events. Activities that exacerbate this situation should be avoided. However, channels in the lower part of the subwatershed are relatively resilient; consequently management of upslope and upstream problems should be the principal focus of the active restoration efforts.

Vegetation Restoration

The restoration of whitebark pine communities is a very important management need in the subwatershed at elevations above about 6300 feet. Whitebark pine was historically a component of mixed subalpine stands and a stand dominant on high elevation ridges. Blister rust, fire exclusion, and mountain pine beetle activity threaten to eliminate this species in the Slate Creek watershed. There is a very high priority to restore these areas, within the context of wilderness management objectives and in suitable nonwilderness areas.

Increased support for use of naturally ignited wildland fire is recommended in wilderness and inaccessible nonwilderness to provide forest openings for natural whitebark regeneration, suppress encroachment by more fire sensitive subalpine fir and Engelmann spruce, and to maintain existing more fire tolerant whitebark pine. Priority fire use in high elevation wilderness environments includes:

- favor lethal fire in mixed subalpine stands of moderate or high tree density, to seed caching sites for Clark's nutcracker, which is the primary dispersal agent for whitebark pine (up to 2,094 acres)

- favor mixed severity fire in whitebark pine dominated stands of moderate or high tree density, to reduce encroaching spruce and fir (27 acres)

- favor low severity fire in open stands of whitebark pine to create additional seed caching sites, maintain pine, and prevent encroachment of spruce and fir (311 acres)

Whitebark pine restoration in nonwilderness areas may require fire use also, because of poor accessibility and low timber values. Management ignited or naturally ignited fire, or mechanical means may be used as feasible.

Priority projects in nonwilderness areas include:

- thin, burn, or regenerate mixed subalpine stands of moderate or high tree density, and planting of whitebark pine (292 acres).

The restoration of the ponderosa pine plant communities on south aspects and two storied stands of Douglas-fir, larch and pine on north aspects is an important management need in the lower portion of this subwatershed. Weed control will be an integral part of this restoration in open dry habitats susceptible to weed invasion. Increased stand density appears to be the most critical departure. This has likely been accompanied by greater fuel accumulations and ladder fuels. There is a moderate to high priority to restore these areas.

Projects are recommended that reduce stand density, reduce fuel loads and maintain ponderosa pine and larch, as well as improve habitat for wildlife species that depend these ponderosa pine habitats. Priority projects in low elevation environments include:

- thin and/ or burn dense stands of mixed conifers on moderately warm and moderately dry habitat types to maintain the ponderosa pine and larch components and reduce fuels (731 acres)

- thin and/ or burn in stands of ponderosa-pine and Douglas-fir on

moderately warm and dry habitats to maintain pine at lower stand densities and reduce fuels (100 acres)

See Map 45 and Appendix L for locations of potentially suitable stands.

7.9.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment in Main Slate Canyon, the pace and scale of vegetation treatments in the lower elevation portion of Upper Main Slate subwatershed will have to be carefully managed to avoid negative impacts to watershed processes or aquatic conditions. The level of vegetation treatment in this subwatershed also needs to be governed by the balance of activities elsewhere in the watershed. Focused, successful aquatic restoration efforts in other parts of the watershed will create additional opportunity to manage vegetation in this area.

A more extensive transportation system could facilitate vegetation treatments in the low elevation portion of the subwatershed, but much of the lower subwatershed is susceptible to mass failure or debris torrents. Intensive, large scale vegetation treatments or road construction that result in significant short term watershed impacts are not recommended at this time. By designing whitebark pine restoration efforts to focus first on ridge systems, watershed effects can be minimized. Until the aquatic habitat and at-risk species in the main-stem are recovered to a more functional state, a less aggressive vegetation restoration strategy is recommended. By first addressing the press disturbances, primarily roads, that are affecting sediment regimes in Upper Main Slate and the main-stem, streams can be returned to a state of resilience that can withstand the expected natural and proposed human disturbances in the subwatershed. The long term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances are aligned with historic disturbance regimes.

7.9.3 Compatible Management Needs, Projects and Rationale

Recreation projects are recommended that provide for roaded and motorized and nonmotorized trail recreation. Improvement or relocation of some trails to better withstand motorized use may be needed. Some of these recreation projects will further aquatic restoration objectives as well.

Compatible recreation projects include:

- on Rag Station Trail 313 improve tread and drainage, better regulate unauthorized motorized use and increase frequency of maintenance
- evaluate Rocky Bluff campground for suitability of location to reduce impacts to aquatic resources, maintenance needs and hazard trees
- on Milner road and trail south of Rocky Bluff, evaluate feasibility of road to trail conversion, and establish a travelway designed to accommodate authorized uses and reduce impacts to aquatic resources. Establish and adhere to a maintenance schedule that will achieve these objective.
- install switchbacks on lower end of trail 310 to reduce erosion
- install toilets at selected places along the 221 Road

See Appendix K. This subwatershed provides important wildlife values, mostly in the wilderness portion, including high elevation spruce-fir old growth, and wildlife security, as well as low elevation ponderosa pine old growth. Wildlife management needs are compatible with the priority needs if wildland fire use does not immediately threaten to eliminate all the spruce-fir old growth. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of open ponderosa pine forest or whitebark pine forest is retarded by the need to recover aquatic condition in the main-stem.

Compatible wildlife projects include:

- wildlife inventories that focus on ponderosa pine and mixed conifer communities

Survey techniques should be designed to determine species' presence/absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

Several roads and trails in this subwatershed do not have compatible access prescriptions, especially during times when wildlife are most vulnerable to human disturbances. The fall hunting season is a time when this subwatershed receives the majority of the disturbance, along with summer OHV use. It is not known how much use these OHV trails receive, but the use has been increasing.

Compatible projects include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues.

The wetlands and high elevation ridges in the upper portion of the watershed may support rare or endemic plant species. Floristic surveys are recommended in these habitats.

Several ponds within the subwatershed provide habitat for amphibians. These ponds are also used as watering sources for livestock. There is a need to gather information on the use of these rare elements by livestock and design facilities to both accommodate livestock and protect habitat for amphibians.

Compatible grazing management projects include:

- determine the level of use by livestock and then design and implement alternate livestock watering sources and fence ponds for amphibian protection

7.9.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic conservation objective.

7.10 - Boulder Creek Subwatershed

7.10.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Boulder Creek subwatershed are:

- **restore whitebark pine communities at high elevations**
- **conserve aquatic conditions and processes in the upper subwatershed**
- **restore aquatic conditions and processes in the lower subwatershed**

Over two thirds of the Boulder Creek subwatershed is roadless. The principal management needs in the roadless portion of the subwatershed are conserving aquatic conditions and processes and restoring whitebark pine. In the lower elevation portion of the subwatershed, the principal needs are restoration of aquatic conditions and processes emphasizing reduction of road effects and road density.

The cold water and sustained base flows of the Boulder Creek subwatershed helped support steelhead and spring chinook spawning and rearing in main-stem Slate Creek and locally supported populations of westslope cutthroat trout. This population in upper Boulder Creek may be reproductively isolated from other subpopulations in Slate Creek. Brook trout have also become established in Boulder Creek, but have not supplanted the cutthroat. Most components of in-stream and riparian habitat are in place and in good condition within the roadless portion of the subwatershed. Fire exclusion has affected vegetation and aquatic processes, increasing stand densities, and probably has altered sediment, large wood, and water yield regimes, although less so than in the roaded portion. Fire exclusion, blister rust and mountain pine beetle activity have resulted in dramatic declines in whitebark pine. The ultimate objective in the roadless portion of the subwatershed is to facilitate the role of naturally ignited or management ignited fire to restore whitebark pine and align terrestrial and aquatic disturbance regimes. Vegetation in the lower portion of the watershed has departed from historical conditions to a lesser degree. This area is similar to Little Slate Creek, in that the landscape, once prone to lethal fire at infrequent intervals, has become an extensive matrix of medium and large trees, perforated by small harvest units. Few individual stands are outside the range of natural variability, but the landscape as a whole does not display the pattern of moderate to large patches of early seral forest.

The lower reaches of Little Slate Creek, and Main Slate are downstream, and are a central component of at-risk aquatic species. Restoration of the aquatic conditions and processes in Main Slate Canyon is a very high management priority. Management of sediment regimes through treatment and adjustment of the transportation system in the low elevation portion of Boulder Creek should be the principal focus of the active restoration efforts.

While the vegetation conditions in the subwatershed have a moderate to high departure from historical levels, they are not as unique as the aquatic values of the main-stem in the subbasin context. Vegetation restoration efforts in these communities that result in significant short term impacts to aquatic resources should be focused elsewhere in the subbasin where the aquatic values are not as high. Restoration of the large scale, infrequent and severe disturbance regime in the subwatershed will be constrained by current highly altered sediment regimes in the subbasin. The ultimate objective in the subwatershed, after substantial aquatic restoration has occurred, is to align to the extent possible aquatic and terrestrial ecosystem processes so that their disturbance patterns and resulting conditions more closely reflect the historical relationship.

Trail 310 from Rocky Bluff Campground to Umbrella Butte is an important access to the Gospel-Hump wilderness. The old Milner Road is an opportunity to provide for motorized and nonmotorized trail travel in a relatively natural setting. The Milner Road requires evaluation and potential redesign or upgrading of maintenance to accommodate these uses and prevent resource damage. Management activities in the subwatershed need to maintain the scenic integrity of the roadless area and to promote natural or naturally appearing disturbance processes to maintain its roadless character.

The other important management needs in this subwatershed will generally be compatible with these primary needs, and are discussed below.

Vegetation Restoration

The restoration of whitebark pine communities is a very important management need in the subwatershed at elevations above about 6300 feet. Whitebark pine was historically a component of mixed subalpine stands and a stand dominant on high elevation ridges. Blister rust, fire exclusion, and mountain pine beetle activity threaten to eliminate this species in the Slate Creek watershed. There is a very high priority to restore these areas, in the context of retaining roadless character and conserving late seral habitat in adjacent more moist subalpine forest.

Increased support for use of naturally ignited wildland fire is recommended in wilderness and inaccessible nonwilderness to provide forest openings for natural whitebark regeneration, suppress encroachment by more fire sensitive subalpine fir and Engelmann spruce, and to maintain existing more fire tolerant whitebark pine. Priority fire use in high elevation wilderness environments includes:

- favor lethal fire in mixed subalpine stands of moderate or high tree density, to seed caching sites for Clark's nutcracker, which is the primary dispersal agent for whitebark pine (up to 502 acres)
- favor mixed severity fire in whitebark pine dominated stands of moderate or high tree density, to reduce encroaching spruce and fir (93 acres).
- favor low severity fire in open stands of whitebark pine to create additional seed caching sites, maintain pine, and prevent encroachment of spruce and fir (58 acres)

Increased support for use of naturally ignited or management ignited fire in unroaded nonwilderness areas is needed to provide forest openings for whitebark pine seed caching and establishment, reduce spruce and fir encroachment, and maintain more fire tolerant existing whitebark pine

Whitebark pine restoration in nonwilderness areas may require use of naturally ignited or management ignited fire, because of poor accessibility and low timber values. Mechanical means may be used as feasible.

Priority projects in nonwilderness areas include:

- thin, burn, or regenerate mixed subalpine stands of moderate or high tree density, and plant whitebark pine (3,153 acres)
- slash, burn, and plant whitebark pine in open subalpine stands (330 acres)

The restoration of vegetation disturbance dynamics through the less frequent, but larger scale disturbance at mid elevations is a moderate priority management need in this subwatershed.

As part of this theme, projects are recommended that can be used to maintain larch overstories in two storied stands, regenerate lodgepole pine to provide early seral habitat, and reconfigure disturbance areas to result in larger patches of heterogeneous disturbance states, and watershed disturbance at less frequent intervals. These 1000-5000 acre areas would require little subsequent disturbance for 35-50 years. Dense stands of

regenerating lodgepole pine would provide lynx habitat. Dense snag patches of lodgepole pine or mixed conifer would provide snag and down wood habitat for dependent species. Reduction of road density and road use would enhance wildlife security for both furbearing animals and ungulates. Priority projects in mid elevation environments historically dominated by infrequent lethal fire include:

- thin, or shelterwood and burn to maintain western larch, or regenerate lodgepole pine, in dense stands, leaving high densities (>20 per acre) of snags representing the array of occurring size classes. Residual overstories would be retained. (934 acres)
- regenerate old lodgepole pine (>140 years on moist habitat types and more than 110 years on dry habitat types) leaving high densities of snags (50-100 per acre) representing the array of occurring size classes. This is appropriate where old growth is not a priority, and where harvest would contribute to the ability to reduce road density in an area (161 acres)

See Map 45 and Appendix L for locations of potentially suitable stands.

Aquatic Conservation
Aquatic conservation in the upper portion of Boulder Creek is focused on enhancing the role of naturally ignited or management ignited fire in sustaining aquatic processes, and conserving westslope cutthroat genetic integrity.

Priority projects include:

- evaluate westslope cutthroat trout in upper Boulder for evidence of genetic uniqueness in comparison to other subpopulations in Slate Creek
- evaluate risk to cutthroat population by introduced brook trout and develop project proposal to address identified risk
- provide planning support to enhance the role of naturally ignited fire in the wilderness

Aquatic Restoration
Restoration of aquatic processes in the lower elevation roaded portion of Boulder Creek will require efforts focused on restoration of sediment regimes.

Priority projects include:

- on Road 221 evaluate culverts for diversion risk as indicated in Appendix J
- evaluate Road 9315 for stabilization needs
- stabilize road cuts, install sediment traps, and improve drainage on Road 221
- decommission roads and evaluate for decomissioning roads as shown in Map 64
- evaluate Milner road and trail south of Rocky Bluff for potential road to trail conversion, and stabilization
- evaluate streamside harvest areas as shown in Map 14 for need to plant trees or shrubs to more rapidly recover shading and eventual large wood sources

The stream channels in the lower part of the subwatershed are relatively resilient; consequently management of upslope and upstream problems should be the principal focus of the active restoration efforts.

7.10.2 Relationship Between Priority Management Needs

Given the importance and current condition of the aquatic environment in Main Slate Canyon, the pace and scale of vegetation treatments in the lower elevation portion of Upper Main Slate subwatershed will have to be carefully managed to avoid negative impacts to watershed processes or aquatic conditions. The level of vegetation treatment in this subwatershed also needs to be governed by the balance of activities elsewhere in the watershed. Focused, successful aquatic restoration efforts in other parts of the watershed will create additional opportunity to manage vegetation in this area.

A more extensive transportation system could facilitate vegetation treatments in the low elevation portion of the subwatershed, but much of the lower subwatershed is susceptible to mass failure or debris torrents. Intensive, large scale vegetation treatments or road construction are not recommended at this time. By designing whitebark pine restoration efforts to focus first on ridge systems, watershed effects can be minimized. Until the aquatic habitat and at-risk species in the main-stem are recovered to a more functional state, a vegetation restoration strategy is recommended that is carefully coordinated with watershed improvement efforts to result in improved or maintained aquatic conditions over short and long terms. By first addressing the press disturbances, primarily roads, that are affecting sediment regimes in Upper Main Slate and the main-stem, streams can be returned to a state of resilience that can withstand the expected natural and proposed human disturbances in the subwatershed. The long term objective is to reconnect the aquatic and terrestrial components of this ecosystem, to the extent possible, so that the natural and human disturbances are aligned with historic disturbance regimes.

7.10.3 Compatible Management Needs, Projects and Rationale

Recreation projects are recommended that provide for roaded and motorized trail recreation in lower Boulder Creek. Improvement or relocation of some trails to better withstand motorized use may be needed. Some of these recreation projects will further aquatic restoration objectives as well.

Compatible recreation projects include:

- continue closure of trail 309 to motorized vehicles south of the link to trail 301. Design a new trail stream crossing at Boulder Creek to accommodate nonmotorized use
- on Milner road and trail, evaluate feasibility of road to trail conversion, and establish a travelway designed to accommodate authorized uses and reduce impacts to aquatic resources. Establish and adhere to a maintenance schedule that will achieve these objectives
- additional planning is needed for dispersed campsites, parking, trailheads, and RV facilities that are compatible with the integrated themes

See Appendix K.

This subwatershed provides important wildlife values, including high elevation spruce-fir old growth, low elevation ponderosa pine old growth, and some wildlife security. Wildlife management needs are compatible with the priority needs if wildland fire use does not immediately threaten to eliminate all the spruce-fir old growth. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of whitebark pine forest is retarded by the need to conserve aquatic condition in Boulder Creek.

Compatible wildlife projects include:

- wildlife inventories that focus on mixed conifer and spruce/ fir communities
- old growth inventories should be conducted in mixed conifer and spruce/ fir communities

Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old

growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

The terrain in the headwaters of this subwatershed is such that OHV can travel places other than on designated trails and security for wildlife species at various times of the year is jeopardized. Summer and fall hunting seasons receive the majority of the OHV use.

Compatible projects designed to keep OHVs on designated routes include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues.

The Little Boulder Creek area may support communities of rare or endemic plant species, including *Allotropa* and *Andreaea*. Wetlands and high elevation ridges in the upper portion of the watershed may support rare or endemic plant species. Floristic surveys are recommended in these habitats.

7.10.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

In the short-term, significant amounts of road construction, particularly in sensitive areas, would likely be incompatible with the aquatic conservation objective.

7.11 - Little Slate Creek Subwatershed

7.11.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Little Slate Creek subwatershed are:

- **restore aquatic conditions and processes**
- **complete transportation system (roads & trails) planning, and implementation of system adjustments following the decision process**
- **enhance wildlife security**

The Little Slate subwatershed is composed mostly of a mid elevation highly weathered low relief hill landtype (VRU 6, ALTA 9, see Maps 31 and 9 respectively), also referred to as cold rolling uplands. This landtype is very limited in the lower Salmon (see Map 1b), with comparable size areas existing in the Warren area.

The fire regime is primarily lethal and low frequency, characterized by large fires on a 100-150 year interval (see Map 34). Large portions of this subwatershed were burned in the 1863 and 1889 fires (see Map 33). The vegetation is dominated by lodgepole pine, with considerable amount of spuce/ subalpine fir on the edges of the basin (see Map 40). The area is highly dissected by sensitive low gradient streams (see Map 11). The highly weathered granitics are part of the Idaho batholith, easily eroding into sand size particles.

The Little Slate subwatershed has been a center of the human activities in the watershed, including early mining and grazing activities (see Map 14), and more recent timber harvest and road construction (see Map 52). This area contains a high percentage of the existing road system, and has the highest road density of the subwatershed (see Table 5.48). This area is very popular for recreation activities, particularly driving for pleasure, dispersed camping, and visiting the historic Florence mining area at the southern end of the subwatershed. This concentration of human activity over the last 150 years has resulted in considerable effect on the subwatershed structure and processes, particularly from an aquatic perspective. The pattern of human disturbance in this subwatershed is the most inconsistent with the natural disturbance regimes in the watershed. This departure includes the sediment regimes, and vegetation patch size,

The high priority management needs for this subwatershed were selected based on the aquatic value and sensitivity of this area. Other factors that drove the selection were its important influence on downstream aquatic conditions, the value of this area to people (particularly for road based recreational activities) and the central role that the transportation system plays in the human use and aquatic restoration in this subwatershed.

In Little Slate, its high inherent aquatic habitat potential, high sensitivity, linkage to downstream conditions, and low integrity combine to rate this subwatershed the highest priority for aquatic restoration, along with lower Little Slate and main-stem Slate Creek itself (see Map 23). While most of the area is dominated by sympatric redband (residualized steelhead), the opportunity to increase bull trout populations in this area (particularly on the western side), and the interconnection (through the sediment regime) between this area and the important restoration areas in lower Little Slate and main-stem Slate Creek where the other at-risk aquatic species will be affected, make restoration in this subwatershed integral to the overall restoration of aquatic species in the watershed.

The transportation system is an important component in the aquatic restoration of this area, while also providing valuable public, wildlife security, and administrative access. The importance and the complexity of the balance between these perspectives make

transportation planning an important priority in this subwatershed. The size of the job, and the priority to have a great deal of public involvement in the consideration and decisions regarding the establishment of transportation management objectives, and any adjustments to the existing transportation system, contribute to the priority of this management need. Designing and implementing the transportation system in this subwatershed will require the integration of aquatic restoration, vegetative management and disturbance repatterning, public and administrative access priorities, and recreational desires and use. It is the central role the transportation system plays in the integration of these perspectives that makes transportation planning a high priority management need.

The repatterning of vegetation disturbance processes in Little Slate was considered as a priority management need, but determined to fit better under the compatible management needs discussed below. While the vegetation pattern in Little Slate has a moderate level of departure from historical levels, the need for immediate management action to address this need was felt to be less than the other management needs in the subwatershed and less than the other vegetation management needs elsewhere in the watershed, particularly the whitebark pine and ponderosa pine restoration needs. It was recognized that repatterning of vegetation disturbance processes needs to be highly integrated with the transportation planning efforts, and has the opportunity to contribute to the aquatic restoration objective through its implementation. It was assumed that these three management needs would likely be integrated into single planning efforts in this area. In the end, it was the difference between the opportunity to contribute to this integrated effort versus the urgency of the need to address the situation that placed repatterning of vegetation disturbance processes in the compatible management needs section.

Aquatic Restoration

The principal components of aquatic restoration in Little Slate are: reduction in the effects from the existing transportation system, restoration of historic mining and grazing impacts, and evaluation of the need for active restoration of stream channel morphology and processes.

The aquatic restoration of the Little Slate subwatershed is a very high priority, but it will not be achieved simply or quickly. The elements of restoration are numerous and widely spread. Successful aquatic restoration will require a sizable multi-faceted approach with sustained focus and effort over a decade or more.

Priority projects include:

- transportation system planning, including establishment and update of road and trail management objectives
- implementat transportation system adjustments and improvements
- repattern vegetative patch size and management disturbance frequency
- reduce the sediment effects from existing roads, trails, and historic mining sites, particularly those in streamside areas
- restore riparian vegetation and water table elevation in meadows
- active restoration of channel morphology and channel process where appropriate, to address historic mining and grazing effects
- evaluate stream and riparian conditions and integrity to determine active restoration needs

While there are discrete opportunities for the analysis and implementation of individual restoration projects in Little Slate, ultimate success will require a widespread integrated approach.

The key to successfully restroring aquatic conditions in Little Slate will be the integration of all of the programs, and the public in the effort. The interconnections between aquatic restoration and vegetation management, public and administrative access, and human uses of this

subwatershed will require comprehensive planning efforts with high levels of public involvement. There are options of the geographic extent that these planning efforts could encompass, from one big effort to many sequential efforts, but they will all need to be integrated, collaborative efforts to be effective. There is also the need for additional site specific inventory and evaluation to complete the analysis and final design of the projects in this subwatershed. While recognition of the complexity and size of the aquatic restoration job in Little Slate might seem overwhelming, the high importance of the restoration in this area, with respect to both Slate Creek and the Lower Salmon River, should consistently place this job nar the top of the priority list..

Transportation System Planning

Road management recommendations contained in this document can be used to help formulate project proposals. Coordinated planning integrated across watersheds is critical to providing consistent and connective systems and to balance road and trail uses with recreation and wildlife needs at the subbasin scale. . Public involvement, as part of project specific analysis is a critical component of transportation planning. This public involvement, along with greater detail on specific resource needs and timing will contribute to refining and finalizing the road management objectives.

Priority projects include:

- evaluate the 2002 road system. Primary components of this evaluation need to consider fisheries effects in Van Buren and Little Slate watersheds, long term access needs for commercial harvest in the northwest portions of Little Slate creek, and wildlife security needs in Van Buren creek
- stabilize cutslope and ditchline systems in stream contributing areas to reduce delivered surface sediments along the road system....portions of road #221 have been specifically identified
- evaluate travel management prescriptions throughout the Little Slate Creek subwatershed.....travel management prescriptions should consider motorized trail uses, wildlife security, and connectivity to the road system

Wildlife Security

The terrain in the headwaters of this subwatershed is such that OHV can travel places other than on designated trails and security for wildlife species at various times of the year is jeopardized. Many of the roads and trails in this subwatershed do not have compatible access prescriptions, especially during times when wildlife are most vulnerable to human disturbances. Summer and fall hunting seasons receive the majority of the OHV use and this use is increasing.

Projects designed to keep OHVs on designated routes include:

- gather use level information along OHV trails
- evaluate and change if necessary, access prescriptions on roads and trail open to OHVs during hunting season
- implement an area management restriction for the Little Slate subwatershed

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, transportation, recreation, and other issues. While this evaluation and any subsequent plans need to integrate these areas, the project itself should be able to proceed independently.

7.11.2 Relationship Between Priority Management Needs

There is a high level of integration between the priority management needs of aquatic restoration and transportation planning.

The planning and implementation of transportation system adjustments, both roads and trails, is an important component of aquatic restoration. Given the importance of the transportation system to public and administrative access and use, transportation system planning needs to be completed prior to making significant adjustments in the existing system. By addressing the balance between human value and ecological effect, the transportation system planning effort can identify the appropriate tools for: reducing the effects of the existing roads on the aquatic resource, investment and upgrade on high impact roads being kept on hte system, and decommissioning for roads where the decision has been made to remove them from the system.

Some components of aquatic restoration can proceed independently, including other near-stream sediment sources, riparian vegetation restoration, and channel reconstruction. But to a large extent, the completion of transportation planning will allow for the aquatic restoration objectives to be achieved.

Transportation planning should identify opportunities to remove some of the existing roads in the subwatershed, thus contributing to aquatic restoration. From a vegetative management and administrative perspective, there is an opportunity to use a greater percentage of temporary roads in this landscape than historically. When combined with the repatterning of vegetative management on a less frequent basis, the opportunity for reduction in the amount of road should be significant.

It is generally recognized that important public access routes will be maintained, but this system of roads will be considerably less than what currently exists. Given the amount of existing road, and the number of roads that are already restricted, there is an excellent opportunity for to restore aquatic conditions by reducing the amount of roads on the system, while at the same time, maintaining reasonable public access to the area on the roads that remain.

7.11.3 Compatible Management Needs, Projects and Rationale

There are two management needs in Little Slate that are compatible with the identified priority needs, the restoration of vegetation pattern, and providing for recreational uses in the subwatershed.

Restore Vegetation Disturbance Dynamics

The restoration of vegetation disturbance timing, size, kind, and resultant vegetation pattern in Little Slate can not only be compatible, but can contribute to the achievement of the priority management needs in this subwatershed.

Projects are recommended that will maintain larch overstories in two storied stands, regenerate lodgepole pine to provide early seral habitat, and reconfigure disturbance areas to result in larger patches of disturbance.

Disturbance frequency within the subwatershed would be reduced. These 1,000-5,000 acre areas would require little subsequent disturbance for 35-50 years. Dense stands of regenerating lodgepole pine would provide lynx habitat. Dense snag patches of lodgepole pine or mixed conifer would provide snag and down wood habitat for dependent species. Reduction of road density and road use would enhance wildlife security for both furbearing animals and ungulates. The vegetation treatments suggested here should be considered to the degree they can be used to support the adjustment of the transportation system. Conserving late seral forest in the areas suggested in Map 51, connecting Little Slate to Boulder Creek and Van Buren Creek, should also be considered when coordinating vegetation management with transportation system adjustment.

Compatible projects at low elevations on canyons include:

- thin and/ or burn in dense stands of mixed conifers on moderately warm and moderately dry habitat types to maintain the ponderosa pine and larch components and reduce fuel loads (406 acres)

Compatible projects in mid elevation environments historically dominated by infrequent lethal fire include:

- thin, or shelterwood and burn to maintain western larch, or regenerate lodgepole pine, in dense stands, leaving high densities (>20 per acre) of snags representing the array of occurring size classes. Residual overstories would be retained. (1337 acres)
- regenerate some of the old lodgepole pine (>140 years on moist habitat types and more than 110 years on dry habitat types) leaving high densities of snags (50-100 per acre) representing the array of occurring size classes. This is appropriate where old growth is not a priority, and where harvest would contribute to the ability to reduce road density in an area (6,035 acres)

Compatible projects at upper elevations in areas historically capable of supporting whitebark pine include:

- thin, slash, burn and plant whitebark pine (280 acres)

See Map 45 and Appendix L for locations of potentially suitable stands.

Provide for Recreation Uses
Compatible projects include:

- participate in transportation planning efforts to incorporate recreational uses and desires, while determining how adjustments in the recreational infrastructure (mainly trails), and use patterns, can contribute to the other priority management needs (i.e. aquatic restoration)
- cordinate the management objectives for roads and trails that intersect each other
- prioritize the investments in the trail facilities for improvements or upgrade to address aquatic resource effects and contribute to aquatic restoration

This subwatershed provides important wildlife values, including mixed conifer and lodgepole pine old growth, and lynx habitat. Wildlife management needs are compatible with the priority needs if wildland fire use does not immediately threaten to eliminate all the spruce-fir old growth. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of whitebark pine forest is retarded by the need to conserve aquatic condition in Little Slate Creek.

Compatible projects include:

- wildlife inventories that focus on mixed conifer, lodgepole pine, and spruce/ fir communities
- old growth inventories should be conducted in mixed conifer and lodgepole pine communities

Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

7.11.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

Converting the existing trail along Little Slate Creek to a motorized trail, as requested by some motorized trail users, is likely incompatible with the priority management need for aquatic restoration in this subwatershed. The priority management need for transportation planning should allow for the consideration and evaluation of alternatives to this proposal that will address the need expressed in this request.

The restoration of the scale of vegetation disturbance dynamics in Little Slate, most likely in response to emergency salvage, that does not consider and contribute to aquatic restoration or transportation planning, would likely be incompatible with these priority management needs, due to the loss of the opportunity for vegetation management to contribute to these priority management needs.

It is possible that the initiation of certain mining activities in the Little Slate subwatershed will occur independently of planned resource improvement disturbance activities such as road obliteration and may act individually or cumulatively to constrain planned actions where thresholds might be exceeded in the same watershed at the same time.

Motorized access into some areas for mining purposes is likely to be incompatible with some area and road access prescriptions imposed in mitigation for timber harvest impacts.

7.12 - Van Buren Creek Subwatershed

7.12.1 Priority Management Needs, Projects and Rationale

The high priority management needs in the Van Buren Creek subwatershed are:

- **conserve aquatic conditions and processes in most of the watershed**
- **restore aquatic conditions and processes in the lower subwatershed**
- **conserve wildlife security in the subwatershed**
- **restore whitebark pine communities at high elevations**

Van Buren Creek is a tributary to Little Slate, with the lower end of the subwatershed characterized by similar terrain, cold low relief rolling uplands. From there the subwatershed rises in elevation, comprised of predominately subalpine fir habitat types, with the landtypes being high elevation glaciated slopes and convex ridges (see Maps 9 & 35). It has had minimal human activity in recent times.

The subwatershed was burned extensively in the 1889 and 1910 fires (see Map 36). It currently supports the largest known bull trout population in the lower Salmon River below Rapid River (see Map 28), and provides important wildlife security and a corridor between the high elevations and Little Slate (see Map 51).

Early mining activities included Pete's Placer near the mouth of Van Buren, with corresponding activities in the lower reaches of the creek (see Map 14). Road construction and harvest activities in the 1970s on the western side of Little Slate included the lower end of this subwatershed (see Map 60). In addition to this area, other existing roads and trails are located on the ridges (see Map 70).

The priority management needs for this subwatershed were identified based on: the current condition of the subwatershed, the value of this area to fish and wildlife species, and the relative priority and opportunities for this subwatershed to contribute to vegetation objectives.

The high aquatic integrity, and presence of a strong bull trout population (unique within the subbasin), makes the Van Buren subwatershed the highest priority aquatic conservation area in the watershed (Map 80). The combination of high inherent habitat potential, current high quality habitat, and a relatively strong population of an at-risk aquatic species create a unique situation of high importance. Conservation of this situation is a priority management need.

Given the above situation, restoration of the aquatic processes and conditions in the lower end of the Van Buren subwatershed are a high priority management need. Securing the Van Buren subwatershed as a stronghold for bull trout, while ensuring the connection between this area and the rest of the watershed, will contribute to the aquatic conservation objectives in Van Buren and the restoration objectives of Little Slate and the Slate Creek watershed. This management need is particularly important to support and increase the number of fluvial bull trout in the upper Slate Creek watershed, which are an important key to both conservation of the existing Van Buren bull trout population, and the rebuilding of bull trout populations elsewhere in the drainage.

This subwatershed provides important security for big game and furbearers with low road densities and very little disturbance throughout most of the year. It is also adjacent to the Deadhorse subwatershed which has the same characteristics of low road densities and a high level of security.

The Van Buren subwatershed contains important areas for restoration of whitebark pine (see Map 42). Additionally, there is

current access to these areas. The upper edge of the Van Buren subwatershed is perhaps the best opportunity in the watershed for whitebark pine restoration. Given the priority of this vegetation restoration in the watershed, the restoration of whitebark pine in the Van Buren subwatershed is a priority management need. Elsewhere in the subwatershed, the need for other types of vegetation restoration is relatively low.

Given the lack of current facilities, and the other resource values discussed above, the priority for additional recreational and administrative access into the Van Buren subwatershed is low. The area should continue to provide primitive recreational experiences, and be managed for a primitive ROS class with a VQO of partial to full retention.

Aquatic Conservation

The priority management need of aquatic conservation applies to most of the Van Buren subwatershed. This aquatic conservation should be focused primarily on the processes that affect and create aquatic habitat, and secondarily on the condition of that habitat. It should not be assumed that the conditions in Van Buren will remain static, but that the integrity of the processes will continue to create high quality habitat condition. The current high integrity should also result in high resilience to large natural disturbances when they do occur. In general, passive management should be sufficient to conserve the aquatic processes and conditions in Van Buren, along with full consideration of management activities proposed for other purposes.

Aquatic Restoration

The aquatic restoration of the lower portion of Van Buren Creek is a high priority management need both in terms of securing the Van Buren subwatershed as a stronghold for bull trout, and to maintain and improve the connection between this area and the rest of the watershed. This lower portion of the subwatershed has been affected by a variety of activities, including historic mining, grazing, timber harvest and road construction, and trails. To achieve the aquatic objectives discussed, the residual effects of these activities on the aquatic processes and conditions in lower Van Buren need to be addressed.

Priority projects include:

- reduce the effects of the existing road system
- reduce the effects of the existing trail system, particularly near the mouth of Van Buren
- evaluate the effects on lower Van Buren of historic mining, grazing, and streamside harvest activities and determine the need or opportunity for active restoration of these stream reaches

Reduction in the effects of the existing road system in Van Buren will require an analysis of the entire system of roads on the Western side of Little Slate, known as the 2002 system (see Map 66). The portions of this road system in Van Buren are proposed for decommissioning or further evaluation for potential decommissioning. A decision to implement these actions will require that the 2002 system, at least that portion in and above Van Buren Creek, will need to be considered, along with the vegetative and other public and administrative access considerations. It is recommended that an integrated planning effort focused on the 2002 road system, including the roads in Van Buren, be a top priority in the watershed. This planning effort needs to be comprehensive, and will likely be a complex consideration of issues and the balance between various management objectives. It is thought that through the implementation of a ephemeral type road system on this western side of Little Slate, preceded by vegetation treatments that will eliminate the need for treatment for the next 50 years or so, most of the road system in this area, including the roads in Van Buren, can be eliminated. If the transportation planning effort in Little Slate is not conducted for the entire rolling upland area, this area on the western side of Little Slate, including the Van Buren area, is recommended as the highest priority area to conduct and implement this approach.

The other priority projects in the Van Buren subwatershed, including the trail and in-stream needs, could be assessed and implemented independently or integrated into this planning effort for roads and vegetation. There would be increased efficiency if these projects were considered and assessed together. However, these important projects should not be put on hold if the integrated planning effort in this area does not begin in the next couple of years. In this case, the analysis and planning for these restoration efforts should proceed independently as soon as possible.

Conservation of Wildlife Security
Van Buren provides an area of security with low road densities and little disturbance. Along with the need to maintain wildlife security, there is the need to conserve the vegetative structure in the lower portions of the subwatershed to provide cover for species using this area. There also needs to be a connection of vegetation in lower Little Slate and Boulder Creeks, as well. This will provide a connection between adjoining drainages and the Gospel-Hump Wilderness.

Priority projects include:

- gather use level information along OHV trails
- implement a seasonal restriction on these trails
- conduct wildlife inventories in ponderosa pine communities
- conduct old growth inventories in ponderosa pine and mixed conifer communities

The fall hunting season is a time when this subwatershed receives the majority of human disturbance, along with summer OHV use along ridgetop trails. It is not known how much use these OHV trails receive, but the use has been increasing.

It should not be necessary to complete a large planning effort to proceed with the road and trail related projects in this area. A focused environmental assessment process should be adequate to consider the changes in access prescriptions. The evaluation and subsequent road and trail access changes should be conducted in such a way to address aquatic, wildlife, recreation, and other issues. While this evaluation and any subsequent plans need to integrate these areas, the project itself should be able to proceed independently.

Whitebark Pine Restoration
The restoration of whitebark pine communities is a very important management need in the subwatershed at elevations above about 6400 feet. Whitebark pine was historically a component of mixed subalpine stands. Blister rust, fire exclusion, and mountain pine beetle activity threaten to eliminate this species in the Slate Creek watershed. There is a very high priority need to restore these areas.

Projects are recommended that provide forest openings for natural whitebark regeneration, protect existing live whitebark pine, or provide openings for planting whitebark pine. Priority projects in high elevation environments include:

- thin, burn, or regeneration harvest in mixed subalpine stands of moderate or high tree density, and planting of whitebark pine (1,355 acres)
- thin, slashing, burn and plant whitebark pine in open subalpine forest stands (405 acres)

7.12.2 Relationship Between Priority Management Needs

The conservation of aquatic conditions and wildlife security in the Van Buren subwatershed are mutually compatible. The restoration of whitebark pine needs to be conducted in a manner that ensures it is compatible with these conservation objectives as well. The opportunity for this is considered good. The aquatic need for active restoration of the lower end of Van Buren should be compatible with the wildlife needs associated with old-growth communities. There is the possibility of conflict between these objectives which will need to be considered and avoided if possible.

7.12.3 Compatible Management Needs, Projects and Rationale

Maintain trail based recreation, while improving the trail facilities to reduce the effect on other resources.

Most of the trails in this subwatershed are located on the ridge. Maintenance of these trails, and their use, including motorized use, should be compatible with the priority management needs. To ensure that these facilities and their use is compatible, the following should be completed;

- trail facilities should be evaluated and upgraded to reduce the effect of the trails and their use on the aquatic resources. The focus of this effort should be in the lower end of the drainage
- OHV use of trails should be evaluated to determine the potential effect on wildlife resources. Based on this evaluation, seasonal restrictions might be appropriate for the trails in this area
- the trail to Van Buren Lake should be evaluated, and possibly reconstructed or relocated, to reduce the effects of this trail on aquatic resources while improving its condition for users

This subwatershed provides important wildlife values, including spruce/ fir, mixed conifer, and whitebark pine old growth, and wildlife security. Wildlife management needs are compatible with the priority vegetation restoration needs. The aquatic restoration activities will not conflict with these wildlife needs, except inasmuch as rate of restoration of open ponderosa pine forest or whitebark pine forest is retarded by the need to conserve the aquatic condition in Van Buren Creek.

Compatible wildlife projects include:

- wildlife inventories that focus on mixed conifer and spruce/ fir communities
- old growth inventories should be conducted in mixed conifer, spruce/ fir, and whitebark pine communities

Survey techniques should be designed to determine species' presence/ absence initially during the early stages of future management activities and is based on available funding and personnel. Species recommended to survey include flammulated owl and whiteheaded woodpecker, (both Forest Service sensitive and ponderosa pine dependent species, moderate priority).

Surveys for goshawks and pileated woodpeckers should also be conducted, Both are old growth indicator species. The goshawk is categorized as sensitive. Both are of a lower priority than flammulated owls and whiteheaded woodpeckers

Habitat is limited within this subwatershed for these old growth dependent species. Old growth inventories should be designed to determine: 1) if stands meet old growth characteristics (see Map 51 for a visual display of potential old growth areas), and 2) if the stand needs of treatment. These projects can occur independently of other priority and compatible projects and need no additional planning work to proceed.

7.12.4 Projects or Activities that are Potentially Incompatible with the Priority Management Needs

Improving recreational access into the core of the subwatershed would likely be incompatible with the aquatic and wildlife conservation objectives.

Significant road construction, possibly in response to salvage opportunities following a fire, would likely be incompatible with the priority management needs in Van Buren.