3.0 Affected Environment and Environmental Consequences

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3.1 Introduction

Chapter 3 is organized by resource area. Resource areas include water quality, soils, vegetation, wildlife, threatened and endangered species, aquatic biology, recreation, visual resources, land use, socioeconomics, environmental justice, cultural resources, sacred sites, Indian Trust Assets (ITAs), and transportation and access. The depth of analysis corresponds to the scope and magnitude of the potential environmental impact. Climate, air quality, geology, water resources and hydrology, and topography are not discussed because no impacts were identified. Two topics are covered for each of the resource areas discussed: the affected environment and environmental consequences.

The **affected environment** is addressed first and describes the current conditions for each resource within the Lake Cascade RMP study area. This is not a comprehensive discussion of every resource within the RMP study area, but rather focuses on those aspects of the environment that were identified as issues during scoping or would be affected by the alternatives.

The effects of the alternatives are described next in the **environmental consequences** section for each of the resource areas. Impacts are discussed relative to actions within four broad **assessment categories** as described in Chapter 2:

- Natural resource, habitat, and cultural resource protection and enhancement
- Water quality, surface water management, and erosion control
- Improved or restricted access
- Improved facilities and miscellaneous

The types of impacts expected to result from implementation of any actions within the four assessment categories are discussed so that the nature of the impacts are known. Then, under the alternatives subheadings, the specific impacts of each of the alternatives are discussed in terms of the actions that would occur and specific information about the impact. Only impacts that cannot be fully avoided through the application of BMPs, listed in Chapter 5, are described.

In the environmental consequences section, the depth of analysis of the alternatives corresponds to the scope and magnitude of the potential environmental impact. This chapter compares the effects of the four alternatives described in Chapter 2:

- Alternative A—No Action Alternative: Continuation of Existing Management Practices
- Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

- Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis
- Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

The Preferred Alternative, and Alternatives B and C, are the **action alternatives**. Alternative A, the **No Action Alternative**, describes the future if the updated RMP were not implemented. The action alternatives are compared to the No Action Alternative. A description of the affected environment and environmental consequences is presented for each of the alternatives. Mitigation measures and residual impacts remaining after implementation of mitigation measures are described only for the Preferred Alternative. Cumulative impacts are presented for each of the alternatives and are described in Section 3.1.1. A summary of impacts for each alternative is provided at the end of Chapter 2 in Table 2.5.

Several recreation improvements are listed for each of the alternatives. Such improvements include campground expansion, trails, boat launching facilities, marinas, interpretive signage, and parking facilities. Building these facilities depends on developing cost-share agreements between Reclamation and cost-share partners (for example, IDPR). Therefore, the level of development described for each alternative would be allowed to occur, but may not actually occur. For the purpose of the alternatives impact analysis, it is assumed that all of the facilities would be built. At a minimum, the existing facilities would be upgraded to current Federal accessibility standards. Actions within the alternatives that are not related to recreation, such as noxious weed control or erosion control for existing Reclamation recreation facilities, do not require cost-share sponsors and would be implemented by Reclamation as described.

3.1.1 Cumulative Impacts

Reasonably foreseeable cumulative impacts were identified for the proposed WestRock resort and implementation of the Cascade Reservoir Watershed Management Plan. Both of these factors are described in this section. The cumulative impacts discussion in each of the resource areas refers to this discussion.

WestRock Resort

The WestRock Recreational Resort proposed for construction on the west side of Lake Cascade would be a four-season resort encompassing about 3,500 acres. The resort could potentially house more than 5,000 occupants and would require a substantial water supply and wastewater treatment plant. The development of WestRock has many aspects that may potentially impact the natural resources and facilities of the RMP study area. Future specific effects in Reclamation lands and facilities would be handled under separate NEPA analyses.

Cascade Reservoir Watershed Management Plan

The *Draft Implementation Plan for the Cascade Reservoir Watershed Management Plan Phase II* (Idaho Department of Environmental Quality [IDEQ] 2000) was released April 5, 2000.

The Implementation Plan outlines "the point and non-point source reduction measures that are needed to effect required water-quality improvements and achieve Total Maximum Daily Load (TMDL) goals within Cascade Reservoir" (IDEQ 2000).

The primary goal of the TMDL is a 37 percent reduction of phosphorus entering Lake Cascade. Based on water quality models, achievement of this reduction would result in compliance with the water quality standards for phosphorus and dissolved oxygen. Thus, the designated uses of fishing, swimming, boating, and agricultural water supply would be supported.

3.2 Water Quality and Contaminants

3.2.1 Affected Environment

Water quality at Lake Cascade has been a subject of public concern since the 1970s, when noxious algal blooms, aquatic weeds, and fish kills began to occur quite frequently (IDEQ 1996). Because of poor water quality, none of the beneficial uses of the reservoir were fully supported during 1993 and 1994 (IDEQ 1996). As a result, the TMDL process was initiated to comply with Section 303(d) of the Clean Water Act of 1987 (40 CFR 130.7). The reservoir was listed in 1996 as water quality limited because of violations of water quality standards for nutrients, dissolved oxygen, temperature, and pH.

Violating the water quality standards had several direct, observable consequences to the reservoir. Nutrient enrichment, including phosphorous, caused excessive algal growth. The potential for winter fish kills increased because of oxygen depletion under ice cover (Bender 1997). Another concern has been bacterial contamination of water for swimming (Bender 1997). A substantial low point in water quality occurred in September 1993, when 23 cattle died from ingesting toxic algae in the reservoir. A public health advisory was issued warning the public to avoid contact with the reservoir (Shepard 1995).

Agencies and the community have actively worked toward improving water quality to attain full support of all beneficial uses, and have a goal to meet all water quality standards. The 1991 RMP contained provisions to improve water quality within Reclamation's jurisdiction. Specifically, the RMP included provisions for improving sanitation at waste management sites, prohibiting the use of chemicals on Reclamation lands, and pledging to follow the recommendations from the Valley County Soil Conservation District's Lake Cascade Watershed Project.

In 1992, a citizen's group formed an interagency task force to address water quality issues throughout the watershed. This group became the Cascade Reservoir Coordinating Council, the state-designated Watershed Advisory Group for the TMDL process, in 1995. This advisory group, which represents nine sectors of the local community, has worked closely with IDEQ and a Technical Advisory Committee composed of agency, industrial, and municipal scientists and engineers to develop draft TMDL standards. The *Lake Cascade Phase I Watershed Management Plan* was published in January 1996 (IDEQ). In August 1997, results of a Lake Cascade Water Quality Modeling Study were published by Reclamation "to develop predictive

water quality models to assist in identifying and evaluating operational and structural measures for improving water quality" (Bender 1997). In April 1998, the TMDL Phase II Agricultural Source Plan was released (IDEQ 1998b), followed by the Phase II Watershed Management Plan in December 1998 (IDEQ 1998a).

The TMDL Implementation Plan, which was released in early 2000, identifies specific measures needed to achieve a targeted 37 percent reduction of phosphorus loads. The primary sources of pollutants are from point and nonpoint source pollution. The following two point sources were identified in the Phase II Watershed Management Plan (IDEQ 1998a):

- McCall wastewater treatment plant
- IDFG fish hatchery in McCall

The major sources of nonpoint pollution include the following (IDEQ 1998a):

- Management practices by forestry, agricultural, and urban and suburban areas
- Internal recycling of nutrients within the reservoir

A Phase III Watershed Management Plan would be prepared to evaluate progress toward attainment of water quality standards and designated beneficial uses. This report is expected in December 2003.

To improve water quality, Reclamation has constructed wetlands on their lands to treat water flowing into Lake Cascade from several tributaries. The following wetland sites have been constructed:

- Duck Creek North
- Duck Creek Osprey Point
- Old State Highway
- Arling Hot Spring
- Hembry Creek sites 1 and 2
- Willow Creek
- Mallard Bay

These wetlands are intended to accomplish the following:

1. Trap and remove sediment

2. Uptake and release phosphorous in a cycle

3. Provide stream stabilization

4. Provide wildlife food, cover, nesting, and resting habitat values

Reclamation, in conjunction with IDEQ, is conducting a monitoring program to assess wetland performance relative to water quality parameters. Results of the monitoring indicate that the wetlands have, for the most part, successfully reduced the net pollutants entering the reservoir from these tributaries (Reclamation 1999b).

Reclamation scientists measured suspended sediment and three types of phosphorous at the inlet (tributary) and outlet (wetland result) at each site. In 1997, the Ivan Phelps and Hembry Creek sites had net reductions for all pollutants. The other sites had mixed results (Reclamation 1999b). As the wetland communities became more established in 1998, the pollutant reduction improved. All sites had a net reduction in pollutants, except for the Hembry Creek site (Reclamation 1999b). These wetlands are expected to be part of the long-term plan for reducing pollutant loads to the reservoir.

3.2.2 Environmental Consequences

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

Emphasizing protection and enhancement of natural resources and habitat under the Preferred Alternative would benefit water quality by reducing potential sources of point and non-point pollution. Healthy riparian habitats help to reduce erosion along stream banks as well as reduce and or filter sediment-laden runoff from lands near water. Development of wetlands, which would receive an increased emphasis under any of the action alternatives, would also enhance water quality in much the same way, as well as provide a substantial source of nutrient uptake.

The conversion of open space to developed land under any of the alternatives could contribute to the deterioration of water quality. This could occur through activities such as construction, residential lawn maintenance, or grazing in riparian areas. These activities can be sources of excessive sediment and nutrients, and in the case of residential lawn maintenance, pesticides and herbicides. Setting aside or maintaining lands designated as C/OS or WMA would help maintain or improve water quality under any of the alternatives.

Water Quality, Surface Water Management, and Erosion Control

Under all alternatives, managing resources for the benefit of water quality would be necessary because of the recent water quality problems and increased recreational use and land development in and around the reservoir. Surface water management and erosion control would help maintain or

improve water quality under all the alternatives and would be more pronounced under the action alternatives.

Restricted motorized boating enforcement of 100-foot no-wake zones, and increased education of 200-foot voluntary no-wake zones under all of the action alternatives, would help to reduce shoreline erosion. In shallow areas, restricting motorized boats would help prevent resuspension of bottom sediments and detachment, suspension, and displacement of nuisance aquatic vegetation under all alternatives. Detached aquatic vegetation can drift to other areas of the reservoir and reestablish or accumulate in large quantities. Large quantities of detached aquatic vegetation can concentrate in coves and decay—a process that consumes valuable oxygen required by fish and other aquatic organisms, thus deteriorating water quality.

Regulating landscape development under the action alternatives would also minimize negative impacts to water quality. As mentioned above, landscape development and maintenance could result in short term erosion during construction and a long term source of nutrients from fertilizers and contaminants from herbicides and pesticides. Erosion control is especially important, since phosphorus adheres to sediment, and is transported during spring runoff and storm events. Phosphorous has been identified as a major source of pollution to the reservoir. Water quality would benefit from erosion control throughout the watershed.

Improved or Restricted Access

Restricting access benefits water quality by restricting human activities in areas that may be prone to erosion. Access restrictions to riparian or wetland habitats may occur under any of the action alternatives, and also benefit water quality by preserving these areas.

In areas where access is already permitted, improving existing access under any alternative would likely be a benefit to water quality. For example, if unrestricted roads are a source of erosion, improved roads and designated access points could reduce erosion.

Vehicular access to the drawdown zone is currently not allowed; however, unauthorized access within this zone is commonplace. Alternatives A and C, more so than the Preferred Alternative or Alternative B, could increase the potential for new, unauthorized access points to be created, resulting in further shoreline vegetation and or structural damage and subsequent erosion. Frequent access on foot can also result in shoreline damage under any of the alternatives, especially if users continue to create new access points as use increases.

Improved Facilities and Miscellaneous

Improving facilities to accommodate increased demand or promote increased use, under any of the alternatives, would, in general, negatively affect water quality. Larger parking and camping areas, which may occur under any of the alternatives, would mean increased hard surface impervious areas resulting in increased runoff of poorer quality because of pollution from vehicles. Where landscaped areas are created or expanded, the potential for poorer runoff quality resulting from

fertilizers and maintenance chemicals would result under any alternative. Although upgraded waste facilities are planned to some extent under all the alternatives, where direct connections to a sanitary sewer system would not be feasible, the potential for pollution resulting from faulty or unmaintained septic systems would be created.

The development of marinas under all alternatives would tend to concentrate boats in small areas, where unburned or spilled fuel would negatively affect water quality. Shoreline erosion would also be a potential problem because of wave erosion from increased boat traffic.

BMPs would have to be employed under any of the action alternatives to avoid or reduce these negative effects. An example would be implementing stormwater BMPs to control runoff quantity and provide treatment. Designing parking lots and marinas to promote efficient vehicle and boat traffic would be important to prevent congestion under all action alternatives. Also, connecting waste facilities directly to sanitary sewer systems under any alternative would be more beneficial than septic tanks because of the history of failed septic tanks along the reservoir contributing to water quality problems.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

The No Action Alternative would result in a continuation of the current trends and conditions for water quality and contaminants. Shoreline erosion control measures are currently allowed by permit. Conversion of C/OS to RR designation would not occur. Landscape development and uses in RR areas would continue through an established permit system. Vehicular access to the shoreline and drawdown areas would be managed to protect vegetation and limit erosion. The no-wake zones designated in the 1991 RMP would remain. These actions would benefit water quality.

Habitat would continue to be protected and enhanced by the management of WMAs as according to the intent and priorities stated in the 1991 RMP. Negotiations would continue with agricultural easement (AE) owners that lead to the termination of grazing on Reclamation lands, or at a minimum keep livestock from the shoreline. Although there is uncertainty as to whether or not it would happen, acquisition of agriculture easements to eliminate grazing through purchase, lease, or exchange would be pursued. These actions, if successful, would also benefit water quality. Potential changes to AEs would be the same for all alternatives.

The No Action Alternative would allow the development of numerous recreation facilities as listed and described in Table 2.3-1. Of the four alternatives, the No Action Alternative and Alternative C have the greatest acreage of proposed recreation sites. These sites and their associated facilities would be expected to result in the potential for direct and indirect adverse water quality impacts described in the above *Assessment Categories*.

Cumulative Impacts

The WestRock Project would have a number of potential effects on water quality and contaminants. These potential impacts are described by various Idaho State agencies in the *Analysis of the WestRock Project* (ISLB 1999). The general consensus is that water quality must be protected; however, many adverse potential impacts to water quality would be associated with the project, as well as some opportunities.

Some of the adverse impacts include the following:

- Substantial amount of land disturbance and erosion potential
- Sewage disposal, increased snow melt, and increased stormwater runoff have the potential to increase nutrient loading to the reservoir
- The proposed golf course has the potential to contribute pesticides and fertilizers into Poison Creek and the reservoir
- Increased boating activity could adversely affect shoreline habitat and erosion
- Vegetation clearing could adversely affect tributary water temperature

Some potential water quality benefits identified in the agency analysis include WestRock's proposed construction of a sewage collection/treatment system, and their stated intent to allow neighboring landowners the opportunity to connect to it. This could benefit water quality by allowing the decommissioning of outdated or unmaintained waste disposal systems along the reservoir that may currently be contributing to poor water quality. Opportunities may also exist to improve the condition of tributary streams in the RMP study area on land owned by WestRock. These would likely include erosion reduction and enhanced riparian corridors.

Overall, the short term impacts of the project on water quality would likely be unfavorable because of the extensive construction and associated land disturbance. The long term impacts would depend on the effectiveness of BMPs implemented, their maintenance and monitoring, and the project's and local stakeholder's commitment to protect and enhance the water quality of the reservoir.

The WestRock Project would be subject to the TMDL program for the reservoir. This program requires a 30 percent reduction of total phosphorus from nonpoint sources throughout the entire watershed. So, although the reduction is not necessarily required on a site-specific basis, the overall reduction of phosphorus loading to the reservoir must be achieved. Any new sources of phosphorus load to the reservoir would require a load reduction elsewhere in the watershed. As growth and development occur around the reservoir, this goal would likely become more challenging for all land owners within the watershed.

Another objective of the TMDL is to maintain the 300,000 acre-feet minimum reservoir pool to protect water quality. If the goals of the TMDL program for Lake Cascade are achieved, the cumulative effect would substantially improve water quality.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

As listed in Table 2.3-1, the Preferred Alternative would include stricter control measures than the No Action Alternative for erosion control, vehicular access to shoreline and drawdown areas, encroachment on Reclamation lands, and no-wake zones. It would also provide greater protection and enhancement of habitat. Also, BMPs to address water quality impacts from the golf course would be included. All of these measures would positively affect water quality and help offset the impacts of additional recreational development.

Although several recreational facilities would be developed or enlarged under the Preferred Alternative, there would be more C/OS and WMA areas, and less recreation acreage than the No Action Alternative. Some of the more important facilities, in terms of water quality impacts, would be the two proposed marinas—one at West Mountain Campground and Poison Creek, and the other at Van Wyck Park. The marina at Van Wyck Park would ultimately accommodate up to 150 more boat slips than proposed under the No Action Alternative. At Van Wyck Park, the wastewater facilities would be connected to City sewer, thus minimizing the impact of this potential indirect source of water pollution. With these things considered, the Preferred Alternative should have less adverse impact on water quality than the No Action Alternative.

Mitigation

Wherever feasible, waste facilities at recreation sites would be connected to sewer systems to prevent water quality contamination from faulty or unmaintained septic tanks or other waste facilities. Controlling stormwater runoff quantity and quality during construction would prevent sediment-laden runoff from entering the reservoir. Stormwater controls would be implemented at recreation sites to treat runoff from parking lots and campgrounds and any new impervious areas. Streambank vegetation near the recreation areas would be maintained or improved to prevent shoreline erosion from wave action, runoff, or trampling by people or animals. Efforts will be made to make information available to the public to educate on this issue. Creating permanent or semi-permanent access points for pedestrian traffic, combined with signage to prevent trampling in sensitive shoreline areas, would also help mitigate impacts of increased recreational use.

Residual Impacts

Minor water quality impacts from shoreline erosion would continue, especially following high winds. Some minor sediment runoff from construction of new or expanded facilities would also occur. Increased boat traffic on the reservoir would result in more fuel being discharged to the water, especially in the vicinity of the marinas. Spill control devices and

containment at fueling locations can mitigate the impact of on-land fuel spills; however, the amount of unburned fuel from watercraft on the reservoir would increase.

Cumulative Impacts

The cumulative impacts from the RMP actions would be less than those described for the No Action Alternative because of the increased emphasis on natural resources. Effects of WestRock and the TMDL program would be the same.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

This alternative would have an increased emphasis on natural resources, with more limited recreation development. Thus, Alternative B would be expected to adversely impact reservoir water quality slightly less than the Preferred Alternative. This results from having less recreation development and slightly more areas designated as WMAs.

Cumulative Impacts

The cumulative impacts from the RMP actions for this alternative would be less than those associated with the No Action and Preferred Alternatives. Effects of WestRock and the TMDL program would be the same.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Alternative C would result in a similar amount of acreage for recreation sites, C/OS, and WMAs when compared to the No Action Alternative. As listed in Table 2.3-1, Alternative C includes some actions more favorable to water quality than the No Action Alternative. These include erosion control, vehicular access, no-wake zones, and private landscape development and encroachment on Reclamation land. Therefore, Alternative C would be expected to have slightly less adverse impact on water quality than the No Action Alternative.

Cumulative Impacts

The cumulative impacts from the RMP actions would be slightly less than those associated with the No Action Alternative, but greater than the Preferred Alternative. Effects of WestRock and the TMDL program would be the same.

3.3 Soils

3.3.1 Affected Environment

The RMP study area lies entirely within the Idaho Batholith, a body of congealed molten rock (igneous) covering almost 20,000 square miles in northern and central Idaho. Basalt, a crystalline rock of volcanic origin, overlies eroded border rocks of the Idaho Batholith along the entire

western boundary of Valley County. Rocks from these formations consist of different types of granite and mica that are typically highly weathered and decomposed.

The parent materials for reservoir shoreline area soils are generally granitic rock with local areas of sandy alluvium and areas of glacial outwash, composed of uncemented beds of sand and gravel. The outwash areas are generally found on the reservoir's east shoreline, north of Sugarloaf Island, while the alluvium overlying the granitic rock is south of Sugarloaf. The reservoir's west shoreline also consists of alluvium and glacial outwash.

These geologic materials typically produce coarse-textured soils. The Natural Resources Conservation Service's (NRCS 1981) general soils map shows five map units abutting the reservoir's shoreline. The map units indicate the following diverse soil conditions:

- Slopes vary from flat to steep
- Soils depths vary from moderate to very deep
- Drainage is poor to excessive

Uncontrolled recreation, vehicular use, and grazing in some riparian corridors have eliminated vegetation and caused considerable erosion. Excessive instream erosion has also been caused by reservoir backwater effects during high water in the early summer. The Valley Soil Conservation District, through the *Cascade Reservoir Watershed Management Plan*, has identified riparian-lined streams draining into the reservoir (IDEQ 1998b).

Reclamation (1998) estimated in 1995 that 10,329 acre-feet of sediment had been deposited in the reservoir since November 1947. This volume represents a 1.47 percent loss of the total storage capacity and an average yearly loss of 216 acre-feet of storage.

Shoreline Erosion

Shoreline erosion continues to be a serious problem raising concerns about potential building structure and dock loss, public safety, and visual impacts. Reclamation continues to work with private property owners to address shoreline erosion concerns on their property. In general, shoreline erosion is confined to the reservoir's east shore, where wind-generated wave action has created 5- to 50-foot vertical cliffs in some areas. Large waves (4 to 6 feet) are common during severe storms on the reservoir because of the combination of the prevailing southwest and northwest wind patterns, the shallow nature of the reservoir, and its north/south orientation. Areas where shoreline encroachment is of particular concern include the Cabarton Recreation Area, Van Wyck Park to the dam, and residential areas starting below Arrowhead Point and proceeding north into the Boulder Creek and Lake Fork arms of the reservoir. Unusual storm events have also resulted in erosion at Huckleberry Park, the only point where shoreline erosion has become an issue on the west side of the reservoir (Reclamation 1991b).

The occurrence of shoreline erosion is most frequent during the early summer when reservoir water levels are at a maximum and summer storms and waves have the greatest erosive impact on the vertical slopes. Other factors that partially contribute to shoreline erosion include large wakes from boats in confined reservoir areas during high water, and uncontrolled off-road vehicle use (Reclamation 1991b).

The extent of vertical and horizontal erosion is highly variable along the east shore. In general, erosion is most serious in the alluvium and glacial outwash soils that extend along the upper two-thirds of the reservoir's eastern shoreline, where hard rock underlies these soils. In contrast, the southern third of this shoreline is generally composed of granitic soils underlain by rock that would eventually stop the erosion process.

Residents have indicated that certain shoreline areas have been cut upland from 10 to 60 feet during the past 10 to 20 years. A review of a shoreline survey conducted by Reclamation in 1974 also revealed that the height of the erosion point or scarp in several areas has also increased noticeably during the same time period (Reclamation 1991b). Areas where scarp height is greatest include the following:

- Cabarton area
- The area just south of the dam
- Several areas just north of Crown Point
- Sugarloaf Peninsula
- Immediately south of Arrowhead Point
- Many areas in the Boulder Creek and Lake Fork arms of the reservoir

Although many shoreline erosion control measures have been attempted by adjacent private property owners, a large percentage of past efforts have not been successful. Reclamation continues to receive requests for permits to construct retaining walls and other erosion control structures, as well as permits to maintain existing structures. The quality of erosion control efforts by private property owners is improving as they seek advice from Reclamation and the COE.

Reclamation has also installed erosion control structures at several locations around the reservoir. Logs have been buried along the shoreline at Huckleberry Park to reduce erosion on the gently sloping shoreline. Rock gabions have been installed along the shoreline at the Boulder Creek day use area. Steel pilings have been installed at the concrete slab at Crown Point Campground as a temporary solution for erosion undermining the slab.

3.3.2 Environmental Consequences

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

Development of habitat improvement plans, under all alternatives except Alternative A, within C/OS areas and near recreation areas would beneficially impact soil resources through increased erosion protection. In general, developing and implementing a plan to improve habitat would provide an intact plant canopy cover, which reduces precipitation-induced dislodgment of soil particles from the soil surface. This is particularly true for riparian areas where existing vegetation has been removed from stream banks through recreation or grazing. However, in high human use areas (recreation areas), existing vegetation may be less effective for erosion control than non-native vegetation, such as turf grasses, because of the susceptibility of native vegetation to damage (canopy removal) through disturbance. Developed areas are discussed below under the *Improved Facilities* subsection. Vegetation would reduce but not eliminate shoreline erosion in areas prone to major wind-driven wave erosion.

Restoration of native plant communities under all alternatives except Alternative A, would have the same effect of reducing erosion as discussed above for habitat management plans. Degraded plant communities typically have a low density canopy cover, with many bare areas. Restoration of the native plant community would improve overall plant density, and thereby increase canopy cover. Higher canopy cover equates to increased protection of the soil resource. Soil productivity would also be expected to increase over time with vegetation restoration, as more organic matter is added to the soil, with a subsequent increase in soil nutrient levels.

Reclamation would monitor new and existing trails in WMAs under the Preferred Alternative. Improved monitoring would allow areas showing increased erosion to be addressed quickly through trail closure or maintenance. Unimproved, unvegetated trails provide easily erodible areas that contribute to soil loss in the WMAs.

Emphasis would be placed on additional wetland development in the Gold Fork WMA under the Preferred Alternative and in the Crown Point Vicinity under all action alternatives. Although not a direct erosion control activity, construction of wetlands slows runoff and results in sediment deposition. Sediment deposition would prevent the loss of sediment (soil) from areas around the reservoir where wetlands are developed. This action slowly builds new soil horizons as the wetlands fill in with sediment, providing new, nutrient-rich substrates for terrestrial communities. As the wetland fills in completely with sediment, the new soil (sediment) is colonized, by first riparian, and then upland vegetation through succession.

Designation of an area as a WMA from a potential developed land use as proposed for Mallard Bay under Alternative B and at the former state airstrip under the Preferred Alternative and Alternative B would increase erosion protection as native vegetation becomes established. Native vegetation provides multiple plant canopies and reduces soil dislodgment by rain drops.

Conversion of an area from recreation or other developed use to C/OS would reduce soil loss as human-use decreases and native vegetation becomes established. This action is proposed at Mallard Bay under the Proposed Alternative and Alternative C; at Crown Point Extension under the Preferred Alternative and Alternative B; at big Sage and Carbarton under Alternative B; and on Sugarloaf Peninsula under all action alternatives. Conversion from C/OS to Recreation to allow trail

development between existing west side recreation areas under the Preferred Alternative and Alternative C would increase erosion compared to No Action. Minor erosion would occur during construction and then because of increased human use.

Water Quality, Surface Water Management, and Erosion Control

Permitting shoreline erosion control structures would be a major contributor to reducing shoreline loss. Shoreline erosion is a continuing problem on Lake Cascade that results in soil loss, with subsequent deposition in the reservoir. The permitting process, while not difficult, is time-consuming and confusing to some residents. Increasing efforts to assist residents to obtain erosion control structure permits from the COE in all action alternatives would facilitate obtaining permits, thus likely increasing the number of structures installed. More structures equates to more erosion control and less soil loss. A wide variety of structures are currently in-use on Lake Cascade. The effectiveness of these structures varies from very good to failing. Reclamation in conjunction with COE would develop structure design guidelines under all action alternatives. Following these guidelines would help to ensure that each new structure provides the best erosion control possible. Shoreline soil loss would decline over the long-term as new and replacement structures using the accepted designs are installed.

Evaluation, recommendations, and implementation of permitted private landscaping on Reclamation land on a regular basis under all action alternatives would improve erosion control around the reservoir. Existing permitted landscaping structures, mostly retaining walls, reduce erosion and are a benefit to Reclamation lands. However, many of these structures are in disrepair and need maintenance. Periodic evaluation would allow Reclamation to recommend repairs as a condition of the permit, enhancing erosion control efforts.

Boat wakes and storms are the two major actions initiating shoreline erosion. Storms cannot be avoided, but wake control is possible in susceptible areas. Establishment, signage, and successful enforcement of no-wake zones under all action alternatives would reduce shoreline soil loss from boat-generated waves. Increasing the no-wake distance to 200-feet from the shoreline adjacent to WMAs, as proposed under the Preferred Alternative and Alternative C, compared to only 100-feet under Alternative B, would provide additional erosion protection.

Grazing can contribute to soil loss through removal of vegetation cover, establishment of cattle trails, soil compaction, and streambank trampling. If successful, increasing efforts to acquire AEs to eliminate grazing on Reclamation's land would increase plant cover, decrease establishment and use of unvegetated livestock trails, improve soil tilth as compaction lessens, and reduce streambank trampling. All of these actions would reduce soil loss and subsequent loss of vegetation productivity. Removal of cattle from shoreline grazing area would reduce trampling of the shoreline, which would lessen soil loss through erosion. Shoreline trampling tends to establish erosional pathways from the uplands to the water, contributing to sedimentation into the reservoir.

Improved or Restricted Access

Vehicular access to the shoreline and drawdown area is not allowed, but enforcement is currently lax. Driving onto the shoreline and drawdown areas contributes to increased erosion through destruction of vegetative cover and creation of ruts. Ruts provide an erosion pathway from the uplands to the water, and destruction of vegetation removes the protective cover and initiates erosion and soil loss. Prohibiting vehicular access to all areas of the lake under the Preferred Alternative and Alternative B would reduce erosion by eliminating vehicles from these areas. Limited vehicular access would continue to be allowed at Mallard Bay under the Preferred Alternative, which would only slightly improve existing erosion from conditions under Alternative A at this location. Under Alternative C, vehicles would still be allowed in designated areas, which would allow erosion to continue in those areas, but public education and increased enforcement would tend to lower erosion potential.

Development of new trails and trailheads under all alternatives would concentrate non-motorized off-road use onto trails designed to prevent erosion and subsequent soil loss. Use of newly developed trails may also result in abandonment (or at least less use) of numerous ad hoc trails. These networks of ad hoc trails have resulted in gully formation, accelerated erosion, bank failure, and runoff pathways directly into the reservoirs or streams. All these outcomes of undeveloped trails lead to loss of soil; a situation that may improve through new trail creation and public awareness/education. Creating new trails where access is currently prohibited through land use, land ownership, or AEs would open new areas to erosion. New trails would provide shoreline access under all action alternatives where none currently exists, which may result in additional impacts to sensitive shoreline areas. Increased human use would result in loss of vegetation and bank trampling.

Improved Facilities and Miscellaneous

Private landscaping for erosion control on Reclamation property under all action alternatives could reduce soil loss if properly designed and installed. Encroachment onto Reclamation land may increase soil loss if encroachments are left barren or are allowed to become weed-infested. If encroachment areas are vegetated and protective of soil surfaces, no impact on soil loss would be expected.

Monitoring the lease and consideration of lease renewal for the YMCA and 4-H camps and the Donnelly City Park would have no additional impacts on soil resources. However, if population increases result in increased use, erosion could increase depending on management practices employed but monitoring and recommendations would prevent additional impacts. Development of new boat-in day use and camp areas would result in increased shoreline erosion, as the shoreline would become un-vegetated and compacted in high-use areas. This activity would occur at Driftwood Point under the Preferred Alternative and Alternatives A and C; Crown Point Extension under the Preferred Alternative and Alternative B; and under Alternative C on Sugarloaf Island.

A variety of facilities would be constructed or expanded. These include expansion of group camping areas (Alternatives A, C, and Preferred Alternative), development of day use areas (all alternatives), construction of a lodge, marina development with breakwaters (all alternatives), construction of kiosks and interpretive areas (all alternatives), building stormwater systems (Preferred Alternative and Alternative B), extending boat ramps (all alternatives), constructing fish cleaning stations (all alternatives), and conversion of camping areas to day use areas (Preferred Alternative and Alternative C).

Organizing parking areas and increasing parking lot size under all alternatives would discourage using vegetated areas adjacent to existing parking lots as ad hoc parking areas. This would improve groundcover and reduce soil compaction, which would lessen soil loss and surface runoff. Construction of new parking lots in previously undisturbed areas would increase runoff and result in additional soil loss.

Expansion of existing facilities (such as campgrounds and day use areas) under all alternatives would encourage additional visitor days. Additional visitor use would result in impacts to natural areas adjacent to the expanded facilities. As native vegetation is impacted from increased visitor use, soil loss would accelerate. Construction of new facilities (such as campgrounds, day use areas, marinas, kiosks, and interpretive centers) would cover undisturbed soils with impervious surfaces, increasing runoff and soil loss. Increased visitor use, as discussed above for expanded facilities, would impact surrounding areas, with potential for soil loss. For those facilities expanded or constructed near the shoreline, shoreline erosion would increase as banks are trampled and compacted and vegetation is lost. Where facilities are constructed in previously impacted areas, soil loss could decrease as barren areas are vegetated with landscaping. Turf grasses would be more protective of soil than native vegetation in high-use areas. Expanded or constructed facilities with new stormwater collection systems, would not experience increased erosion over the long-term. In fact, stormwater facilities may result in less runoff, as storm flows are captured. Shoreline erosion would decrease near marinas where breakwaters are constructed. The breakwater would reduce both boat- and weather-generated wave impacts. Expansion of boat ramps would result in increased use on the edges of the ramp. These impacted areas would be compacted and devoid of vegetation. This would increase soil loss and surface runoff directly into the reservoir.

Continued use of the quarry would result in no additional impacts to soil resources (all alternatives). The quarry is already through the soil cap and into the underlying rock. Continued use of erosion control practices at the quarry would reduce erosion from bare surfaces.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

Riparian areas would continue to decline from overuse with subsequent loss of streambank soil. Continued efforts to eliminate livestock grazing near streams and the reservoir would result in a gradual improvement in soil loss from erosion. Continued efforts to acquire AEs would generally

improve soil loss conditions as grazing is eliminated and vegetation and soil recovers. The expected success of these actions is probably low.

Piecemeal erosion control measures by residents would continue to provide intermittent erosion protection, depending on the efficiency of the erosion control structure design and placement. Existing no-wake zones would continue to protect certain shorelines from boat-generated wave action, but others in need of protection would continue to decline. Non-motorized areas in the upper arms of the reservoir would continue to protect shorelines from erosion.

Vehicle restrictions in shoreline and drawdown areas would protect these areas from erosion. However, current lax enforcement results in numerous violations, which would continue. Erosion impacts from ad hoc off-road vehicle use around Boulder Creek Arm and the north side of Gold Fork Arm would continue, and likely increase as use increases. Many ad hoc trails at Vista Point, Hot Springs Creek WMA, and North Fork Arm would continue to be used, with continued loss of soil from compaction and runoff.

The West Side Trail system and trails at Mallard Bay and Crown Point Extension would be developed, with potential increased erosion from trail use. Five new day use areas, one new boat-in campground, seven new campgrounds, one expanded campground, two new marinas, one formalized parking area, one new parking area, one interpretive area, three new boat ramps with docks, a large facility at Van Wyck (including a boat ramp, fish cleaning stations, parking areas, marina with breakwater, visitor center, expanded day use area, RV campground, and new paved trails), and one fish cleaning station would be allowed. Runoff from these areas would increase, as increased visitor use would impact native vegetation and compact soil around the facilities. Overland storm flows may increase in areas of impervious surfaces and were vegetation cannot establish due to increased visitor use. Erosion would decease at facilities where turf is established, because it is very protective of soil resources.

The 4-H Camp, YMCA Camp, and Donnelly City Park use would be monitored and leases considered for renewal. As these facilities see increased use as population increases, the potential for additional erosion is present.

Cumulative Impacts

Development of WestRock would increase shoreline erosion because more boats would use the reservoir. It would also stimulate overall increased use of recreational facilities, further impacting recreation areas and increasing soil loss from those areas.

Reduction of non-point source phosphorous associated with soil particles through the Cascade Reservoir Watershed Management Plan TMDL process would slow the loss of soil within the entire watershed. Construction and expansion of facilities along the reservoir, with subsequent increase in soil loss potential, would reduce the overall soil loss prevention anticipated with implementation of the TMDL.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

The following discussion focuses on differences from Alternative A.

Implementation of habitat improvement plans would result in enhanced soil protection. Habitat improvement plans for the WMAs to protect water quality would also protect soil as additional native vegetation is established and controls runoff. Monitoring trails and an increase in the no-wake distance, to the extent that it is honored, and a slight increase in WMA acreage (39 acres) would reduce erosion. Designation of an additional 158 acres of C/OS would increase shoreline protection.

The AE and grazing elimination actions, as discussed for Alternative A would be pursued. Reclamation assistance to landowners applying for erosion control structure permits and accepted design standards would more effectively arrest shoreline erosion, where structures are constructed by land owners. Expansion of no-wake zones, public awareness campaigns to promote no-wake zones, and enhanced enforcement would increase shoreline protection.

Private landscaping for erosion control on Reclamation land would continue, however, permits would now be issued following approval of designs that promote erosion control. Monitoring would reduce erosion, by ensuring landscaping is effective. Encroachment onto Reclamation land would continue to be prohibited and existing, non-grandfathered encroachment removed in C/OS, WMA, and recreation areas. Shoreline erosion protection would be implemented at Snow Bank and Cabarton.

Other recreation site improvements and expansions noted in Table 2.3-1 would have effects described for the assessment categories. Less land (203 acres) would be disturbed than under Alternative A. Therefore, fewer impacts on soils would be expected.

Mitigation

No mitigation is proposed for impacts identified for the Preferred Alternative. Best management practices would be implemented during construction to reduce soil loss from construction sites. Establishment of vegetation at new and expanded facilities would assist in preventing soil loss around recreation sites. Vigorous enforcement would be needed to enforce no-wake zones and keep motor vehicles from shoreline and drawdown areas.

Residual Impacts

Residual impacts include temporary increased soil loss from new and expanded recreation areas. Shoreline erosion and soil loss would also continue in unprotected areas.

Cumulative Impacts

Cumulative impacts of the Preferred Alternative would be the same as those of No Action with the following exceptions. The Preferred Alternative and the Cascade Reservoir

Watershed Management Plan would interact in a positive manner. Implementation of erosion control activities within the Preferred Alternative would supplement the erosion control activities in the TMDL process, thereby possibly reducing soil erosion into the reservoir.

Alternative B—Limited Recreation Development /Increase Natural Resource Emphasis

Shoreline erosion and erosion from recreation sites would be reduced at all facilities not expanded or constructed with this alternative. Less area (278 fewer acres than under Alternative A) would be developed for recreation, thereby reducing disturbance and erosion potential. However, demand would continue to increase, so vegetation trampling and erosion at existing recreation sites would increase. Erosion would increase over Alternative A in the WMAs with no monitoring of trails and reduction of no-wake distance, but an increase in WMA acreage (155 acres) would likely offset the increase. Erosion would increase in the Gold Fork (non-motorized trail) and North Fork Arms (no formalization of ad hoc trails). No monitoring of private landscaping effectiveness would continue and a slight reduction in erosion control structures built by Reclamation would increase erosion potential. Designation of an additional 123 acres of C/OS would improve protection against shoreline erosion relative to Alternative A.

Cumulative Impacts

The cumulative impacts would be the same as described for the Preferred Alternative, except less recreational development with this alternative would reduce the cumulative impacts, because less people overall would be using the reservoir. Cumulative impacts attributable to WestRock and the TMDL program would be the same as described for No Action.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Overall, more land would be disturbed for constructing recreation sites than any other alternative except Alternative A, resulting in greater erosion. Erosion would increase over Alternative A in the WMAs with no monitoring of trails and reduction of no-wake distance. No monitoring of private landscaping effectiveness would continue. Designation of an additional 9 acres of C/OS land to other land uses would slightly increase protection against shoreline erosion relative to Alternative A. Allowing motor vehicle use of the railroad grade north of Crown Point could open a new area to residential development, with subsequent increases in soil erosion.

Cumulative Impacts

The cumulative impacts would be the same as described for the Preferred Alternative, except that moderate recreational development would increase the cumulative impact on soils as more people would be using the reservoir. Cumulative impacts attributable to WestRock and the TMDL program would be the same as described for No Action.

3.4 Vegetation

3.4.1 Affected Environment

Cover Types

The following four major vegetation cover types are found near Lake Cascade: (1) wetlands and riparian communities; (2) grassland/pasture; (3) upland shrub; and (4) conifer forest. Numerous plant communities are found within each of these major cover types, as discussed below.

Wetlands and Riparian Cover Types

Wetlands and riparian communities perform many important ecological functions, including providing water quality, protection, flood control, shoreline stabilization, contribution to groundwater recharge and streamflows, primary production in the food chain, and wildlife and fish habitat (Sather and Smith 1984). In addition, they also provide social benefits as natural areas for aesthetic, recreational, and educational opportunities.

A variety of Federal and state regulations require consideration of wetlands during construction and other activities. The most substantial of these regulations are the National Environmental Policy Act, the Clean Water Act (especially Section 404, which requires a permit for wetland disposal of fill and dredge material), the Idaho Lake Protection Act, and the Stream Channel Protection Act. All Federal agencies are subject to these regulations.

Wetland and riparian communities, as defined for the purposes of this EA, include shallow and deep marshes; wet meadows; and forest, shrub and herbaceous riparian communities. These areas are mapped according to the primary vegetation types without regard to whether or not the area meets the COE criteria for jurisdictional wetlands under Section 404. The EA follows this approach because the major vegetation type of wetlands and riparian communities typically define the area's habitat value for fish and wildlife, which is a major consideration of this current RMP. General boundaries of wetland and riparian communities were established during a vegetation mapping program conducted for the USFS by Utah State University. Boundaries were delineated for this study using aerial photos. Jurisdictional wetland boundaries would be delineated with special studies on a case-by-case basis as needed for projects anticipated by this plan.

Many of the wetland and riparian communities around Lake Cascade are directly supported by the water stored in the reservoir. Several wetlands have been developed specifically to improve water quality and develop wildlife habitat. Wetlands extend along much of the west shoreline except near the Tamarack Falls Bridge. This shore has a cover of rushes, sedges, various grasses (both wetland and upland species), and occasional clumps of other emergent wetland species such as cattails (*Typha latifolia*). The largest concentrations of wetlands along the western shore occur between Poison and Gibson creeks, and in the Willow Creek area at the southern tip of the reservoir. Shallow marshes are quite extensive in the latter two locations and along the undulating shoreline of the upper arms of the reservoir, especially the North Fork. Former river meanders of the North

Fork, Lake Fork, and Gold Fork arms create a complex mix of wetland and riparian communities ranging from emergent wetlands and aquatic beds in oxbow sloughs to scrub-shrub bogs supported by springs or perched water tables to a variety of forest types (FWS 1990). These wetlands are interspersed by numerous wet meadows and upland forest and meadow areas. The bottomlands in the North Fork are covered primarily with sedges, rushes, grasses, and scattered groups of cattails, with willow (*Salix* spp.) swales among the meandering river channels and willows, alders (*Alnus* spp.), and aspens (*Populus tremuloides*) along the high water areas and tributaries. Wetlands are less extensive in the Lake Fork and Gold Fork arms, although the ends of these arms are heavily covered with willows. Wetlands occur along the more riverine sections beyond the terminus of the reservoir's normal maximum pool elevation in the Boulder Creek and Willow Creek arms.

Another large wetland is located in the Hot Spring Creeks/Sugarloaf area along the eastern shoreline between the former state airstrip and Sugarloaf Peninsula. In this area, a shallow marsh extends outward from the shore and is adjacent to wet meadows and grasslands. Other wetland areas are located in the two inlets south of Sugarloaf Peninsula and on the south side of Sugarloaf Island.

Wildlife Management Areas (WMAs) were officially designated at the locations of many of the larger wetland areas as a result of implementation of the 1991 RMP. Actions that have been undertaken on many of the WMAs include fencing to exclude livestock from all areas not having a grazing right through an AE, emergent wetland development at several sites noted below, and habitat improvement measures including planting and placement of nest boxes and platforms. With the exception of the AE areas, vegetation conditions on the WMAs have improved substantially since their establishment. Continued livestock grazing on the AE lands diminishes wildlife habitat values and other functions and values of wetland and riparian communities. Grazing and trampling in AE portions of wetlands destroys protective plant cover for nesting waterfowl and interferes with nesting. Along stream corridors, livestock grazing has eroded the shoreline and has generally added to water pollution.

Grasslands/Pasture and Denuded Areas

Grasses occur along the North Fork Arm in drier upland areas above high banks and on gentle slopes leading up from the bottomlands of the reservoir. Most grasses in the area are non-native. Ponderosa (*Pinus ponderosa*) and lodgepole pine (*P. contorta*) often occur in association with the shrubs and grasses in this area. Grasses also predominate in the upland areas of the Lake Fork and most of the Gold Fork Arms and in the Crown Point area in association with open stands of lodgepole and ponderosa pine. Vegetation on Sugarloaf Island is predominantly made up of grasses, with a few conifers on the north end of the island. Vegetation on Sugarloaf Peninsula consists of a codominant grass/shrub community. Agricultural lands to the east and north of Lake Cascade are dominated by pasture grasses (Kentucky bluegrass [*Poa pratensis*] and timothy [*Phleum pratense*]), hay, and small grains. Most grass species are not native.

Overgrazing by livestock in some AE areas has reduced and weakened vegetation. The problem is most severe in drier areas with low soil fertility where plant regeneration is difficult. Several areas

around the reservoir that have a light cover of grasses, sagebrush (*Artemisia* spp.), and conifers have also been substantially denuded of vegetation, mostly by off-road vehicle use, especially in the area north of Cabarton to the dam. The lack of vegetation in other areas results from the infertility of the soils. These include the exposed sandy beaches and sand bars, as well as sparsely vegetated grass and shrub areas scattered around the reservoir. Reservoir drawdown zones are also generally devoid of vegetation. Areas above full pool need to be managed to prevent further deterioration and allow for rehabilitation.

An annual grass/forb community consisting of a variety of weedy annual grasses and forbs colonizes portions of the reservoir drawdown zone during late summer. These annual species tend to occur in drawdown areas with shallow slopes and are especially common on the east side of the reservoir from Sugarloaf to the north. They occupy the largest areas during relatively dry water years.

Upland Shrub Cover Types

Shrub communities on the east side of the reservoir and drier portions of the west side are characterized by big sagebrush (*Artemisia tridentata*) and low sagebrush (*A. arbuscula*) and antelope bitterbrush (*Purshia tridentata*). A variety of other shrubs such as ninebark (*Physocarpus malvaceus*), serviceberry (*Amelanchier alvifolia*), hawthorn (*Crataegus douglasii*), bitter cherry (*Prunus emarginata*), mountain ash (*Sorbus* spp.), and syringa (*Philadelphus lewisii*) are scattered throughout this community, especially as elevation and precipitation increase. Common grasses and sedges are listed on Table 3.4-1. The table is not a complete list of plants; it is only a representation of the more common forbs are also listed in Table 3.4-1.

Table 3.4-1. Upland Shrub Cover Type Species

Common Name	Scientific Name
Grasses and sedges	
bluebunch and western wheatgrass	*Agropyron spicatum*
Idaho fescue	*Festuca idahoensis*
needle-and-thread grass	*Stipa comata*
Sandberg's bluegrass	*Poa secunda*
elk sedge	*Carex geyeri*
Ross sedge	*C. rossii*
Forbs	
arrowleaf balsamroot	*Balsamorhiza sagittata*
Pacific trillium	*Trillim ovatum*
penstemon	*Penstamon deustus*

Table 3.4-1. Upland Shrub Cover Type Species

Common Name	Scientific Name
lupine	*Lupinus* spp.
fireweed	*Epilobium angustifolium*
Indian paintbrush	*Castilleja* spp.
tapertip hawksbeard	*Crepis acuminata*

Sources: Reclamation 1991a, Alexander 1998, and Steele and Geier-Hayes 1995

Conifer Forest Cover Type

The lowest elevation forest stands around the reservoir are dominated by ponderosa and lodgepole pine with a grass/forb understory. There are few places on the west side of the reservoir where the forest cover extends all the way to the shoreline. Forested areas on the slopes of West Mountain are dominated by the species listed in Table 3.4-2. The predominant Douglas-fir community has a dense forest canopy but some places support a dense understory of shrubs, which are also listed on Table 3.4-2. Forbs and grasses common to the other forest communities, described below, are also found here but are not as abundant.

Table 3.4-2. Conifer Forest Cover Type Species

Common Name	Scientific Name
West Slope Forested Areas	
Douglas-fir	*Pseudotsuga menziesii*
grand fir	*Abies grandis*
Englemann spruce	*Picea engelmannii*
Western larch	*Larix occidentalis*
ponderosa pine	*Pinus ponderosa*
lodgepole pine	*Pinus contorta*
quaking aspen	*Populus tremuloides*
Dominant Douglas-Fir Community	
ninebark	*Physocarpus malvaceus*
Rocky Mountain maple	*Acer glabrum*
Western serviceberry	*Amelanchier alvifolia*
common snowberry	*Symphoricarpos albus*
mountain-ash	*Sorbus* spp.

substrates are present on Reclamation lands, and the other habitat conditions may be suitable in some of the WMAs. No tall swamp onions are known to occur on Reclamation lands.

The giant helleborine *(Epipactis gigantea)* typically grows in moist meadows with scattered willows. It is associated with calcareous habitats throughout its range. Within the Rocky Mountains it is usually associated with warm springs. Wetlands in the Hot Springs Creek area may provide suitable habitat for this species. No giant helleborines are known to occur on Reclamation lands.

3.4.2 Environmental Consequences

In terms of the types of land disturbing activities that would occur through implementation of this RMP, impacts on soils and vegetation are closely related. Land clearing for development results in loss of vegetation and soils. Similarly, erosion along the reservoir shoreline or along trails also causes soil loss and elimination of vegetation. Therefore, the nature of many of the impacts discussed here are very similar to those discussed for soils. Likewise, specific actions included on one or more of the alternatives would often both cause soil loss and eliminate vegetation. Therefore, the structure of this section is similar to Section 3.3.2, *Environmental Consequences,* in the Soils section.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

Development and implementation of habitat improvement plans under all alternatives except Alternative A within C/OS areas and near recreation areas would benefit natural plant communities through enhancement of species diversity and aerial extent of plant communities. This is particularly true for riparian areas where native vegetation has been removed from stream banks and shorelines through recreation or grazing. However, existing vegetation near high human-use areas, such as recreation areas, would experience adverse impacts through trampling or removal for other uses such as firewood.

Improved monitoring of new and existing trails in WMAs under the Preferred Alternative would allow areas showing increased degradation of existing plant communities to be addressed quickly through trail closure. Overuse can reduce the health of the plant community and degrade habitat values.

Additional wetlands to be developed in the Gold Fork WMA under the Preferred Alternative and in the Crown Point extension under all alternatives, and other sites deemed appropriate, would perform many useful ecological functions that contribute to improvement of water quality and wildlife and fishery habitat and enhance the esthetics of the reservoir environment.

Designation of an area as a WMA from a developed land use as proposed for Mallard Bay under Alternative B and at the former state airstrip under the Preferred Alternative and Alternative B would improve plant communities through increased access and use restrictions. Conversion of an

area from recreation or other land use to C/OS would reduce soil loss as human-use decreases and vegetation becomes established. This action is proposed at Mallard Bay under the Proposed Alternative and Alternative C; at Crown Point Extension under the Preferred Alternative and Alternative B; at big Sage and Carbarton under Alternative B; and on Sugarloaf Peninsula under all action alternatives. Conversion of land from C/OS to Recreation to permit a west side trail under the Preferred Alternative and Alternative C would increase soil erosion and vegetation loss.

Water Quality, Surface Water Management, and Erosion Control

Increasing efforts to assist residents to obtain erosion control structure permits from the COE under all action alternatives would facilitate obtaining permits, thus likely increasing the number of structures installed. Permitting shoreline erosion control structures would allow plant species to colonize or be planted in eroded areas. This would slightly increase the extent of plant communities in the study area. These actions would also curtail erosion before it has a chance to degrade existing upland vegetation. Controlling boat wakes and establishment, signage, and successful enforcement of no-wake zones under all action alternatives would reduce shoreline vegetation loss from boat-generated waves. Increasing the no-wake distance to 200-feet from the shoreline adjacent to WMAs, as proposed under the Preferred Alternative and Alternative C, compared to only 100-feet under Alternative B, would provide additional plant community protection. The degree to which a wider no-wake zone can be enforced or would be followed voluntarily is unknown.

Private permitted landscaping on Reclamation land would be evaluated on a regular basis under all action alternatives. This would improve erosion control around the reservoir, protecting native and other existing plant communities. Periodic evaluation would allow Reclamation to require repairs as a condition of the permit, enhancing protection of plant communities.

Grazing can contribute to vegetation degradation directly through physically removing vegetation cover and indirectly through soil compaction, which inhibits plant regeneration. Relatively large portions of several WMAs and some C/OS lands are encumbered by permanent AEs, with associated unrestricted livestock grazing rights. This results in substantial removal of vegetation from affected areas. Acquisition of AEs to eliminate grazing on Reclamation's land would increase plant community health by decreasing establishment and use of unvegetated livestock trails, reducing streambank trampling, and reduction in biomass loss through grazing. Removal of cattle from shoreline grazing area would reduce trampling of the shoreline, which would allow vegetation to establish. The actual benefits that would be realized will depend on how successful Reclamation is in acquiring or changing the permanent AEs.

Improved or Restricted Access

Vehicular access to the shoreline and drawdown area is not currently allowed, but enforcement is lax. Driving onto the shoreline and drawdown areas severely impacts existing plants and reduces establishment success of new plants. Prohibiting vehicular access to all areas of the lake under the Preferred Alternative and Alternative B would reduce plant community loss by eliminating vehicles from these areas. Vehicular access to the shoreline would be formalized, but would continue to be

allowed at Mallard Bay under the Preferred Alternative and Alternative C, which would slightly improve existing plant communities from conditions under Alternative A. Under Alternative C, vehicles would still be allowed in designated areas, which would allow vegetation loss to continue in those areas, but public education and increased enforcement would tend to lower the potential loss. Placing physical barriers preventing vehicle access in damaged areas would allow degraded vegetation to recover, either naturally or through active revegetation.

Trail and trailhead development under all alternatives would concentrate non-motorized off-road use onto trails designed to minimize vegetation impacts. Some existing ad hoc trails might be used less. These networks of ad hoc trails have resulted in loss of plants and creation of areas suitable for noxious weed establishment. Creation of new trails could spread noxious weeds. Creating new trails where access is currently prohibited through land use, land ownership, or AEs would open new areas to disturbance and native and existing plant loss. New trails would provide shoreline access under all alternatives where none currently exists, which may result in additional impacts to sensitive shoreline vegetation. Increased human use would result in loss of vegetation and bank trampling.

Improved Facilities and Miscellaneous

Permitted encroachment of private landscaping onto Reclamation land may reduce the extent of existing plant communities as they are replaced by managed landscapes or structures or are left barren and allowed to become weed infested.

Development of new boat-in day use and camp areas would result in loss of shoreline and adjacent plant communities, as these areas become unvegetated and compacted in high-use areas. This activity would occur at Driftwood Point under the Preferred Alternative and Alternatives A and C; Crown Point Extension under the Preferred Alternative and Alternative B; and under Alternative C on Sugarloaf Island.

Recreation facilities that would be constructed or expanded as shown in Table 2.3-1 would reduce the extent of plant communities and lead to additional impacts on adjoining property through physical removal during construction and disturbance from additional visitors.

Organizing parking areas and increasing parking lot size under all alternatives may discourage using vegetated areas adjacent to existing parking lots as ad hoc parking areas, which would improve groundcover. The net effect, comparing direct vegetation loss with less ad hoc disturbance, is unknown. For those facilities expanded or constructed near the shoreline, shoreline impacts would increase as banks are trampled and compacted and vegetation is lost.

Inclusion of recreation facilities at the quarry under all alternatives would remove previously undisturbed vegetation. Expansion of boat ramps under all alternatives would result in increased compaction and loss of vegetation cover along the adjacent shorelines. Improved and expanded boating capacity would increase boating use and associated wave-related shoreline erosion and vegetation loss.

Alternatives

This section discusses the impacts on vegetation from implementation of the three action alternatives and the No Action Alternative. Specific actions to be implemented are discussed below and the reader is directed to the assessment category for a discussion of the nature of the impacts.

Alternative A—No Action: Continuation of Existing Management Practices

The Sugarloaf Peninsula habitat improvement effort would beneficially effect existing vegetation. Continued efforts to eliminate livestock grazing near streams and around the reservoir and to acquire AEs would result in a gradual improvement in native plant communities. The expected success of these actions (efforts to reduce grazing) is unknown.

Loss of existing plant communities from ad hoc off-road vehicle use around Boulder Creek Arm and the north side of Gold Fork Arm would continue, and likely increase as levels of use increase. Ad hoc trails at Vista Point, Hot Springs Creek WMA, and North Fork Arm would continue to be used, with continued loss of vegetation. Vehicle restrictions in shoreline and drawdown areas would protect plant communities in these areas. However, current lax enforcement results in numerous violations, which may continue.

The 4-H Camp, YMCA Camp, and Donnelly City Park use would be monitored and lease renewal considered. As these facilities see increased use as population increases, the potential for additional plant community and shoreline area disturbance would increase.

Construction and expansion of recreational facilities as shown in Table 2.3-1 would result in direct and indirect vegetation loss as discussed in the assessment category section. An additional 313 acres of vegetation would be directly impacted through construction of new recreation facilities. The West Side Trail system and trails at Mallard Bay and Crown Point Extension would be developed, with vegetation loss and erosion from trail construction and use. However, replacement and abandonment of some ad hoc trails would encourage plant recovery to the extent that existing trails receive less use.

Cumulative Impacts

Development of WestRock would result in substantial loss of plant communities in the resort area and would increase shoreline erosion and loss of shoreline plant communities, due to more boats using the reservoir. It would also stimulate a substantial increase in use of recreational facilities, further impacting vegetation both along and near the reservoir.

The No Action Alternative and the Cascade Reservoir Watershed Management Plan would interact to enhance native and other existing vegetation in the Lake Cascade area. Reduction of non-point source phosphorous input into the reservoir from both within and outside the RMP study area would require better management of agriculture and grazing practices. Except for AEs, grazing has already been eliminated around all but an 8-acre

Table 3.4-2. Conifer Forest Cover Type Species

Common Name	Scientific Name
Shinyleaf spirea	*Spiraea betulifolia*

Sources: Reclamation 1991a, Alexander 1998, and Steele and Geier-Hayes 1995

A ponderosa pine/mixed shrub community is also located on the west side of the reservoir. This community has a fairly open forest canopy dominated by ponderosa pine, Douglas-fir, grand fir (*Abies grandis*), and some lodgepole pine. The shrub understory is comprised of common chokecherry (*Prunus virginiana*), snowberry, syringa, mountain ash, shinyleaf spirea, bitter cherry, and buckbrush (*Canothus cureatus*). Stands of quaking aspen, Rocky Mountain maple, alder, and red-osier dogwood (*Cornus stolonifera*) are common in the moister gullies. In the more open areas, forbs such as arrowleaf balsamroot, bracken fern (*Pteridium aquilinum*), and a variety of grasses also occur.

Along the arms of the reservoir, lodgepole pine and ponderosa pine are the dominant forest species where forest cover occurs. Sugarloaf Island supports pines on the northwest edge. Reclamation lands in the Crown Point area are moderately forested with young and mature ponderosa pines and other conifers.

An open pine forest is common on the slopes and hills on the east side of the reservoir. This forest is characterized by a widely dispersed, open tree canopy of ponderosa pine on the drier sites and of lodgepole pine on the wetter sites. Many of the shrubs, forbs, and grasses described above also dominate this community; however, shade-tolerant or moisture-requiring shrubs such as wild rose (*Rosa woodsii*), ninebark, chokecherry, snowberry, elderberry (*Sambucus cerulea*), and syringa are more numerous.

Overall, the amount of forest on Reclamation lands is limited. However, some of the forested areas contain diseased and dead trees that pose higher than normal fire hazards. Generally, these are lodgepole pines and ponderosa pines infested by western gall rust. The greatest concentration of dead and dying trees is in the Boulder Creek Arm. During the last 5 years, Reclamation has contracted for commercial thinning and slash burning in infested areas. Dead and dying trees have not been made available to the public as firewood because of the lack of staffing necessary to monitor woodcutting areas and the required burning of slash piles left by woodcutters.

Rare and Sensitive Species

Two species considered rare by the Idaho Conservation Data Center occur about 2 miles west of the reservoir on land managed by the Payette National Forest. The tall swamp onion *(Allium madidum)* generally occurs between 3,000 and 6,500 feet elevation in vernally wet meadows, flats, draws, and gentle slopes along creeks and drainages. Populations occur in meadows and coniferous forest openings that are wet during the spring and dry to the surface by late summer or early fall. The species appears to be restricted to basalt-derived substrates. Some basalt-derived

lease along portions of the reservoir shoreline. This is allowing plant communities to reestablish along the shoreline. This complements restoration of habitat in the WMA and C/OS areas. Better irrigation water management to reduce return flows outside the RMP study area would eventually result in more water being left in streams flowing into the reservoir. This would enhance native riparian and wetland plant communities around the reservoir.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

The following discussion focuses on differences from Alternative A.

Designation of an additional 158 acres of C/OS and 39 acres of WMA would increase protection of shoreline and adjacent upland plant communities. Implementation of habitat improvement plans would result in plant community improvements through establishment of new plants and protection of existing plants. Monitoring trails and an increased public awareness/education effort aimed at adherence to the 200-foot voluntary no-wake zone along WMAs, to the extent that it is honored, would enhance and protect vegetation.

Reclamation assistance to landowners applying for erosion control structure permits and accepted design standards would continue and more effectively arrest shoreline erosion, where structures are constructed by land owners, and reduce the loss of plant communities to erosion. Expansion of no-wake zones, public awareness campaigns to promote no-wake zones, and enhanced enforcement would increase shoreline plant community protection.

Permits would be issued following approval of designs for private landscaping that promotes erosion control on Reclamation land and are in the public interest. Monitoring the effectiveness of those efforts would be continued through the permitting process. Reclamation-installed shoreline erosion protection would be implemented at Snow Bank and Cabarton, avoiding further loss of vegetation.

Recreation site improvements and expansions noted in Table 2.3-1 would have the effects described for the assessment categories. Less land (203 acres less) would be disturbed than under Alternative A. Therefore, fewer direct vegetation impacts resulting from new or expanded recreation sites would be expected.

Increased emphasis on development, protection, and enhancement of wetlands would improve hydrophytic communities around the reservoir.

Mitigation

No mitigation is proposed for impacts identified for the Preferred Alternative. Best management practices would be implemented during construction to protect vegetation not directly impacted and revegetate temporarily impacted areas with native plants. Any wetland or riparian vegetation losses would be mitigated on at least a one-to-one basis, replacing both affected area and loss of habitat value. Vigorous enforcement would be

needed to enforce no-wake zones and keep motor vehicles from shoreline and drawdown areas to protect existing plant communities.

Residual Impacts

Residual impacts include increased loss of vegetation as population pressures result in increased visitor use of the lake and recreation areas are expanded or developed to meet those needs.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL program would be the same as described for the No Action Alternative. Cumulative impacts on vegetation attributable to this Alternative would be less than under No Action because less land would be developed for recreation.

Alternative B: Limited Recreation Development /Increase Natural Resource Emphasis

Loss of plant communities would be reduced at all facilities not expanded or constructed with this alternative. About 281 fewer acres would be developed for recreation compared to Alternative A, thereby substantially reducing disturbance and vegetation losses. However, demand would continue to increase, so vegetation trampling at existing recreation sites would increase. An increase in WMA acreage (155 acres) would likely offset losses. Monitoring trails and an increased public awareness/education effort aimed at adherence to the 200-foot voluntary no-wake zone along WMAs, to the extent that it is honored, would enhance and protect vegetation. Vegetation losses would increase in the Gold Fork (non-motorized trail) and North Fork Arms (no formalization of ad hoc trails). No monitoring of private landscaping effectiveness would occur, resulting in poor maintenance and loss of plant communities from erosion. A slight reduction in erosion control structures built by Reclamation would increase plant community losses in areas where erosion is cutting into the shoreline plant communities. Designation of an additional 123 acres of C/OS would increase the acreage of plants protected with this designation relative to Alternative A. These communities would improve in quality over the long-term. Increased emphasis on development, protection, and enhancement of wetlands would improve hydrophytic communities around the reservoir.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL program would be the same as described for the No Action Alternative. Impacts from Alternative B would be less than under the No Action Alternative because of less recreation development.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

The amount of land that would be disturbed for constructing recreation sites would be about the same as Alternative A, resulting in similar loss of plant communities. Monitoring trails and an

increased public awareness/education effort aimed at adherence to the 200-foot voluntary no-wake zone along WMAs, to the extent that it is honored, would enhance and protect vegetation. An increase of 9 acres of C/OS land would increase protection of shoreline plant communities relative to Alternative A slightly.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL program would be the same as described for the No Action Alternative. Impacts from Alternative C would be the same as No Action because of similar losses of vegetation.

3.5 Wildlife

3.5.1 Affected Environment

The Idaho Department of Fish and Game (IDFG) and the U.S. Fish and Wildlife Service (FWS) assist Reclamation in managing fish and wildlife resources. The Fish and Wildlife Coordination Act, the Endangered Species Act, and the National Environmental Policy Act mandate that Reclamation, as a Federal agency, protect, conserve, and enhance wildlife and fisheries resources.

Several important WMAs are located around Lake Cascade. These generally correspond with the WMAs established as part of the 1991 RMP. The primary reasons for establishing the WMAs was to preserve long-term, viable habitat for waterfowl, birds of prey, mammals, and other wildlife. This is accomplished by protecting important wildlife habitat and managing conflicting uses. Each WMA has an active management plan that describes implemented or planned actions. These actions vary by WMA but typically include the following:

- Fencing to exclude livestock and vehicles
- Habitat improvement measures
- Information and education programs
- Development of facilities for compatible uses, such as Nordic skiing

Several of these areas also include important bald eagle habitats as described in the Cascade Reservoir Bald Eagle Management Plan (BEMP) prepared by the FWS, USFS, and Reclamation in 1990 (USFS et al. 1990).

The WMAs also provide habitat, such as forage, shelter, and reproduction sites, for a number of other wildlife species. The most crucial, abundant, and sensitive of these habitats are the riparian areas and wetlands. The emergent vegetation, adjacent wet meadows, swales, mudflats, and sandbars are critical as nesting, feeding, and loafing habitat for waterfowl, shorebirds, and wading birds. FWS (1990) indicates that 151 species of birds, 47 mammal species, 8 amphibian, and 5 reptile species are found in the vicinity of Lake Cascade.

Birds

Generally, in the dry west, many studies have shown that as many as 80 percent of all wildlife species depend partly or wholly on wetland and riparian communities for their survival. A few of the many species of water-oriented birds reported inhabiting the Lake Cascade area during the breeding season or during migration are listed in Table 3.5-1. This is not a complete species list but represents the variety of water-oriented birds found at the reservoir.

Table 3.5-1. Water-Oriented Birds Inhabiting the Lake Cascade RMP Area

Common Name	Scientific Name
bald eagle	*Haliaeetus leucocephalus*
several species of gulls	*Larus* spp.
American avocet	*Recurvirostra americana*
osprey	*Pandion haliaetus*
long-billed curlew	*Numenius americanus*
white pelican	*Pelecanus erythrorhynchos*
mallard	*Anas platyrhynchos*
pintail	*Anas acuta*
western grebe	*Aechmophorus occidentalis*
common merganser	*Mergus merganser*
American wigeon	*Anas americana*
great blue heron	*Ardea herodias*
common loon	*Gavia immer*
black-necked stilt	*Himantopus mexicanus*
tundra swan	*Cygnus columbianus*
Canada goose	*Branta canadensis*
snow goose	*Chen caerulescens*
killdeer	*Charadrius vociferus*
lesser yellowlegs	*Tringa melanoleuca*
spotted sandpiper	*Actitis macularia*
Wilson's phalarope	*Phalaropus tricolor*

Sources: Reclamation 1991a, FWS 1990, and Groves et al. 1997

Lake Cascade is an important migration staging and resting area for water-oriented birds flying south in October. Birds generally flock in separate masses of 100 to 200 birds each according to species. Several of these species, such as dabbling ducks, feed on small grains harvested in fields east of the reservoir, then return to the reservoir for loafing. Shorebirds also use the area as a rest

stop during migration. Because of its high elevation, Lake Cascade functions mainly for the initial congregation of migrating birds during the fall. Birds move quickly to lower elevation waters, such as Lake Lowell, where larger congregations occur (Reclamation 1991a).

The largest wetland areas are located at Willow Creek, Mallard Bay, Hot Springs Creek, and the upper arms of the reservoir. Canada geese congregate around the Willow Creek and Mallard Bay wetlands in the spring and early fall. They also occur at the Hot Springs Creek wetlands, along with feeding herons. Canada geese also feed extensively on the annual grasses and forbs that colonize portions of the reservoir drawdown zone during late summer and early fall. During spring migration, snow geese and tundra swans use Sugarloaf Island and adjacent areas. Directly west of Sugarloaf on the western shore of the reservoir, the Mallard Bay wetlands support a colony of nesting western grebes. Common loons, a species of special concern that have similar habitat requirements as the western grebe, have also been sighted in this wetland, although no nests have been found, possibly because this species needs seclusion. Long-billed curlews, a more upland shorebird, were reported to nest in the area in 1991 (Reclamation 1991a). Conversations with local agency biologists could not confirm if curlews still nest in the area. Pelicans feed in the general vicinity of Mallard Bay and Hot Springs Creek, along with Canada geese and great blue herons, during the spring, summer, and early fall. Most of these water-oriented birds are sensitive to disturbance during the nesting and rearing season between mid-March and the end of June.

The upper arms of the reservoir support the greatest abundance and diversity of wildlife because of the intermingled mosaic of habitat types. The flooded river meanders from an undulating shoreline with its many inlets, coves, channels, and edges, and few conflicting human activities. These areas provide the seclusion needed for especially sensitive species such as the common loon. Great blue herons have established a large rookery in a stand of lodgepole pines at the north end of the North Fork Arm. Herons generally require an area with little or no disturbance within about one-half mile of their rookery. Water level fluctuations pose a problem for nesting waterfowl along the reservoir shoreline. Birds build nests along the waterline that may be flooded out as water levels increase in the late spring. Habitat enhancement at the WMAs alleviates part of this problem by providing additional nesting habitat, but water level fluctuations will continue to pose problems along the shoreline. IDFG believes this problem can be solved by digging potholes along the high water line, or by creating offshore islands and providing side channel ponds in the arms of the reservoir.

In addition to water-oriented birds, numerous neotropical migrants are common, especially in the upper arms of the reservoir. Species that may be observed in the area are listed on Table 3.5-2.

Table 3.5-2. Neotropical Migrants Common in the Lake Cascade RMP Area

Common Name	Scientific Name
evening grosbeak	*Coccothraustes vespertinus*
tree swallow	*Tachycineta bicolor*
dipper	*Cinclus mexicanus*
gray jay	*Perisoreus canadensis*
western kingbird	*Tyrannus verticalis*

Table 3.5-2. Neotropical Migrants Common in the Lake Cascade RMP Area

Common Name	Scientific Name
dark-eyed junco	*Junco hyemalis*
mountain chickadee	*Parus gambeli*
vesper sparrow	*Pooecetes gramineus*
chipping sparrow	*Spizella passerina*
mountain bluebird	*Sialia currucoides*
belted kingfisher	*Ceryle alcyon*
Steller's jay	*Cyanocitta stelleri*
calliope hummingbird	*Stellula calliope*
yellow-rumped warbler	*Dendroica coronata*
yellow warbler	*Dendroica petechia*

Sources: Reclamation 1991a, FWS 1990, and Groves et al. 1997

Blue, ruffed, and spruce grouse occur in the forested mountain areas. The conifers west of the reservoir also provide suitable habitat for cavity-dependent birds species, such as pileated and Lewis' woodpecker, wrens, and nuthatches. Table 3.5-3 lists these forested-mountain and cavity-dependent species as well as the raptors commonly found in the Cascade area.

Table 3.5-3. Other Bird Species Found at the Cascade Lake RMP Area

Common Name	Scientific Name
Forested-Mountain Species	
blue grouse	*Dendragapus obscurus*
ruffed grouse	*Bonasa umbellus*
spruce grouse	*Dendragapus canadensis*
Cavity-Dependent Species	
pileated woodpecker	*Dryocopus pileatus*
Lewis' woodpecker	*Melanerpes lewis*
wrens	*Troglodytes* spp.
nuthatches	*Sitta* spp.
Raptors	
red-tailed hawk	*Buteo jamaicensis*
rough-legged hawk (during winter)	*Buteo lagopus*
northern harrier	*Circus cyaneus*
American kestrel	*Falco sparverius*
northern goshawk	*Accipiter gentilis*
short-eared owl	*Asio flammeus*
long-eared owl	*Asio otus*

Table 3.5-3. Other Bird Species Found at the Cascade Lake RMP Area

Common Name	Scientific Name
great-horned owls	*Bubo virginianus*
great gray owls	*Strix nebulosa*
osprey	*Pandion haliaetus*

Sources: Reclamation 1991a, FWS 1990, and Groves et al. 1997

Lake Cascade raptor populations include great-horned owls (*Bubo virginianus*), especially in the upper arms of the reservoir. A few great gray owls (*Strix nebulosa*) also inhabit the area north of Donnelly along the east side of the reservoir throughout the year (pers. comm., L. Powers Biology Professor, Northwest Nazarine University, Nampa Idaho, July 14, 1999). Dr. Powers indicated that three pairs consistently nested in this general area in the mid to late 1980s. However, in 1998, only one nesting pair was found following extensive efforts. Great gray owls need forest edges for hunting with dense timber stands nearby for thermoregulation and nesting. Powers suggested that habitat fragmentation resulting from summer home development and wood cutting has reduced the size and number of dense forest stands as well as the density of trees in remaining stands, thereby degrading habitat quality. Summer heat stress is also a problem for this species at relatively low elevations, especially as the dense forest canopy is opened.

One other raptor of particular interest at Lake Cascade is the osprey (*Pandion haliaetus*). Osprey numbers have increased considerably since Cascade Dam was completed and the reservoir filled. This expansion is the result of several factors, including prohibiting the use of long-lived pesticides, erection of nesting platforms, and a productive fishery in Lake Cascade. The first intensive surveys to determine osprey status were conducted between 1978 and 1980 (Van Daele et al. 1980). This study found that the valley area supported approximately 50 nesting pairs with approximately 30 nesting pairs observed in the immediate vicinity of the reservoir (Reclamation 1991a). By 1989, the number of nesting pairs had increased to over 90 with 69 pairs nesting at Lake Cascade. Although no firm count is available, as many as 90 pairs may nest in the immediate vicinity of the reservoir. Nesting concentrations are highest where artificial nesting platforms have been erected around the reservoir. Nests are built on snags (58 percent), live trees, power poles, and artificial platforms (20 percent) with concentrations in the Duck, Gold Fork, and Willow Creek areas (FWS 1990).

Ospreys are most sensitive to disturbance early in the nesting season from mid-April through mid-July. A 1/4- to 3/4-mile no disturbance radius around a nest is generally recognized to provide effective protection. However, many of the osprey at Lake Cascade have demonstrated their adaptability to certain types of human activity, with several nests located next to roads. Ospreys have shown a high degree of tolerance of high speed highway traffic as long as vehicles move quickly past the nest site.

The peregrine falcon (*Falco peregrinus*), which was de-listed July 1999, has been successfully released several times at a site 11 miles away from the reservoir in Scott Valley, east of the town of Cascade. There have been summer sightings of peregrines in the Duck Creek area where their

primary prey base, waterfowl, are abundant. Peregrines are anticipated to eventually nest in the cliffs and ledges along West Mountain where appropriate habitat is available (Reclamation 1991a). Peregrines are especially sensitive during nesting and rearing periods that occur between mid-March and the end of July. A 1-mile, year-long, no disturbance radius around nests has been established to protect this recovering species. No peregrines are known to nest in the vicinity of Lake Cascade (Levine et al. 1998).

Amphibians and Reptiles

Examples of amphibians and reptiles typically found in the study area are listed in Table 3.5-4.

Table 3.5-4. Amphibians and Reptiles Found in the Lake Cascade RMP Area

Common Name	Scientific Name
Amphibians	
long-toed salamander	*Ambystoma macrodactylum columbianum*
Western Toad	*Bufo Boreas*
Pacific chorus frog	*Hyla regilla*
spotted frog	*Rana luteiventris*
Reptiles	
rubber boa	*Charina bottae*
gopher snake	*Pituophis melanoleuces deserticola*
common garter snake	*Thamnophis sirtalis*
Western garter snake	*Thamnophis elegans*

Sources: Reclamation 1991a, FWS 1990, and Groves et al. 1997

The former river meanders of the North Fork, Lake Fork, and Gold Fork arms of the reservoir provide high quality habitat for amphibians. Populations of many frog species have apparently suffered declines on a global scale in recent years, making all suitable habitat especially important.

Mammals

Small mammals that commonly occur in the vicinity of Lake Cascade are listed on Table 3.5-5. Terrestrial small mammals provide an important food supply for area predators. A bat roost (species unidentified) is located under a bridge over one of the reservoir arms.

Table 3.5-5. Small Mammal Species Present in the Lake Cascade RMP Area

Common Name	Scientific Name
masked shrew	*Sorex cinereus*
long-legged brown bat	*Myotis volans*
montane meadow mouse	*Microtus montanus*

Table 3.5-5. Small Mammal Species Present in the Lake Cascade RMP Area

Common Name	Scientific Name
deer mouse	*Peromyscus maniculatus*
golden-mantled ground squirrel	*Spermophilus laterlis*
red squirrel	*Tamiasciurus hudsonicus*
snowshoe hare	*Lepus americanus*
yellow-bellied marmot	*Marmota flaviventris*
mountain cottontail	*Sylvilagus nuttallii*
yellow pine chipmunk	*Eutamias amoenus*
porcupine	*Erethizon dorsatum*

Sources: Reclamation 1991a, FWS 1990, and Groves et al. 1997

The reservoir arms also provide high quality habitat for furbearers such as beaver, river otter, muskrat, mink, badger, raccoon, coyote, striped and spotted skunk, long-tailed weasel, and red fox (listed on Table 3.7-5). Red fox are common throughout the Lake Cascade area.

River otter forage extensively along each of the northern drainages that flow into the reservoir; the North Fork of the Payette River and Gold Fork, Lake Fork, and Boulder creeks are used most extensively (Melquist and Hornocker 1983). Melquist and Hornocker's study indicated that fish are the most important prey item of otters, occurring in 93 to 100 percent of fecal samples (FWS 1990).

Larger mammals are less common, but are present in the area and listed in Table 3.5-6. White-tailed deer occur in riparian areas, mostly in the North Fork river bottom, and a few elk may also forage in the reservoir area (Reclamation 1991a). Elk and deer use the dense timber and wet meadow complexes of West Mountain (immediately west of Lake Cascade) during the spring and summer. During late November, these species migrate west into the Weiser River drainage for the winter. Deer also use the southern end of the reservoir and the Hot Springs WMA as winter habitat, and a few deer and elk may winter in the Crown Point area where there is a good bitterbrush stand. This area, on the east side of the reservoir, has less snow and is warmer because of its westerly aspect.

Table 3.5-6. Furbearers and Large Mammals Found in the Lake Cascade RMP Area

Common Name	Scientific Name
Furbearers	
beaver	*Castor canadensis*
voles	*Microtus spp.*
river otter	*Lutra canadensis*
muskrat	*Ondatra zibethicus*

Table 3.5-6. Furbearers and Large Mammals Found in the Lake Cascade RMP Area

Common Name	Scientific Name
mink	*Mustela vison*
badger	*Taxidea taxus*
raccoon	*Procyon lotor*
coyote	*Canis latrans*
striped skunk	*Mephitis mephitis*
spotted skunk	*Spilogale putorius*
long-tailed weasel	*Mustela frenata*
red fox	*Vulpes vulpes*
Large Mammals	
white-tailed deer	*Odocoileus virginianus*
elk	*Cervus elaphus*
moose	*Alces alces*
mule deer	*Odocoileus hemionus*

Sources: Reclamation 1991a, FWS, 1990, and Groves et al. 1997

The west shoreline is not good winter range because of its colder, east-facing exposure and greater accumulation of snow, although some wintering may occur in mild winters. The Willow Creek area is also a wintering ground for a few elk. Occasionally, a small number of elk may swim across the reservoir during their annual migration to and from winter ranges in the west. Most elk summering on West Mountain migrate to the west to the Weiser River drainage for the winter. Moose (*Alces alces*) are only occasionally observed passing through the area; there is no resident population (FWS 1990). Mountain lion (*Felis concolor*), bobcat (*Lynx rufus*), and pine marten (*Martes americana*) occur in the mountains to the west of the reservoir but rarely occur in the valley.

Black bears (*Ursus americanus*) are nomadic with their movements depending largely on berry production of forest shrubs, one of their main sources of food. Black bears generally stay in the forested areas on West Mountain except during dry, poor berry years. The North Fork of the Payette is a travel corridor for bears.

Big game hunting on Reclamation lands is not encouraged because of the potential danger to adjacent residents. However, Reclamation has no enforcement authority with regard to hunting except in campground areas. The IDFG has full authority and responsibility and will cooperate with Reclamation if a hazard is shown to exist. Gold Fork and Sugarloaf are the primary hunting areas for waterfowl. Waterfowl hunting is safer in these areas because fewer homes are located along the shore.

Rare and Sensitive Species

A former endangered species, the peregrine falcon (*Falco peregrinus*), has been successfully released several times at a site 11 miles away from the reservoir in Scott Valley, east of the town of Cascade. There have been summer sightings of peregrines in the Duck Creek area where their primary prey base, waterfowl, are abundant. Peregrines are anticipated to eventually nest in the cliffs and ledges along West Mountain where appropriate habitat is available (Reclamation 1991a). Peregrines are especially sensitive during nesting and rearing periods that occur between mid-March and the end of July. A 1-mile, year-round, no disturbance radius around nests has been established to help protect this recovering species. No peregrines are known to nest in the vicinity of Lake Cascade (Levine et al. 1998).

The FWS letter concerning rare species in the area listed several wildlife species about which they are interested because their declining population status and/or threats to their long term viability. While these species have no legal status under the ESA, their long term viability is also of interest to Reclamation. Therefore, the potential status of these species are addressed briefly here.

The fisher (*Martes pennanti*) prefers late-successional conifer forests and especially riparian zones (Powell and Zielinski 1994) but have also been reported to prefer young to medium aged conifer stands in parts of the Rocky Mountains (Jones 1991, Roy 1991). Douglas-fir is mentioned as a preferred habitat type and snowshoe hares are one of their primary prey species. Suitable fisher habitat may occur on USFS lands to the west of Lake Cascade. However, the range of the fisher in Idaho may not include the immediate Lake Cascade area (Groves et al. 1997).

Kelsall (1981) defined wolverine (*Gulo gulo luscus*) habitat as areas with adequate year-round food supplies, in large sparsely inhabited wilderness areas rather than in terms of topography or plant associations. Groves et al. (1997) describes wolverine habitat in Idaho as remote, mountainous areas unaffected by human disturbance and their range map includes all of Valley County. Wolverines have large home ranges and are known to move long distances in search of food. More remote portions of West Mountain could be frequented by wolverines. The valley and Reclamation lands around Lake Cascade are probably too populated to provide quality wolverine habitat.

The long-eared myotis (*Myotis evotis*) occupies forested lands throughout Idaho, especially near water. Roosts are always found near water. This species is common in lodgepole pine forests (Groves et al. 1997). Suitable habitat may exist along the North Fork of the Payette River arm of Lake Cascade where lodgepole pine is common and there is abundant water nearby.

Flammulated owl (*Otus flammeolus*) habitat in Idaho consists of older ponderosa pine, Douglas-fir, and mixed conifer forests. According to the range maps shown by Groves et al. (1997), flammulated owls occur throughout much of Valley County and therefore may occur on Reclamation and adjacent forested lands. The IDFG letter commenting on the WestRock project (ISLB 1999) indicates that flammulated owls probably occur in the WestRock project area.

Northern pygmy-owls (*Glaucidium gnoma*) prefer dense forests or open woodlands in the mountains or foothills and forage in open meadows. Much of Valley County is shown as being

occupied by pygmy-owls (Groves et al. 1997). Suitable habitat may exist along the North Fork of the Payette River arm of Lake Cascade and in several of the WMAs that support forest stands.

The black-backed woodpecker (*Picoides arcticus*) occurs in coniferous forests (primarily spruce/fir), especially in windfall and burned areas with standing dead trees (Groves et al. 1997). Their range map appears to include the West Mountain area just to the west of Lake Cascade.

In Idaho northern goshawks (*Accipiter gentilis*) breed in coniferous and aspen forests and winter in lower elevation riparian and agricultural areas. Nests tend to be located in the tallest trees in dense timber stands. Suitable nesting habitat may exist on West Mountain and Reclamation lands are probably used for foraging and during migration. The IDFG letter commenting on the WestRock project (ISLB 1999) indicates that northern goshawks probably occur in the WestRock project area.

The upland sandpiper (*Bartramia longicauda*) prefers dry grass prairies in Idaho and is not tied to wet areas or shores (Groves et al. 1997). Three of the four locations shown for this species in Idaho are in Valley County and one appears to include portions of the upper arms of Lake Cascade.

3.5.2 Environmental Consequences

This section discusses the expected positive and adverse impacts of the RMP alternatives on wildlife and habitat. General and specific impacts on vegetation were discussed in Section 3.5.

Assessment Categories

The general nature of beneficial and adverse impacts on wildlife and wildlife habitat of the various actions that would be implemented under one or more of the alternatives is described for four assessment categories.

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

The 1991 RMP established 3,987 acres of WMAs to protect wildlife habitat from human encroachments. The RMP also designated 1,422 acres as C/OS lands to act as buffers between WMAs and recreation sites or private lands. The alternatives in the current RMP would either maintain or slightly increase the area designated as WMA and C/OS lands.

About 1,846 acres of existing WMAs and C/OS lands are encumbered by permanent AEs that permit the easement owner to graze livestock. Reclamation has no authority to control grazing on these lands and habitat values are degraded well below the potential that would be achieved in the absence of grazing. All of the alternatives include a provision calling for Reclamation to continue to negotiate with AE owners to terminate grazing on Reclamation lands, or, at a minimum, to keep livestock away from the shoreline. Reclamation would also attempt to acquire AEs to eliminate grazing through purchase, lease, or exchange. Past Reclamation actions along these lines have

focused on encouraging easement owners to voluntarily keep livestock away from the reservoir shoreline to reduce erosion and reduce the amount of animal waste directly entering the reservoir. Reclamation's success has been mixed; some easement owners have chosen to cooperate and others have not. In the past, Reclamation has acquired the AEs by exchange to eliminate grazing on its lands; however, no AEs have been acquired since the 1991 RMP. Under all alternatives, to the extent that such a program is successful, it would greatly enhance habitat values on affected WMA and C/OS lands. Where it is not successful, existing management practices on WMA and C/OS lands would not change and habitat values would not achieve their full potential in the future. However, habitat values on grazed lands would continue to be higher than if these lands were developed for recreation or other human uses.

One or more of the alternatives includes development and implementation of habitat improvement plans for C/OS lands and additional wetland development on WMAs. Both actions would be beneficial for wildlife and habitat values.

Water Quality, Surface Water Management, and Erosion Control

Efforts to address AEs were discussed above. Water quality improvement and improved erosion control would benefit wildlife habitat. Non-motorized boating areas designated in the 1991 RMP would continue under all of the alternatives with substantial direct and indirect benefits for wildlife. Benefits include substantially less disturbance than in areas open to motorized boating and no-wake-generated waves. Fewer waves reduces shoreline erosion and habitat loss and reduces the potential for flooding of water bird nests. Under the action alternatives, erosion control measures intended to stop the loss of upland vegetation would result in a short-term habitat loss during construction and relatively long-term habitat benefits through avoiding or slowing future habitat loss. The benefits would be minor because construction of retaining walls is expected to occur on a piecemeal basis and protected habitats have already been degraded to a degree by residential and recreational development.

Improved or Restricted Access

Enforcement of restrictions on vehicle access to the shoreline would avoid future upland and habitat loss and allow areas currently degraded by this activity to recover slowly. Trail development under all of the alternatives would result in the loss of about 3 acres of mostly disturbed shrub and herbaceous vegetation along the reservoir's southeast shoreline, and 2 acres of herbaceous and riparian vegetation in the northwest. New trails into WMAs and between existing recreation sites would increase levels of wildlife disturbance under all alternatives. Seasonal trail closures in WMAs would reduce potential disturbance if implemented and enforced. Interpretive trails can have the benefit of educating the public and creating more support for natural resource protection. Trail development may also reduce the current use of ad hoc trails and allow habitat to recover from trampling. Allowing motor vehicle access on the railroad grade north of Crown Point may indirectly result in vegetation and habitat loss if new areas are developed as residential housing on nearby private lands. This would also result in habitat loss and increased wildlife disturbance on Reclamation lands as residents establish ad hoc trails to the shoreline and trample shoreline

previously used lightly or not at all. Establishment of 200-foot wide no-wake zones along WMAs would provide benefits for wildlife to the extent that public education/awareness is successful in reducing human intrusions near these lands.

Improved Facilities and Miscellaneous

Improvement of existing facilities within the existing footprint of disturbed ground would accommodate and attract higher levels of human use under all of the alternatives. Overall, recreation use is expected to increase by 20 percent during the next 10 years. Higher levels of use would result in additional wildlife disturbance and degradation of surrounding habitat value because of the presence of more people. Expansion of recreation facilities has the same impacts as improving facilities, plus the direct loss of habitat areas that are converted to recreation uses. The extent of these direct habitat losses would be expected to be proportional to the land area used for expanded recreation, which is discussed for each of the alternatives. Completely new facilities in relatively remote areas where none currently exist, such as new boat-in camping, as described under the No Action Alternative and proposed under the Preferred Alternative and Alternative C, would have relatively larger disturbance-related effects for their area because little human activity occurs in these areas at the present time.

Under all of the alternatives, new marinas would accommodate both increasing demand and provide facilities for more users, thereby resulting in higher use levels. Construction of marinas to accommodate more motorized boating activity would result in several indirect, secondary impacts on wildlife and habitat, including increased levels of disturbance and harassment, increased shoreline erosion from boat wakes, more fuel and oil in the water, and more problems in enforcing no-wake zones along WMAs. Formalized vehicle parking at sites where ad hoc parking occurs now would result in immediate small habitat loss but tend to reduce future habitat loss and probably be a net benefit for wildlife habitat.

Alternatives

The relative magnitude of expected impacts on wildlife and habitat are discussed for each of the alternatives. The reader is directed back to Chapter 2 and Table 2.3-1 for more site-specific information regarding actions that would be implemented or allowed under each of the alternatives.

Alternative A—No Action: Continuation of Existing Management Practices

Levels of recreation use are expected to increase 20 percent over the next 10 years (see Section 8, *Recreation*). In the absence of new recreation site development, increased levels of use would result in increased habitat degradation adjacent to existing recreation sites, more habitat loss through ad hoc recreation activity, and increased levels of wildlife disturbance and occasional harassment.

The No Action Alternative would allow new recreation facilities to be developed on approximately 313 acres of lands that are currently managed as C/OS. Direct impacts would include habitat loss

and degradation of adjacent C/OS and WMA areas because of increased human use. Wildlife disturbance adjacent to new recreation sites would also increase. Formalizing boat-in camping at Driftwood Point and allowing vehicle access to Sugarloaf Peninsula would generally be more detrimental to wildlife than development of other recreation facilities because of the relatively low current levels of human use of these two areas. Most of the other new recreation developments and expansions would occur at existing recreation areas that already have relatively high human use.

Trail development would increase pedestrian access to the reservoir shoreline, which would cause minor habitat loss and contribute to wildlife disturbance. Allowing construction of marinas would increase boat launching capacity and indirectly result in more wildlife disturbance along the shorelines of WMAs and increased boat wake induced erosion and habitat loss. Reopening the former state airstrip would result in increased levels of wildlife disturbance and possibly substantial habitat loss because of associated recreational and potential residential development.

Rare and Sensitive Species

The projected 20 percent increase in levels of recreation use at Lake Cascade over the next 10 years, combined with conversion of 313 acres of land managed as C/OS to new recreation facilities, would result in habitat loss and increased levels of potential human disturbance on all wildlife. Rare and sensitive species and their habitats would be adversely affected. Potential rare species habitat losses on Reclamation lands would be less than those expected from WestRock due to less affected acreage.

Potentially suitable habitat for several rare species may exist on Reclamation lands, especially the forested portions of WMAs. Management and wildlife habitat conditions on most of the WMA lands would either not change under the No Action Alternative or would improve if AEs are changed. An exception to expected improved habitat conditions would involve lands managed as C/OS that would be converted to recreation. About 180 acres of coniferous forest in C/OS-managed areas would be converted to recreation uses, adversely affecting the fisher, long-eared myotis, flammulated owl, northern pygmy-owl, black-backed woodpecker, and northern goshawk on Reclamation lands. Increases in recreation use and continued development of private lands around Lake Cascade would also degrade the value of potential habitat for these species near the reservoir. Conversion of 45 acres of herbaceous cover type to recreation uses could adversely affect the upland sandpiper. The wolverine typically uses areas not inhabited by people and would not be expected on Reclamation or adjacent private lands.

Cumulative Impacts

The WestRock resort would result in substantial direct wildlife habitat loss as the development proceeds. A wide variety of forest dwelling species would be adversely affected. The resort would also result in a large increase in the local population and a corresponding increase in recreation activity on Reclamation lands and on Lake Cascade. Wildlife disturbance on all Reclamation lands, especially on the west side of the reservoir, would increase substantially because of the presence of substantially more people. Habitat

values of wetlands and the WMAs and C/OS lands adjacent to the reservoir would be degraded and more erosion would be expected from boat wakes. The IDFG letter commenting on the WestRock project (ISLB 1999) concurs with this assessment of boating impacts. Development of the WestRock project may adversely affect habitat for several listed and rare species of wildlife.

Implementation of the TMDL measures contained in the Cascade Reservoir Watershed Management Plan would improve water quality. This would be beneficial for all wildlife species that use the reservoir. Any resulting improvement in the fishery would benefit wildlife predators.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Specific differences between the No Action Alternative and the Preferred Alternative that affect wildlife and habitat are discussed in this section. The Preferred Alternative would allow new recreation facilities to be developed on about 110 acres of lands that are currently managed as C/OS, compared to 313 acres under the No Action Alternative. These lands include about 19 acres of coniferous forest and 10 acres of wetland and riparian cover types, which provide habitat for a variety of wildlife species. Direct and indirect impacts of recreation development would be similar to those described for the No Action Alternative but would occur on a much smaller scale. Monitoring and closing certain trails if their use impacts wildlife and a small increase in WMA acreage (39 acres) would enhance and protect wildlife habitat and reduce potential disturbance. Conversion of land designations from C/OS to Recreation to allow development of a west side trail, and the subsequent construction and use of this trail, would result in additional direct habitat loss and increased wildlife disturbance in this area. Designation of an additional 158 acres of C/OS would increase protection of shoreline and adjacent upland habitat. If public awareness/education efforts are successful, the 200-foot wide no-wake zones would actually provide more security for wildlife than they are currently afforded by a much wider no-wake zone that is not adhered to by the public. This wider no-wake zone was established during the 1991 RMP. Updating and implementing habitat improvement plans with an emphasis on wetlands would provide habitat benefits for a wide variety of species. A larger marina at Van Wyck would result in greater direct and indirect impacts on wildlife and habitat.

Rare and Sensitive Species

Conversion of 110 acres of C/OS-managed lands to recreation facilities represents a relatively minor habitat loss for rare and sensitive species.

Mitigation

In addition to the BMPs identified in Chapter 5, Reclamation would replace the area and habitat value of all wetlands and riparian areas that would be directly impacted or degraded by implementation of this alternative.

Residual Impacts

Residual impacts would include minor loss of upland habitat and other non-wetland related direct and indirect impacts discussed above.

Cumulative Impacts

Cumulative impacts attributed to WestRock and the TMDL program would be the same as described for the No Action Alternative, while RMP impacts would be less under the Preferred Alternative because of fewer affected acres.

Alternative B—Limited Recreation Development /Increase Natural Resource Emphasis

Implementation of Alternative B would result in the smallest development of new or expanded recreation facilities of any of the alternatives (32 acres compared to 313 acres for No Action). Alternative B would also result in the largest area designated as WMA (4,142 acres versus 3,987 acres for the No Action Alternative) and would add 123 acres of C/OS. Habitat values would likely improve in the new WMA and C/OS lands over the long-term and there would be substantially smaller direct impacts on wildlife and habitat. Recreation visitation, and the associated higher human disturbance and habitat degradation would still increase but Reclamation facilities would generally not be expanded to attract more visitors. A slight reduction in erosion control structures built by Reclamation would increase habitat losses in areas where erosion is cutting into the shoreline plant communities. Increased emphasis on development, protection, and enhancement of wetlands would improve habitat for a wide range of species.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL program would essentially be the same as described for the Preferred Alternative. RMP impacts would be less than No Action because of less affected land.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

This alternative would result in about the same amount of land converted to recreational uses as the No Action Alternative. Therefore, impacts on wildlife and habitat would also be about the same. Habitat value could decline in WMAs compared to the Preferred Alternative because there would be no monitoring and closure of trails to reduce wildlife impacts. Expanded facilities at Osprey Point would substantially increase wildlife disturbance in the Duck Creek WMA compared to the No Action Alternative. Possible expansion of west side recreation sites into C/OS areas and conversion of C/OS to Recreation for trail development would result in additional habitat loss and wildlife displacement as would allowing motorized vehicle use of trails on C/OS lands in the Boulder Creek arm. Allowing motor vehicle use of the railroad grade north of Crown Point would increase wildlife disturbance and could open a new area to residential development, with subsequent increases in wildlife and habitat losses. Habitat loss would also occur at the Hot Springs Creek WMA because of development of parking and a trail and trailhead. Finally, permitting

off-road vehicle use of trails in the Vista Point area would increase direct habitat loss because of wider trails, increase wildlife disturbance, and result in adjacent habitat losses as some users deviate from designated trails.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL program would be the same as described for the No Action Alternative, while there would also be the same impacts on wildlife and habitat under Alternative C as described under the No Action Alternative.

3.6 Threatened and Endangered Species

3.6.1 Affected Environment

Plants

The Ute ladies'-tresses orchid (*Spiranthes diluvialis*) is the only Federally protected plant species that may occur near Lake Cascade. It typically occupies floodplains and wet meadows with little overhanging shrub or tree canopy. Wetland and riparian habitats such as springs, wet meadows, and river meanders are potential habitat. Ute ladies'-tresses orchids have been found in southeast Idaho and eastern Washington and may occur in suitable habitats between these locations. No searches for this species have been conducted on Reclamation lands. Field surveys would be conducted at the sites of any future land-disturbing activities within wetlands or riparian communities on Reclamation lands.

Wildlife

Bald Eagle

FWS recently determined that bald eagles are still a threatened species in Idaho. Like ospreys, the nesting bald eagle population at Lake Cascade has also increased. The first bald eagle nest was discovered in the reservoir area in 1976. There are now eight known active bald eagle nests around the reservoir, with six pairs on the west side and two on the east. Three pairs also nest along the North Fork of the Payette River within a few miles to the south of the reservoir (Beals and Melquist 1998). There are also two bald eagle nests along the Payette River between Lake Cascade and McCall.

The 1990 Cascade Reservoir BEMP provides recommendations on recreation use, timber management, livestock management, eutrophication, areas exempted from eagle management, chemical use, control of pesticides, and an annual interagency evaluation of wildlife management resources at the reservoir. The majority of those recommendations were incorporated into the 1991 RMP.

Eagle territories include nest sites, perch trees, and foraging areas. Eagles typically nest in isolated, mixed-aged timber in codominant or dominant trees with a clear flight path to feeding areas; in this case, feeding areas include the reservoir. Management for protection typically requires a 0.75-mile no disturbance radius around the nest throughout the year but important habitat areas extend throughout the reservoir, especially along the west shoreline outside of developed sites. Human presence interferes with hunting behavior of bald eagles, although the degree to which their behavior is affected varies for individual eagles. There have been many reports of eagles diving for fish near boats. Nesting behavior, however, is more defensive and subject to disturbance. See Appendix B for additional information concerning bald eagle nest buffers.

Fish throughout the reservoir provide the primary prey for the bald eagle. In the spring, ice melts first in the Hot Spring Creek area, exposing live fish to capture. Also, winter-killed fish begin to wash up along the shoreline. As the reservoir thaws and the readily available supply of dead fish is depleted, bald eagles switch to live fish again and to shorebirds and waterfowl. A late summer fish die-off resulting from warm temperatures and oxygen depletion again supplies dead fish for sustenance. Suckers (*Catostomidae*) and bullheads (*Ictalurus sp.*) congregating in shallow bays at this time provide a source of live fish.

The FWS is concerned about the protection of the eagle foraging area that includes the open water area and wetlands of Lake Cascade and all the land west to an elevation of 6,500 feet on West Mountain between Poison Creek and the Van Wyck Trail. Some locations for potential recreation areas are restrained by the bald eagle recovery goals and the proposed terms and conditions for bald eagle protection specified by the FWS for the proposed WestRock Resort. Additional concerns identified by FWS in their Coordination Act Report (Appendix B) include permanent loss of wildlife habitats, degradation of the quality of the remaining resources, and increasing pressure associated with human presence.

Canada Lynx

The FWS letter listing species protected under the Endangered Species Act (ESA) includes the lynx (*Lynx canadensis*), which was recently listed as a threatened species. Idaho is near the southern limits of the lynx range. Mountainous regions supporting stands of spruce (*Picea sp.*) and fir (*Abies sp.*), Douglas-fir, and lodgepole pine are generally considered to be suitable lynx habitat (Ruggiero et al. 1999). Snowshoe hares (*Lepus americanus*) represent the lynx primary prey (Hall 1981) and red squirrels (*Tamiasciurus hudsonicus*) are an important alternate prey when hares are scarce (Ruggiero et al. 1999). USFS lands immediately to the west of Lake Cascade and Reclamation lands along the North Fork of the Payette River may provide suitable lynx habitat based on the tree species present and the relatively undisturbed nature of those areas. Snowshoe hares are probably present in both areas and red squirrels are present on the USFS lands.

The WestRock Resort Wildlife Habitat Conservation Plan (WestRock 2000) states that lynx are not known to be present in their project area and that the nearest recent lynx records are from about 20 miles to the east of Lake Cascade. WestRock (2000), citing an unpublished USFS

report, also states that the availability of prey for lynx in the West Mountain area is considered low when compared to other areas of the Cascade Ranger District of the Boise National Forest.

Potential denning habitat is located six to seven miles northeast of Lake Cascade in the Sloan Creek and Kennally Creek watersheds, which are tributaries of the Gold Fork River. In addition, west of Lake Cascade suitable foraging and denning habitats have been identified on the Forest. The Forest Service has ongoing efforts to determine whether the lynx are present, and how this species uses habitats in the area. Lynx have been reported, but not confirmed, within the West Mountain lynx analysis units west of Lake Cascade, and a lynx track was documented in December 1999 in the Deadwood drainage southeast of the lake (USDA-Payette National Forest 2000; USDA-Boise National Forest 2000).

Lynx are generally secretive and rarely venture into populated areas. However, hare populations are cyclic on a 10 to 11 year cycle. Lynx may move into lower elevation, more populated areas during periods of low hare numbers drop below 0.5 hares per hectare (Ward and Krebs 1985). This movement could result in lynx occasionally traveling through and foraging on Reclamation lands, but this occurrence would probably be rare.

Gray Wolf

The gray wolf is classified as an experimental non-essential population throughout most of Idaho, including the Lake Cascade area (59 FR 60266). Wolves may currently occupy the forested areas to the east and northeast of Lake Cascade. Wolves hve been documented in the West Mountain area southwest of Lake Cascade during a tracking survey in the winter of 2000. Recently, several wolf sightings and tracks have been located on both the east and west sides of Lake Cascade. Denning and rendezvous sites have not been located in the Lake Cascade area; however, based on the frequency of observation of wolves, it is possible that wolves may become established in the area west of Lake Cascade if there is sufficient food base available (pers. comm., C. Niemeyer and R. Vizgirdas, USFWS 2000; pers. comm., T. Holden, U.S. Forest Service 2000; USDA-Boise National Forest 2000).

Fish

Bull Trout

The FWS letter listing species protected under the ESA includes the bull trout (*Salvelinus confluentus*) as possibly occurring in the RMP study area. A review of IDFG *Fisheries Management Plan 1996 – 2001* (IDFG 1996) and the State of Idaho Bull Trout Conservation Plan (IDFG 1998) indicates that the North Fork of the Payette River drainage is not listed as a key watershed for the bull trout, and surveys have not found them in Lake Cascade (IDFG 1998).

Bull trout are documented within the Lake Cascade watershed; however, they are restricted to the Gold Fork River above the impassable irrigation water diversion dam constructed there in the 1930s. Focal (spawning and rearing) habitat which supports a single depressed bull trout

population is located in the tributaries of the upper Gold Fork River Watershed. No bull trout have been found in the lower reaches of the Gold Fork River below the diversion dam or in Lake Cascade in recent times. In some areas of Idaho, reservoirs and lakes provide important habitat for the species. Conditions in Lake Cascade are likely unsuitable for bull trout because of warm water temperatures and poor water quality (USDA-Payette National Forest 1998; Steed 1998). Therefore, all of the alternatives would have no effect on bull trout, and bull trout are not discussed further in this section.

3.6.2 Environmental Consequences

Assessment Categories

Restoration and protection of native plant communities in certain habitat types could beneficially effect threatened and endangered species. These actions in shoreline, wetland, wet meadow, and streambank communities would be protective of potential or actual Ute ladies'-tresses habitat.

The general impacts in each of the Assessment Categories would be the same as described in Section 3.4, *Vegetation*, and Section 3.5, *Wildlife.*

Removal of cattle from shoreline grazing area would reduce trampling of the shoreline, which would allow vegetation to establish.

New trails would provide shoreline access under all alternatives where none currently exists, which may result in additional impacts to sensitive shoreline vegetation, potentially including Ute ladies'-tresses orchids.

Alternatives

Plants

Alternative A—No Action: Continuation of Existing Management Practices

Reclamation has not developed detailed plans for any future developments or pedestrian trails that are included in the Lake Cascade RMP. Reclamation will identify the areas on lands under their administration that could be potential Ute ladies'-tresses habitat. Typical potential habitat includes wetland and riparian areas such springs, wet meadows, and river meanders. Potential habitat may be ascertained through locating plants that are usually associated with the species or through cover type mapping. In areas of potential habitat, Reclamation would either change the location of the facility or trail to avoid direct and indirect impacts, including surface disturbance and hydrologic changes, or not construct the facility or trail. If potential habitat is found in the vicinity of existing or proposed trails or other high use public recreation areas where the potential for trampling exists, access restrictions would be implemented and strictly enforced. Reclamation would work with FWS to design a system to effectively restrict access without calling attention to the

presence of a threatened species. Implementation of these actions would be expected to avoid all potential impacts on the Ute ladies' tresses orchid and potential habitat and result in a determination of may affect, but not likely to adversely affect, from implementation of the Lake Cascade RMP. Reclamation will coordinate with FWS before undertaking actions that would be considered exceptions to this habitat avoidance policy.

Cumulative Impacts

As noted, impacts from RMP actions would generally be avoided. There would be no impacts from the TMDL process and actions in potential tress habitat would follow the same search and avoid approach to avoiding potential impacts. WestRock (2000) indicates that development of the resort would likely not impact tresses. FWS has not issued any documents rebutting or concurring on the conclusion (D. Mackey, Wildlife Biologist, USFWS, Boise, ID, August 7, 2000). Therefore, no further conclusions regarding WestRock can be drawn.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

The same measures described for Alternative A would be implemented to map potential habitat and avoid Ute ladies'-tresses orchids. This alternative may affect, but not likely to adversely affect Ute ladies'-tresses orchids.

Mitigation Measures

No impacts are anticipated and therefore, no mitigation measures are proposed.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

The same measures described for Alternative A would be implemented to map potential habitat and avoid Ute ladies'-tresses orchids. This alternative may affect, but not likely to adversely affect Ute ladies'-tresses orchids.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

The same measures described for Alternative A would be implemented to map potential habitat and avoid Ute ladies'-tresses orchids. This alternative may affect, but not likely to adversely affect Ute ladies'-tresses orchids.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

Wildlife

Alternative A—No Action: Continuation of Existing Management Practices

The projected 20 percent increase in levels of recreation use at Lake Cascade over the next 10 years, combined with conversion of 313 acres of C/OS-managed lands to new recreation facilities, would result in habitat loss and increased levels of potential human disturbance on all wildlife. Threatened and endangered species and their habitats would be negatively affected.

Bald Eagle. Several specific actions evaluated in this EA have the potential of affecting bald eagles nesting at Lake Cascade. The potential for adverse effects on eagles from specific actions are discussed below along with measures that would be implemented to avoid or minimize impacts. All of the bald eagle nests located on land administered by Reclamation and on adjacent lands will be monitored for adverse impacts as Reclamation implements the proposed projects under the RMP, with specific interest in the Gold Fork and North Fork nests, and those on the west side of Lake Cascade.

The number of bald eagle nests around Lake Cascade has increased steadily as bald eagle numbers have grown nationally. This has occurred at the same time that recreation visitation at Lake Cascade increased from 255,000 in 1988 to 330,000 in 1999, an increase of about 30 percent in 11 years. These nesting bald eagles are apparently tolerating current levels of human activity on and around Lake Cascade and they may continue to tolerate the projected 20 percent increase in recreation use during the next 10 years. On the other hand, levels of human use may increase above tolerable levels for some eagle pairs in some areas during this period. There is no way to predict when such a threshold might be crossed as individual bald eagle response to human activity is highly variable.

No new or expanded recreation development would occur within 0.75 mile of an existing bald eagle nest, so no direct impacts are expected. In conclusion, implementation of the No Action Alternative may affect, but is not likely to adversely affect, bald eagles. Reclamation would continue to manage its future activities to avoid impacts on bald eagles regardless of potential future changes in the status of the bald eagle under the ESA.

Potential effects from reopening the state airstrip are not considered in the above conclusion for the following reasons. Re-opening of the state airstrip for fly-in day use and overnight camping could cause disturbances to bald eagles and bald eagle prey from low level flights and human activity at the recreation site. Reopening of the airstrip would occur in phases, be subject to monitoring, and be addressed under a separate NEPA action as described in Section 2.3.2. Bald eagle activity would be monitored both before and after opening to

determine if disturbance or other adverse effects to bald eagles is occurring from fly-in uses. If so, the site may be developed for boat in or hike-in use only.

Canada Lynx. Lynx are listed as a threatened species and may rarely use more remote Reclamation lands, especially during periods of low snowshoe hare numbers. The North Fork Payette River WMA may provide the best potential lynx habitat on Reclamation lands. However, WestRock (2000) states that lynx are not known to be present in their project area and that the nearest recent lynx records are from about 20 miles to the east of Lake Cascade. Only very minor changes would occur in some WMA and C/OS lands generally located near existing recreation sites. Management and wildlife habitat conditions of the North Fork Payette River WMA would either not change under the No Action Alternative or would improve if AEs are changed. Therefore, implementation of the No Action Alternative may affect, but is not likely to adversely affect, the lynx on Reclamation lands. The general projected increase in recreation visitation and cabin and second home development around Lake Cascade would result in more people, less suitable habitat, and less abundant alternate prey for the lynx on private lands around Lake Cascade, further reducing the likelihood that lynx would use the area.

Gray Wolf. The Coordination Act Report (Appendix B) notes that winter recreation, particularly snowmobiling, has been identified as a threat to gray wolves because of disturbance and altered snow conditions. Several components of the RMP facilitate snowmobile use of USFS lands west of Lake Cascade. FWS is concerned that snowmobilers using Reclamation parking facilities may use adjoining lands for snowmobiling, and potentially disturb wolves during the mating and early denning seasons on adjacent public lands. FWS recognizes that the role of Reclamation in regards to wolves on non-Reclamation lands is minor compared with the other agencies who administer lands on which habitat for these species occurs. Therefore, implementation of the No Action Alternative may affect but is not likely to adversely affect the wolf.

Cumulative Impacts

As noted, RMP actions may affect but are not likely to adversely affect bald eagles and lynx. There would be no impacts on either of these species from the TMDL process. The WestRock (2000) plan stated that development of the resort would likely impact two bald eagle nests, and would likely have no direct effects on lynx. FWS has not issued and documents rebutting or concurring on these conclusions (D. Mackey, Wildlife Biologist, USFWS, Boise, ID, August 7, 2000). Therefore, no further conclusions regarding WestRock can be drawn.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

The expected impacts and affects determination would be the same as described for the No Action Alternative.

Several measures that are either included or would be allowed under this RMP

alternative have the potential for indirectly impacting bald eagles by increasing levels of human disturbance. The potential for adverse effects on eagles from specific actions under the Preferred Alternative are discussed below along with measures that would be implemented to avoid or minimize impacts. All of the bald eagle nests located on land administered by Reclamation and on adjacent lands will be monitored for adverse impacts as Reclamation implements the proposed projects under the RMP, with specific interest in the Gold Fork and North Fork nests, and those on the west side of Lake Cascade.

One of the actions included in the Preferred Alternative and Alternative C is conversion of several C/OS areas on the west side to the Recreation land use status to allow construction of pedestrian trails as funding allows. About 0.5 miles of these trails would be located within the primary protection zone of the Buttercup nest and 0.65 miles of trails would be within the nest's secondary protection zone. All new trails would be located to the east of the existing West Mountain road, meaning that the road, with its existing traffic, would be located between the trails and the Buttercup and Poison Creek nests. Other current facilities and ongoing activities within these zones include private residences, three Reclamation campgrounds, camping, and motorized boating. In order to avoid impacts to bald eagles and protect other resource values, Reclamation is fully committed to closing current and future trails seasonally if needed.

Habitat improvement plans (HIPs), intended to benefit natural resources, will be updated under the Preferred Alternative and Alternatives B and C. Implementation of HIPs will continue under all of the alternatives. Specific types of actions that have been included in HIPs developed to date include tree and shrub planting; fence construction, maintenance, and removal; wetland development to improve water quality; and placement of nest and roost boxes and platforms for a variety of raptors, songbirds, waterfowl, and bats. All HIPs would be reviewed to assure that there would be no adverse effects on eagles. At worst, HIPs would be neutral toward bald eagles.

A new marina at West Mountain would be allowed as a second priority to the marina at Cascade (Van Wyck) under the Preferred Alternative and Alternative C. This marina would be located within the secondary protection zone for the Buttercup nest. Specific plans related to future marina construction at West Mountain would be addressed in a separate NEPA document, as would any other changes in west side facilities that are not addressed in the current RPM/EA.

Vehicles and trailers associated with snowmobiling currently are parked along West Mountain Road within the primary and secondary protection zones for the Buttercup nest. However, the county does not plow very far off of the existing roadway. Therefore, parked vehicles and trailers often partially block traffic in one direction. The RMP proposal under the Preferred Alternative and Alternatives B and C is to work with the County to widen the plowing along the road so that parking does not obstruct traffic. Additional plowing would be to the reservoir side of the road. Late-winter

snowmobiling on West Mountain (off of Reclamation land) could conflict with early nesting activities. Reclamation will cooperate with the USFS to try to avoid impacts on bald eagles and other protected species from any future snowmobile trail development on West Mountain. However, there are also private and state lands involved so Reclamation's authority is very limited. Additionally, Reclamation would be a cooperator in any inter-agency (USFS, state, etc.) effort to manage snowmobiles to protect ESA species habitat in addition to trail development activities.

Non-motorized boating, mostly canoeing, currently occurs within the upper end of the Gold Fork arm and in the North Fork arm. The designated non-motorized boating area in the Gold Fork arm is located over 2 miles from the Gold Fork nest, well beyond the secondary nest protection zone. Motorized boating currently occurs on a regular basis in both the primary and secondary protection zones for the Gold Fork nest. The North Fork nest is located on the east side of the reservoir about mid-way along the 4.5 mile-long designated non-motorized boating area. The Preferred Alternative and Alternative C include development of non-motorized boat launch sites in both of these arms of the reservoir. The Gold Fork launch site would be located over 2 miles from the Gold Fork nest, well beyond the secondary protection zone. The location of the North Fork launch site has not been determined at this time. However, Reclamation would locate it at least 1/2 mile outside of the secondary protection zone for the North Fork nest and assure that there is no direct line–of-site between the nest and the launch site.

In conclusion, proposed RMP facilities and activities that would be implemented under the Preferred Alternative would avoid or minimize potential impacts on bald eagles because of one or more factors including the following:

- They would occur outside of bald eagle nest protection zones,
- They would be buffered by other ongoing activities,
- They would represent a continuation of ongoing activities that apparently are not a problem for bald eagles at Lake Cascade,
- Current and future trails would be closed as needed to avoid impacts, and
- Future design and placement of facilities would carefully consider and avoid potential impacts on bald eagles.

Therefore, implementation of any of the Preferred Alternative may affect, but is not likely to adversely affect, bald eagles at Lake Cascade. Reclamation would continue to manage its future activities to avoid impacts on bald eagles regardless of potential future changes in the status of the bald eagle under the ESA. Potential reopening of the state airstrip would be handled as described for the No Action Alternative.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

Alternative B: Limited Recreation Development/Increase Natural Resource Protection Emphasis

The expected impacts and affects determination would be the same as described for the Preferred Alternative.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

The expected impacts and affects determination would be the same as described for the Preferred Alternative.

Cumulative Impacts

The potential for cumulative impacts would be the same as described for the No Action Alternative.

3.7 Aquatic Biology

3.7.1 Affected Environment

Lake Cascade is one of three Reclamation impoundments in the Payette River Basin and was formed by damming the North Fork Payette River. The reservoir provides a mixed fishery (both cold water and warm water species) and is one of the most heavily fished waters in the state (IDFG 1996). In addition to recreational benefits, the reservoir fishery is also the main source of prey for eagles, ospreys, otters, and other wildlife discussed in Section 3.5. Associated with the reservoir are the fisheries resources of its four main tributaries, the North Fork Payette River, the Lake Fork River, Gold Fork Creek, and Willow Creek (see Map 1-1). These tributaries, along with numerous smaller ones, also provide recreational fishing opportunities as well as forage for local wildlife.

Reservoir Fishery

Lake Cascade is a heavily used mixed fishery. The primary species found in the reservoir are listed on Table 3.7-1.

Table 3.7-1. Game and Non-Game Fish Species Found in Lake Cascade

Common Name	Scientific Name
Cold Water Game Species	
Hatchery rainbow trout	Oncorhynchus mykiss
redband trout	Oncorhynchus mykiss gairdneri
kokanee salmon	Oncorhynchus nerka kennerlyi
coho salmon (land locked)	Oncorhynchus kisutch
mountain whitefish	*Prosopium williamsoni*
Warm Water Game Species	
smallmouth bass	*Micropterus dolomieui*
black crappie	*Pomoxis nigromaculatus*
tiger muskie (sterile northern pike hybrid with muskellunge)	*Esox lucius x E. Masquinongy*
yellow perch	*Perca flavenscens*
channel catfish	*Ictalurus punctatus*
black bullhead	*Amerurus melas*
brown bullhead	*Amerurus nebulosus*
Pumpkinseed	*Lepomis gibbosus*
Non-Game Fish	
Northern pikeminnow (formerly called northern squawfish)	*Ptychocheilus oregonensis*
large-scale sucker	*Catostomidae macrocheilus*

Source: IDFG 2000, personal communication with Paul Jansen

Trout and salmon populations are supplemented through stocking programs by IDFG (pers. comm. D. Anderson, Fishery Manager, IDFG, McCall, Idaho, April 26, 1999). At one time, the reservoir had some of the most productive yellow perch (*Perca flavescens*) fishing in the state, with perch comprising over 75 percent of the total annual catch in the reservoir. Since 1996, however, for reasons not yet completely understood, perch have almost disappeared from the reservoir. IDFG is presently conducting ongoing studies to determine the cause of the population decline, and the preliminary conclusion is that predation by northern pikeminnows is the cause (pers. comm. P. Jansen, Biologist, IDFG, McCall, Idaho, June 4, 2001).

Lake Cascade is open to fishing all year. Sport fishing activity focuses primarily on rainbow trout during spring and fall. Summer and winter fishing formerly focused on perch. However, since perch populations have declined, summer fishing is now focused on other warm water species. Winter fishing opportunities on the reservoir are limited since the decline of the perch fishery.

Spawning conditions for warm water game and non-game fish in the reservoir are generally good. Shoreline gravels, rocks, and vegetation usually remain inundated long enough for spawning, egg development, and fry emergence to occur. The cold water species and some non-game species, such as the northern pikeminnow, primarily use the tributaries for spawning.

Lake Cascade has the potential to provide good rearing habitat for both warm and cold water fish. The reservoir inundates a broad, flat valley and has relatively flat underwater topography. The existing shallow profile of the reservoir is exaggerated by periodic drawdowns. Even with annual fluctuations, the large, shallow shoreline zone is productive for benthic organisms and some aquatic vegetation. However, this high productivity, coupled with the shallow reservoir profile and watershed-wide nutrient inputs, has resulted in periodic poor water quality conditions in the reservoir. The primary hazards to fish as a result of the poor water quality are low dissolved oxygen levels during winter and summer months, and elevated water temperatures in the late summer. Section 3.2, *Water Quality and Contaminants*, has a complete description of these issues.

Low oxygen levels and elevated temperatures are believed to be the contributing factors to fish kills that have periodically occurred in the reservoir. These fish kills have included rainbow trout, coho salmon, and yellow perch. The most recent substantial fish kill occurred in 1994, when a large number of juvenile yellow perch died. Since then, no strong recruitment of yellow perch has been documented (pers. comm. D. Anderson, Fishery Manager, Idaho Department of Fish and Game, McCall, Idaho, April 26, 1999). It is not known if water quality problems are the direct cause of these fish kills. IDFG suspects that, in some instances, this may be the case. However, it could be that poor water quality conditions may stress fish and cause them to become extremely susceptible to disease and parasites (pers. comm. D. Anderson, Fishery Manager, Idaho Department of Fish and Game, McCall, Idaho, April 26, 1999). IDFG in cooperation with Reclamation and Idaho Power Company are currently investigating the causes of these fish kills.

Space limitations as a result of the reservoir drawdowns are also a concern for the reservoir fishery. Reservoir drawdowns result in a limited area for fish, limiting refuge habitat from extreme conditions. Low reservoir levels and low late summer flows in the main tributaries can limit fish access to refuge areas in these tributaries, where water is more highly oxygenated and possibly cooler (pers. comm., T. Dombrowski, IDEQ, Cascade, Idaho, April 23, 1999; pers. comm. D. Anderson, Fishery Manager, IDFG, McCall, Idaho, April 26, 1999). Also, because the average depth of the reservoir is only about 25 feet at full pool, low reservoir levels can result in depths of only a few feet throughout much of the reservoir. This limits the amount of cool water habitat in late summer and can result in areas of stagnant water with low oxygen levels, particularly in the southern portion of the reservoir (pers. comm., T. Dombrowski, IDEQ, Cascade, Idaho, April 23, 1999).

Currently, Reclamation maintains a minimum pool of 300,000 acre-feet during the winter under an administrative agreement with the IDEQ and IDFG (pers. comm., T. Dombrowski, IDEQ, Cascade, Idaho, April 23, 1999). This minimum pool level was developed in response to IDFG research results and is intended to minimize winter oxygen problems (D. Anderson, Fishery Manager, IDFG, McCall, Idaho, April 26, 1999). A minimum pool level of 46,662 acre-feet is required during the remaining portions of the year; however, Reclamation has maintained minimum pool levels during the summer much greater than this during the past few years (pers. comm., T. Dombrowski, IDEQ, Cascade, Idaho, April 23, 1999).

Tributary Fishery

Like Lake Cascade, the tributaries provide recreational fishing opportunities, forage for wildlife, and important spawning and refuge habitat for the cold water species of the reservoir. Species from the reservoir using the tributaries for rearing and spawning include rainbow trout, coho and kokanee salmon, and northern pikeminnow. Warm water reservoir species may also occasionally be found in the tributaries, but their use is probably limited. The main tributaries also have resident populations of cold water species, which include rainbow trout, mountain whitefish (*Prosopium williamsoni*), and northern pikeminnow. It is also possible that one or more of these tributaries supports native populations of redband trout (a subspecies of rainbow trout), but this has yet to be verified (D. Anderson, Fishery Manager, IDFG, McCall, Idaho, April 26, 1999).

Unlike the reservoir, the major tributaries are closed to fishing during the spring and fall spawning period upstream of slack water reservoir areas. This closure protects spawning fish and helps to maximize production from the tributaries.

The primary ecological problems associated with the reservoir tributaries are fish access to spawning and refuge habitat, water quality, and water quantity. Fish access is limited or blocked by irrigation diversions and road culverts on many of the tributaries. Water quality is impacted by forest and agricultural drainage, urban runoff, onsite waste disposal (septic tanks), and direct treated wastewater discharges from the McCall wastewater treatment plant and the fish hatchery. Water quantity is also impacted through agricultural diversions, since no minimum flows are currently established in any of the tributaries.

The Gold Fork River has the greatest potential for wild fish production in the Lake Cascade drainage. However, fish access to most of this river is blocked by an irrigation diversion located 4 miles upstream of the reservoir. Habitat in small tributary streams is critical, especially when the reservoir water quality conditions become poor in late summer. Several tributaries of special habitat importance include the following:

- Willow Creek (at the south end)
- Hurd Creek
- French Creek

Table 3.7-2. IDFG General Management Objectives for Waters in the Payette River Basin

Objective	Program
Provide a diversity of fishing opportunities within the Payette River drainage.	Zone the stream areas to concentrate hatchery catchable stocking in locations where the highest return to creel would occur.
	Manage for wild trout where habitat and fish populations would sustain an acceptable fishery.
	Manage for increased catch rates and size in selected stream reaches using quality trout regulations.
	Stock appropriate strains of trout in natural production areas to better use the rearing capacity and provide larger and more desirable fish.
	Improve land use management by working with Federal, state, and private landowners on proper land uses to increase soil stability in the drainage.
Assess the potential for securing stream maintenance flows to protect fisheries on the North Fork Payette River, Lake Fork Creek, and other tributaries.	Gather needed biological and economic information for the Idaho Water Resource Board to justify pursuing stream maintenance flows for fish and wildlife protection.
Maintain riparian and floodplain values for fish and public access.	Work with Valley County and landowners to provide public access to the North Fork Payette River.

Source: IDFG 1996

3.7.2 Environmental Consequences

Assessment Categories

This section describes the benefits and potential impacts that the general actions of the alternatives may have on the fishery resources of Lake Cascade. Most all of the actions are not directed specifically at fishery resources (for example, improving a specific portion of known spawning habitat). Instead, they involve indirect improvements such as erosion control structures and BMP procedures for the construction of facilities. The most direct actions that would affect fish are those relating to water quality and riparian vegetation. These are discussed more fully in Sections 3.3 and 3.5, respectively.

As stated in Section 3.7.1, *Affected Environment*, water quality is one of the two primary factors affecting the fish populations in the reservoir and tributaries, with other being reservoir pool levels. The RMP does not address reservoir pool levels, because that issue falls under the operational

jurisdictions and contractual agreements. Issues regarding water quality improvement are prevalent throughout many of the actions listed in the alternatives, i.e., protecting and enhancing water quality is the primary goal for improving the fishery (Appendix A, Goal 1.4, Object 1.4.1).

Natural Resource, Habitat and Cultural Resource Protection and Enhancement

General habitat improvement and enhancement objectives related to fisheries were developed in the 1991 RMP. Subsequent to the 1991 RMP, HIPs were developed and implementation begun for the six WMAs. Continued implementation would occur under all alternatives. Habitat improvement would occur in two of the C/OS areas (Crown Point and Boulder Creek) under all of the action alternatives. These objectives mostly focus on restoring or maintaining riparian and shoreline habitat of the tributaries and the reservoir. This would be accomplished primarily through the following methods:

- Native vegetation plantings and wetland enhancement
- Restoration of disturbed riparian and shoreline areas
- Fencing or cattle exclusion

The most notable benefits derived from these actions would be the reduction of erosion sediment input to the reservoir and tributaries and the maintenance or creation of riparian and shoreline habitat and wetlands. As stated in Section 3.7.1, *Affected Environment*, one of the primary concerns for aquatic resources in Lake Cascade is water quality. Enhanced vegetation cover along riparian and shoreline areas and wetlands would provide the following specific benefits:

- A reduction in erosion and sediment input to the reservoir and tributaries, resulting in improved water quality and cleaner spawning substrate. Vegetation along the riparian and shoreline areas would minimize erosion and wetlands would act as a sediment filter.
- Increase the potential for more woody debris input along stream corridors, which would enhance cover habitat and stream complexity.
- Increase food production in both the reservoir and streams. An increase in the food supply for aquatic insects would be expected to occur, along with an increase in terrestrial insect production.

The exclusion of cattle through fencing would minimize or eliminate the potential for near-water habitat destruction. These exclusions, in conjunction with native and other vegetation plantings, would also provide a long-term gradual improvement to habitat.

Water Quality, Surface Water Management, and Erosion Control

Three aspects of the alternatives are aimed directly at improving the water quality of reservoir. These include direct water quality improvement measures as they relate to agricultural and grazing

use around the reservoir and erosion control structures on and near the reservoir. Indirect measures are those that deal with no-wake zones and non-motorized boating zones, both which would limit shoreline erosion.

As stated, the alternatives propose to improve the water quality of the reservoir by addressing grazing near the shoreline areas. Under all alternatives, this could potentially be accomplished through the negotiation with landowners. To the extent this action is successful, it would minimize or eliminate shoreline erosion and nutrient input to the reservoir that is currently caused by cattle.

Relative to erosion control structures, the action alternatives propose assisting private landowners in obtaining the appropriate permits to construct structures in an effective way (including the modification of existing ones). These would include retaining walls and other similar landscape features. This individual application approach to erosion control would be on an as-needed and as-requested basis and differs from erosion control instituted under the habitat enhancement features using vegetation and wetlands on a selective basis. However, the benefits of reduced erosion and bank and slope stabilization would be similar to those discussed above as they relate to water quality and shoreline habitat improvement. Individually, corrective measures of spot erosion problems would probably not improve aquatic habitat conditions substantially. However, a programmatic approach to addressing ongoing spot erosion problems, as well as TMDLs, would cumulatively improve conditions throughout the reservoir and tributary areas.

The surface water management aspect of the alternatives focuses mostly on the creation or maintenance of no-wake zones in portions of the reservoir and the designation of specific non-motorized boating areas. No-wake zones and non-motorized zones are addressed by all alternatives, but each have varying extensions and exclusions for each (see Table 2.3-1). The primary benefit derived from these two actions would be to minimize shore erosion in areas that either currently experience or have the potential to experience erosion problems. As stated, erosion is one of the factors contributing to water quality problems of the reservoir.

Improved or Restricted Access

The improvement of access to the tributaries and portions of the reservoir has the potential to increase angling pressure, along with poaching and harvest violations, in the larger drainages. It is assumed that the improvement of existing trails and roads, or construction of new ones, would follow all appropriate BMPs for minimizing erosion problems during construction and use. Therefore, erosion issues related to trails and roads is not considered a potential impact to fisheries.

All of the alternatives have associated with them some improvement for boat access, including, but not limited to increased parking and extended boat ramps. Most notable are the improved recreational areas under all alternatives at West Mountain Campground, Boulder Creek Recreation Area, Crown Point Extension, and Van Wyck Park (see Table 2.3-1). These actions would result in higher boat traffic. Boats have the potential for hazardous fuel and oil spills through either normal operation or through accidents that could occur on the reservoir. Normal use spills (such as refueling and leaking engines) would not pose a substantial hazard to water quality or aquatic

- Poison (Rock) Creek
- Campbell Creek
- Van Wyck Creek

Willow, Hurd, and Rock creeks probably have the greatest potential for salmonid reproduction of all the west side tributaries. Spawning in all of these (with the exception of Willow Creek) is limited to near-mouth areas because of the steep stream gradient and poorly strewn substrate. Fish also have difficulty passing through some road culverts.

Fisheries Management Considerations

Lake Cascade and its tributaries have the potential to provide excellent recreational fishing opportunities for a variety of species. However, several factors currently limit this potential. The primary factor is water quality in the reservoir and the tributaries. To address this issue, Reclamation has successfully implemented a higher winter minimum pool that may have minimized or eliminated winter fish kills. Maintaining a higher winter pool has been possible because of recent wet years. Reclamation has recently maintained summer minimum pools above the 300,000 acre-feet administrative pool requirement (see Section 1.6, *Location and Background*, for an explanation of hydrologic issues). For the tributaries in the watershed, IDEQ has instituted a draft TMDL requirement that should result in a 37 percent reduction in nutrient loading to the streams, and eventually the reservoir, over a 5-year period (IDEQ 1998a).

Access to spawning areas may also be an important limiting factor for reservoir and tributary fisheries. Currently, none of the diversions on any of the tributaries have fish ladders (the North Fork Payette River is the only major tributary without diversions), and none are currently proposed. In addition to access problems, these diversions (except one) are not screened. Fish that otherwise would be recruited to the reservoir or lower portions of the tributaries may be lost into irrigation canals. To address this issue, IDFG has recently completed a pilot screening project on Mulholland ditch. If this proves successful and cost-effective, some irrigation districts have expressed interest in screening projects (D. Anderson, Fishery Manager, Idaho Department of Fish and Game, McCall, Idaho, April 26, 1999).

Flow in the tributaries and into the reservoir can compound water quality and access issues. As stated above, no minimum flows are required in the tributaries, and overland return flow can constitute the majority of the streamflows during late summer. Overland return flow quickly reaches ambient air temperature and collects large amounts of nutrients.

Only some of the above issues are under Reclamation's management authority. Addressing all of the issues would require coordination among IDFG, IDEQ, Reclamation, and private landowners throughout the basin. The IDFG's general management objectives for waters in the Payette River Basin, which apply to Lake Cascade and its main tributaries, are listed in Table 3.7-2.

resources, but would incrementally add to the water quality problems currently experienced in the reservoir. Accidents, on the other hand, have the potential to result in small isolated fish kills related to substantial fuel and oil spills that may result. The impacts on fish populations from accidents, however, would be negligible, as they would be expected to be extremely uncommon. Float plane access would continue under all alternatives, however, only the action alternatives have provisions for restricted access to some areas. Float planes also have the potential for fuel spills and accidents.

Improved Facilities, Encroachment, and Miscellaneous

For the fishery resource impact assessment, the improvement or construction of facilities under the alternatives can be divided into two categories. The first are those that would be constructed in a terrestrial environment, such as campsites and their associated parking facilities, and access roads, day use facilities, trails, and miscellaneous visitor amenities. The others would be those constructed in or near the reservoir such as fishing or boat docks and boat ramps, and day use swimming areas and platforms. All action alternatives have some construction BMPs associated with them. The most extensive are the expanded recreation facilities at West Mountain Campground, Boulder Creek Recreation Area, Crown Point Extension, and Van Wyck Park for all alternatives.

The terrestrial improvements under the Preferred Alternative would all be planned and constructed under appropriate BMPs (Chapter 5) that would minimize erosion potential, hazardous spills from construction facilities, and water quality issues relating to surface water runoff. The implementation and adherence to these BMPs under the No Action Alternative would avoid or minimize to the extent practicable any impacts to the aquatic resources of the RMP study area.

The only potential concern of the terrestrial improvements on the fishery resource is that angler use may increase throughout the area. This would apply to all alternatives. An increase in the number of anglers may result in increased poaching and harvest violations similar to those described above for improved access. The actual increase in recreational use is predicted to be about 20 percent over the next 10 years (See *Recreation*, Section 3.8). It can reasonably be assumed, however, that not all of this user increase would translate directly to an increase in angler pressure, only some lessor unknown portion. Given this, angler pressure would not be expected to substantially impact the reservoir or tributary fisheries.

The in- or near-water facilities under the No Action Alternative would also be constructed under existing BMPs. These BMPs would limit the impact of construction related activities. BMPs under the No Action Alternative would also limit the timing of the construction so as not to interfere with gamefish spawning. With the exception of boat ramps, all of the in-reservoir features (mostly private boat docks and piers) addressed in the alternatives provide in-reservoir fish habitat. These facilities are well-known to provide cover, shade, and ambush sites for predatory gamefish. The Preferred Alternative and Alternative C would not allow the construction of new private docks, but allow the construction of new community docks under a permit system. Alternative B would eliminate all private docks on the reservoir and replace them with community docks. The No Action Alternative would continue to permit individual docks, but encourage construction of community facilities. These actions could either reduce or maintain the amount of in-reservoir habitat these structures

currently provide. However, given the amount of surface area these features cover relative to the entire reservoir, the impact of eliminating or consolidating dock to the fishery would be negligible.

Boat ramps eliminate some near shore habitat. The alternatives indicate that some new boat ramps would be constructed in conjunction with new or renovated recreational areas, while some private boat ramps encroaching on Reclamation lands would be eliminated. The construction of new boat ramps would eliminate some nearshore reservoir habitat, although as with docks, their surface area, and thus impacts to fisheries would be negligible. The elimination of some other boat ramps would potentially enhance near-shore habitat, but these benefits would also be very small.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

The No Action Alternative does not propose any changes in operation or facility planning that would impact or benefit the fishery resource compared to existing conditions (that is, by following the management guidelines outlined in the 1991 RMP).

The primary actions under the No Action Alternative (1991 RMP) that relate to fisheries are as follows:

- Limited or monitored vehicle access to the drawdown area of the reservoir to minimize erosion and protect vegetation (improved water quality)
- No new docks in the C/OS areas (limited in-reservoir habitat)
- Prohibition of encroachment of unauthorized boat docks (protection of shore habitat)
- Trails constructed under BMPs (minimize erosion)
- Proposed facilities, in accordance with the 1991 RMP, constructed under BMPs (minimize erosion)

Currently, the most substantial issue for the fishery resource is water quality. The management practices listed under the No Action Alternative are addressing this issue. This includes active cooperation with IDEQ and IDFG in implementing the Cascade Reservoir Watershed Management Plan TMDL and the State Fishery Management Plan.

Cumulative Impacts

Cumulative impacts resulting from the proposed WestRock development include increased anglers on the reservoir and the tributaries, land disturbance, associated water quality issues, and flow reductions in several tributaries. IDFGs review of WestRock concluded that the potential increase in anglers could reduce the recreational fishing catch on the reservoir (Idaho Department of Water Resources [IDWR] 1999). They also concluded that land disturbances relative to the construction of the facilities may increase sediment input to the tributaries as well as reduce flows, as some facilities (mainly golf courses) would require water diversions. Increased sediment and reduced stream flows would both adversely affect the fishery.

The successful implementation of the Cascade Reservoir Watershed Management Plan would result in improved water quality in the reservoir, and thus the fishery would benefit. For a more complete discussion of the potential impacts of the Plan on future water quality of the reservoir, see Section 3.2, *Water Quality and Contaminants.*

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Management of the WMAs would continue the same as described under the No Action Alternative. The primary difference would be that the habitat improvement plans would be updated and emphasize wetland development to improve water quality. This would increase water quality, and thus improve fish habitat, above that of the No Action Alternative. In addition, habitat improvement plans would be developed for the Big Sage and Cabarton Areas. This would increase the land area around the reservoir subject to water quality improvement measures.

Water surface management (no-wake zones and non-motorized zones) and water quality measures would be more clearly established and better enforced compared to the No Action Alternative (see Table 2.3-1). The primary differences would be an increase in warnings and education for the no-wake zones, which may incrementally reduce shoreline erosion and improve water quality.

Erosion control issues would be somewhat different than under the Preferred Alternative compared to the No Action Alternative. The primary improvement would be a more comprehensive permitting process for private landscape features and a focus on allowing only those features that serve a public interest, primarily reducing erosion around the reservoir and along the tributaries. Where implemented, this would incrementally improve water quality and near shore habitat above current conditions.

Vehicle access to the drawdown area would be prohibited with a few exceptions. This would enhance the shoreline and near-shore upland vegetation currently disturbed and reduce the amount of erosion and sediment input to the reservoir.

Float plane use was not addressed in the 1991 RMP, but occurs on an infrequent basis. The Preferred Alternative would allow float planes in the main body of the reservoir, with taxing allowed throughout the reservoir except in the non-motorized areas. As stated above, float planes pose a hazardous spill potential that may incrementally reduce water quality, and on occasion, result in local fish kills.

Several non-motorized trails would be developed in various areas around the reservoirs (see Table 2.3-1). These trails would be constructed in accordance with BMPs and would not have a substantial impact on the water quality of the reservoir. The trails, however, would allow more shoreline access to a greater portion of the reservoir and some of the tributaries. As stated above, this may increase the amount of poaching and harvest violations on fish. The impact would be greater in the tributaries, as these areas would be more prone to poaching as spawning salmonids would be more concentrated.

The Preferred Alternative would prohibit the construction of new private docks and focus on permitting community docks in an attempt to either maintain or reduce the number of structures on the reservoir. As stated above, docks can provide quality habitat for gamefish in reservoirs. A reduction in docks would reduce the amount of in-reservoir habitat by a very small amount. However, given the small amount of surface area docks cover relative to the entire reservoir, a reduction in them would have only a negligible effect on the overall habitat.

Under the Preferred Alternative, relatively substantial development would occur at several places, most notably, West Mountain Campground, Boulder Creek Recreation Area, Crown Point Extension, and Van Wyck Park (see Table 2.3-1). The developments (such as parking and camping) would be constructed under BMPs that minimize impacts to water quality. The primary impact to fisheries, however, would be that these improved or new facilities are expected to increase visitor use by about 20 percent over the next 10 years. New facilities both attract increased use and accommodate higher demand as populations and general recreation use grows. This could potentially lead to an increase in fishing pressure and potential poaching and harvest violation problems. However, because not all of the visitor increase would be expected to result directly into increased angling (only some unknown portion) it is unlikely that this level of angler use would substantially impact the fishery.

Mitigation and Residual Impacts

No impacts were large enough to warrant mitigation measures. Minor residual impacts are those described above.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL process would be the same as those of the No Action Alternative. Because Alternative B has the potential to increase water quality and reduce erosion compared to the No Action Alternative, the cumulative impacts may be somewhat less than those stated under the No Action Alternative.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

Few differences exist between the Preferred Alternative and Alternative B relative to actions that would impact the fishery resources of the RMP study area. Water quality would continue to be improved through WMA management. In-reservoir habitat would be reduced somewhat through the reduction in docks, although not to a substantial extent. Shoreline habitat would be improved through limited or prohibited access, and landscape or erosion control features would be more thoroughly monitored and permitted. The recreational development of the area would result in about the same increase in visitors as the Preferred Alternative, but this is not expected to impact the fishery resource.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL process would be the same as those of the No Action Alternative. The cumulative impacts on fisheries resources for Alternative B would be the same as those described under the No Action Alternative.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Acres of land that would be converted to recreation uses would be the same as the No Action Alternative. Fishery impacts would be the same as Alternative B except that more recreation facilities would result in more erosion and poor quality runoff.

Cumulative Impacts

Cumulative impacts from WestRock and the TMDL process would be the same as those of the No Action Alternative. The cumulative impacts of RMP actions on fisheries resources for Alternative C would essentially be the same as those described under the No Action Alternative.

3.8 Recreation

3.8.1 Affected Environment

Recreation use at Lake Cascade includes many forms including land-, water-, and snow-based activities. Certain activities occur at a single location while others are more widely dispersed. These activities involve both day and overnight use at developed recreation facilities, as well as undeveloped dispersed sites or use areas.

Reclamation, USFS, IDPR, IDFG, City of Cascade, City of Donnelly, YMCA, 4-H Club, various church camps, the Southwest Idaho Senior Citizens Recreation Association (SISCRA), and many private sector enterprises currently provide the diverse recreation opportunities available in the Lake Cascade area. The IDPR operates all of the Reclamation recreational facilities on Lake Cascade. The Reclamation/IDPR management agreement requires that the IDPR must comply with

Reclamation's *Lake Cascade Resource Management Plan* (1991), or any subsequent updates to this plan.

Recreation Activities and Use Levels

Results from a questionnaire conducted during the summer of 1999 reveal that the most common visitor activities at Lake Cascade are resting and relaxing (79 percent of visitors), RV camping (67 percent), tent camping (44 percent), observing wildlife (44 percent), fishing from a boat (43 percent), swimming (42 percent) and fishing from shore (41 percent). While these responses reflect common activities, visitors also indicated their primary activity while on their trip. These primary activities include rest and relaxation (41 percent), RV camping (17 percent), and fishing from a boat (12 percent) (EDAW and IDPR 1999). Since rest and relaxation is not mutually exclusive to these other activities, it can be assumed that RV camping and fishing from a boat represent the primary activities for visitors to the reservoir.

Aside from these specific activities, several primary general recreation experiences are provided at Lake Cascade. Existing recreation facilities provide for the most common and popular experience and can be generalized as a developed recreation experience. This visitor experience is provided at many campgrounds, day use areas, and public boating facilities. Also popular is the undeveloped or dispersed recreation experience that can be found on and adjacent to the reservoir. This includes undeveloped camping or day use areas that provide a more primitive experience with few, if any facilities. Two additional recreation experiences include motorized and non-motorized boating. Currently, visitors enjoy a non-motorized boating experience in the upper ends of several arms of the reservoir, while the motorized boating experience can be enjoyed in the remaining areas. Non-motorized trail experiences are also becoming more popular with visitors, particularly along the old railroad grade in the Crown Point Extension area. Visitors may also enjoy non-motorized and motorized trail experience in various areas off of Reclamation lands (that is, the Payette National Forest) but near the reservoir.

Approximately 86 percent of Lake Cascade visitors are from the Boise metropolitan area. Because of the travel distance, most visitors stay overnight in the area while on their trip. The average length of stay for campers (who also participate in other activities) in 1999 was 4.1 days. Many visitors stay in area campgrounds; however, some visitors stay in more developed lodging facilities in Cascade, Donnelly, or surrounding areas.

Additional information about campers at Lake Cascade was obtained in a 1999 questionnaire conducted at six IDPR-managed campgrounds (EDAW and IDPR 1999). These results provide a current snapshot of visitor perceptions and attitudes at Lake Cascade. Most campers have been coming to the area for many years; the average year for their first visit is 1981 (19 years). Campers tend to come more than once a year, averaging 2.3 visits per year. Most campers stay on or near the reservoir. About one-third (31 percent) of visitors had been out on the reservoir in a boat during the day they were contacted, while about two-thirds (69 percent) had not.

Group use is popular at Lake Cascade because many other recreation areas in the region cannot accommodate large parties. Groups ranged in size from 20 to 300 people, although 100 to 200 is most common. Group visitors were affiliated with many organizations and came from all parts of Idaho and occasionally from neighboring states. In addition, several groups or organizations have their own facilities at Lake Cascade, including SISCRA, 4-H Club, YMCA, and South Idaho Christian Mission Society (SICMS [located on USFS land]).

The greatest concentration of recreation use occurs at the southern and northern ends of the reservoir where most IDPR and USFS campgrounds and day use areas and the Donnelly City Park are located. In the northern portion of the reservoir, the arms are also surrounded by residential development with numerous private boat docks.

Data on camper's perceptions of the existing facilities show that most campers contacted feel that the current number of facilities (such as boat ramps and campgrounds) at the reservoir is about right. Despite the high facility occupancy levels observed in recent years, there appears to be limited support by campers for construction of new recreation facilities at this time. While there may be limited support for new facilities by campers, area boaters see a strong need for a new public boat marina(s) at Lake Cascade.

Overall, visitors contacted at Lake Cascade perceived relatively little crowding. In general, campers feel slightly to moderately crowded while visiting the area, while boaters on the reservoir appear to not perceive any substantial crowding at this time.

It is estimated that 330,000 people visit Lake Cascade during a typical year, and nearly 86 percent are residents of the Boise metropolitan area (Ada or Canyon counties) (EDAW and IDPR 1999). The Boise area is one of the fastest growing areas in the state and is projected to experience a 20 percent increase in population by 2010 (Ada County Community Planning Association 2000). Assuming that these new residents would participate in recreation activities similar to those of current residents, it can be estimated that visitation at Lake Cascade would increase by approximately the same amount. Thus, visitation at Lake Cascade is estimated to increase by 20 percent to approximately 396,000 annual visitors by 2010.

Recreation Facilities

Developed recreation facilities are provided at numerous locations around Lake Cascade by IDPR, USFS, and other municipal, private or religious organizations. The cities of Donnelly and Cascade and private or religious organizations lease land from either Reclamation or the USFS. An inventory of recreation facilities at Lake Cascade is provided in Table 3.8-1.

Public use at Lake Cascade is greatly enhanced by a substantial amount of public access to the water via public and group boat launches and docks. Approximately 150 floating docks (or dock segments) and 30 boat ramp lanes are located at public or organizational recreation sites on the reservoir. Most of the public boat launches are located along the eastern shoreline however, a 2-lane boat launch was recently added to the Buttercup facility which is located on the western

shoreline. Additionally, one floating pump-out waste platform is located on the south end of the reservoir for use by boaters. Also, public docks are available for short-term loading and unloading at various points around the

Table 3.8-1 Existing Recreation Facilities at Lake Cascade

	Idaho Department of Parks and Recreation (IDPR)												U. S. Bureau of Reclamation Leases								U.S. Forest Service						
	Buttercup	Blue Heron	Snow Bank	Cabarton	Crown Point	Curlew	Poison Creek	Sugarloaf	Van Wyck Park	Huckleberry	West Mountain	Big Sage	Boulder Creek	Donnelly City Park	4-H Club Camp	Osprey Point	SISCRA	Cascade Golf Course	YMCA Camp	Amanita	Campbell Creek	French Creek	Rainbow Point	Tamarack Falls	SICMS Church Camp (USFS)	Total
Acreage	6	9	2	1	30	3	20	15	26	12	12	24	23	40	60	20	60	50	55	4	2	49	11	5	65	603
Access and Parking																										
Road Access (Paved/Dirt)	P/D	P	P	P	P	P/D	P/D	P	P	P/D	P/D	P	P	P	P/D	P/D	P/D	P	P	P/D	P/D	P/D	P/D	P/D	P/D	
Interior Circulation	P	P	P	P	P	D	P	P	P/D	P	P/D	D	P/D	D	D	D	D	D	D	D	P	D	D	D	D	
Car Parking Spaces	10	23	25	9	6	10	22	23	40				13	25	30	25	25	25			20			25	20	376
Boat Trailer/Car Parking	20	22			11		24	27	20				10	10			40				30	12	15		8	249
Boat Ramps (lanes)	2	2					2	2	2				1	2			2				2	1	1			21
Courtesy Docks	*	*	*		*		*	*	*	*	*		*	*	*		*				*	*	*		*	
Fishing/Swimming Docks							*							*	*						*				*	
Day Use Areas and Facilities																										
Picnic Sites - Single Units		14	18	10			17	6					15	9	20		6							4	3	122
Picnic Sites - Double Units																										0
Group Picnic Shelters							1							1	1		1									4
Dining/Recreation Halls															2	1	1								1	5

Table 3.8-1 Existing Recreation Facilities at Lake Cascade

	Idaho Department of Parks and Recreation (IDPR)														U. S. Bureau of Reclamation Leases						U.S. Forest Service						
	Buttercup	Blue Heron	Snow Bank	Cabarton	Crown Point	Curlew	Poison Creek	Sugarloaf	Van Wyck Park	Huckleberry	West Mountain	Big Sage	Boulder Creek	Donnelly City Park	4-H Club Camp	Osprey Point	SISCRA	Cascade Golf Course	YMCA Camp	Amanita	Campbell Creek	French Creek	Rainbow Point	Tamarack Falls	SICMS Church Camp (USFS)	Total
Acreage	6	9	2	1	30	3	20	15	26	12	12	24	23	40	60	20	60	50	55	4	2	49	11	5	65	603
Beaches at High Water		*	*	*	*			*						*	*											
Day Use Areas and Facilities																										
Trails/Paths																*	*							*		
Group Campfire Areas																*									*	
Archery/Volleyball Areas															*	*									*	
Informal/Interpretation															*		*							*		
Overnight Use Areas and Facilities																										
Campsites - Single Units	28	10			33		44	42	61	31	31	*		11			203			10		21	11		18	554
Campsites - Double Units																										0
Group Campsites		2	1	1		1	3										2									10
Tent Only Campsites						10																				10
Cabins															5	4									5	14
Support Facilities																										
Flush Restrooms, 1-Unit																		2							1	3

Table 3.8-1 Existing Recreation Facilities at Lake Cascade

	Idaho Department of Parks and Recreation (IDPR)														U. S. Bureau of Reclamation Leases						U.S. Forest Service						
	Buttercup	Blue Heron	Snow Bank	Cabarton	Crown Point	Curlew	Poison Creek	Sugarloaf	Van Wyck Park	Huckleberry	West Mountain	Big Sage	Boulder Creek	Donnelly City Park	4-H Club Camp	Osprey Point	SISCRA	Cascade Golf Course	YMCA Camp	Amanita	Campbell Creek	French Creek	Rainbow Point	Tamarack Falls	SICMS Church Camp (USFS)	Total
Acreage	6	9	2	1	30	3	20	15	26	12	12	24	23	40	60	20	60	50	55	4	2	49	11	5	65	603
Flush Restrooms, 2-Unit							3						1			2	1		1							8
Support Facilities																										
Flush Restrooms, 3-Unit									1																2	3
Flush Restrooms, 4-Unit											1				4		2									7
Flush Restrooms, 5-Unit																			4							4
Flush Restrooms, 6-Unit																										0
Flush Restrooms, 8-Unit																	2									2
Flush Restrooms, 10-Unit																										0
Vault Restrooms, 1-Unit						2	1		1					1												5
Vault Restrooms, 2-Unit	3	1			1		1	1	2	1		3	2							1	1	3	2	1		23
Vault Restrooms, 4-Unit		1	1	1	3			3			1															10
Vault Restrooms, 6-Unit																										0
Showers and Sinks															*		*	*							*	
Potable Water	*	*	*	*	*	*	*	*	*		*		*	*	*	*	*	*		*		*	*		*	

Table 3.8-1 Existing Recreation Facilities at Lake Cascade

	Idaho Department of Parks and Recreation (IDPR)													U. S. Bureau of Reclamation Leases							U.S. Forest Service					
	Buttercup	Blue Heron	Snow Bank	Cabarton	Crown Point	Curlew	Poison Creek	Sugarloaf	Van Wyck Park	Huckleberry	West Mountain	Big Sage	Boulder Creek	Donnelly City Park	4-H Club Camp	Osprey Point	SISCRA	Cascade Golf Course	YMCA Camp	Amanita	Campbell Creek	French Creek	Rainbow Point	Tamarack Falls	SICMS Church Camp (USFS)	Total
Acreage	6	9	2	1	30	3	20	15	26	12	12	24	23	40	60	20	60	50	55	4	2	49	11	5	65	603
Electrical Hookups																									*	
Support Facilities																										
Dump Stations									*		*						*									
Maint./Storage Facilities							*								*	*	*	*								
Miscellaneous																										
Disabled Persons Facilities	*	*	*	*	*			*	*	*	*				*	*	*							*		
Restaurant/Bar/Clubhouse																		*								
9-Hole Golf Course																		*								
Year Lease Expires														2006	2015	1990	2008	2012	2016						2007	

Source: Reclamation (1991); Reclamation (1999); EDAW (1999)

** Indicates existence of facility, number not relevant or known*

reservoir. Docks are found at IDPR sites that have boat launches and at Crown Point, West Mountain, and Buttercup recreation areas.

Public picnicking facilities are provided at eight locations including Donnelly City Park, Tamarack Falls, Blue Heron, Snow Bank, Cabarton, Poison Creek, Boulder Creek, and Sugarloaf recreation areas. These sites generally have picnic tables, grills, toilets, and water. Two public facilities (Poison Creek and Donnelly City Park) have group picnic day use shelters. These sites are used extensively; group sites in general appear to be in short supply in the region. Picnicking at Poison Creek is particularly attractive, as some of the tables are scattered within an aspen grove next to the water. The Blue Heron, Snow Bank, Cabarton, and Sugarloaf picnic sites are exposed to heavier winds and lack shade for day use visitors during hot days. However, they are the only picnic areas with beaches at high water. The lower use of existing day use picnicking facilities at Lake Cascade, compared to more heavily used camping and boat launch facilities, apparently is because of lower demand for developed picnicking sites, the type of experience provided at these sites, or the location of picnicking sites. At Blue Heron, 10 of the previous picnic sites were converted to overnight campsites over the last few years to meet the demand for camping facilities.

Campgrounds at Lake Cascade provide a spectrum of camping opportunities ranging from group reservation sites, cabins, yurts, and RV campgrounds, to more rustic tent-only camping with gravel access roads. Campgrounds are widely dispersed around the reservoir. As shown in Table 3.8-2, there are a total of 564 individual campsites at 16 locations around the reservoir.

Table 3.8-2. Campgrounds at Lake Cascade

Owner/Operator	Total Number of Camping Areas	Total Number of Campsites	Percent of Total
Reclamation/IDPR	11	308	55%
Reclamation/SISCRA	1	203	36%
Reclamation/City of Donnelly	1	11	2%
USFS	3	42	7%
Total	**16**	**564**	**100%**

Sources: EDAW 1999, IDPR 1999.

More than half (308, or 55 percent) of the campsites are operated by IDPR under an agreement with Reclamation. These are found in 11 recreation areas around the reservoir. More than one-third (203, or 36 percent) of the sites are located at one location (SISCRA), while the remaining four campgrounds make up nine percent of the total number of campgrounds. The IDPR campgrounds are typically well developed. In contrast, USFS campgrounds are smaller, less developed, and more heavily forested. All USFS campgrounds are located on the west side of the reservoir within

the Boise National Forest. The IDPR campgrounds are concentrated along the northwest and southeast shorelines.

The IDPR manages nine campgrounds at Lake Cascade. Big Sage, which provides dispersed camping opportunities with no facilities, is an undeveloped IDPR-managed site, as is the Van Wyck Extension area. IDPR-managed campsites per location range in size from 61 at Van Wyck Park to 10 at Blue Heron (formerly day use picnic sites). All nine developed sites to the northwest, except for Curlew, have paved roads and camping spurs with picnic tables and grills. Campsite spurs are generally spaced 40 to 80 feet apart with 50 feet being most common. Most of the campsite spurs were constructed many years ago and cannot accommodate new longer RVs. Some roadway turning areas are also tight for many of today's longer RVs.

Six of the nine IDPR-managed recreation sites can accommodate larger groups; however, formal group reservation sites are lacking. One of these newer sites, Osprey Point (former site leased to Boise State University and managed by IDPR), is a group reservation site only. This and other group areas have generally evolved out of necessity and in response to demand; they were not initially planned as group areas. As a result, they are not necessarily in the best locations and do not adequately buffer groups from nearby individual campsites.

In the city of Cascade, a nine-hole public golf course with clubhouse, restaurant, and bar facility is leased to the City of Cascade by Reclamation. The facility is operated by a concessionaire. The facility is located along the southeastern shoreline south of Van Wyck Park.

During the late 1960s, the Idaho State Division of Aeronautics constructed an unpaved airstrip on the east shore of the reservoir south of Arrowhead Point. For several years, this airstrip was operated and maintained by the Division of Aeronautics and used by private pilots for recreational fly-ins (day use trips and short-term overnight camping). In 1972, a dispute arose between the AE owner and the Division of Aeronautics that resulted in the closure of the airstrip, which remains in effect today. There continues to be a limited amount of public support for reopening this airstrip.

No formal hiking or mountain biking trails, or designated areas for off-road vehicles, are provided at Lake Cascade, although both have been considered in the past. Minor trails exist within established recreation sites, but no continuous shoreline trail exists. Use of an abandoned railroad right-of-way in the proposed Crown Point extension has been gradually increasing in the past several years.

3.8.2 Environmental Consequences

This section discusses the expected positive and adverse impacts of the RMP alternatives on recreation resources. A general discussion of these potential impacts in each of five assessment categories is presented below, followed by a more detailed discussion of impacts under each of the four alternatives.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

The degree of proposed native vegetation protection and enhancement varies by location; however, these actions would have only a limited impact on public recreation. Proposed increased wetlands protection or development in several areas, specifically Crown Point and Mallard Bay, would limit potential recreation development and access under the Preferred Alternative and Alternatives B and C. The proposed WMA designation on Sugarloaf Island and continued emphasis on native vegetation would also limit recreational access under all of the alternatives. On a reservoir-wide basis, vehicular access to the shoreline would be more limited under the Preferred Alternative and Alternatives B and C. Although these actions would potentially have an adverse impact on recreation, the protection and enhancement of native vegetation in the area would also enhance the overall visitor experience.

Overall, a healthy fishery would enhance recreation at Lake Cascade. Several actions, however, would be needed to achieve this goal. Looking at these specific proposed actions, many of them related to native fish and wildlife protection and enhancement would have an adverse impact on public recreation use and opportunities. Under the Preferred Alternative and Alternatives B and C, existing or proposed trail corridors would be subject to seasonal or permanent closures that would limit recreational use. One action under all of the alternatives that would have both positive and adverse impacts on recreation would be the enforcement of "no-wake zones" established in part to protect fish and wildlife and habitat. While enforcement of these zones would limit some recreational use, warnings issued to violators would serve as a way to educate the public on issues related to native fish and wildlife. Enforcement of no-wake zones would enhance the experience for users who prefer non-motorized activities. The provision of interpretive facilities (trails, kiosks, and viewing areas) related to wildlife protection would increase recreational opportunities as well as educate visitors on wildlife values under all of the alternatives.

Water Quality, Surface Water Management, and Erosion Control

The erosion control objectives of the RMP would involve activity restrictions, physical improvements, BMPs, administrative support, as well as monitoring followed by appropriate responses to address specific problems that are identified.

Erosion control efforts related to recreation focus on water-based or land-based limitations to recreation use. In most cases, these limitations would have an adverse impact on public recreation. In general, most of the "no-wake zones" on the reservoir would limit high-speed recreational boating and waterskiing in these zones, and would restrict these activities under all of the alternatives. These actions would have both positive and adverse impacts on the overall recreation experience provided in these areas. Limiting these activities through these actions would have an adverse impact on these high-speed users by limiting the areas available to them. However, there would be a positive impact on other users who would have a more enjoyable and safer experience with fewer conflicts. However, since these zones would be established to limit potential user

conflicts, these actions would also have a positive impact on the overall water-based recreation experience. Buoys placed along eroding shoreline areas would have a similar impact on recreation under the Preferred Alternative. No-wake zones would affect a very small percentage of the reservoir surface area.

Under the Preferred Alternative and Alternatives B and C, land-based erosion control actions would also have an adverse impact on recreation by restricting access to some shoreline areas, however, the eventual protection of these sites would have a positive impact on recreation. On a reservoir-wide basis, many areas would have limited vehicular access to the shoreline in order to control erosion under the Preferred Alternative and Alternatives B and C. This would have an adverse impact on shoreline access to many of the developed recreation sites that are already experiencing shoreline erosion problems.

Improved or Restricted Access

Potential actions related to public access involve either improving access, such as allowing additional trails, or restricting access to protect habitat or wildlife. Actions related to restricting access were also discussed above under *Native Fish and Wildlife Protection and Enhancement* and *Erosion Control*. Other actions that would result in less public access and an adverse impact on recreation under one or more of the alternatives include eliminating private docks (Alternative B), limiting snowmobile use in developed recreation areas (except along roads and designated routes) (Preferred Alternative and Alternatives B and C), limiting the use of float planes on portions of the reservoir (Preferred Alternative and Alternatives B and C), continued restrictions on off-road vehicle use (all alternatives), and continued management of areas of the reservoir based on motorized or non-motorized watercraft (all alternatives). Other users would perceive these restrictions (ORV/ATV limits and non-motorized boating areas) as beneficial to their recreation experience.

In contrast to these potential actions, several access-related actions would have a positive impact on public recreation. Under one or more of the alternatives, allowing boat-in access to areas for camping or day use (Preferred Alternative and Alternatives A and C), providing additional trails (for hiking, biking, or cross-country skiing) (all alternatives), and allowing for increased winter sports access (road plowing) (all alternatives) would all increase the recreational opportunities available to visitors.

Improved Facilities, Encroachment, and Miscellaneous

Many actions under one or more of the alternatives would improve recreation facilities and would have a positive impact on public recreation. Potential actions under all of the alternatives focus on the improvement, expansion, or construction of new recreation facilities associated with day use, overnight, or boating facilities. Most of these actions would result in improved opportunities for recreation and a higher quality recreation experience. However, adverse impacts associated with increased public recreation under all of the alternatives include the increased operations and maintenance costs associated with additional facility maintenance, trash removal, human waste

disposal, and law enforcement. Specific actions as they relate to alternatives, and a discussion of the more specific impacts of these actions on public recreation, is presented in more detail below. These actions have been divided into those that impact camping, day use, group facilities, boating, visitor education, and other miscellaneous opportunities.

Under one or more of the alternatives, several actions would improve public camping facilities. Examples include new public campgrounds (all alternatives), renovation of existing public campgrounds (Preferred Alternative and Alternatives B and C), and provision of new facilities such as restrooms, showers, and RV dump stations (all alternatives). Improvements to existing campgrounds include renovating campsite spurs to accommodate today's standards (i.e., larger RVs that are more common now than when most of these sites were designed and constructed). Other camping related actions would include the creation of boat-in or hike-in camping areas (Preferred Alternative and Alternatives A and C). Several alternatives would also allow for additional public day use facilities (all alternatives). These would include restrooms, parking areas, picnic facilities, swimming areas, a visitor center, and a group amphitheater. Group facilities would also be improved with the creation of group camping facilities (with group shelters) (all alternatives) or permanent group facilities that would include dormitories (Alternative C) or a lodge (Alternative C).

All of the alternatives would allow improved public boating facilities to be developed. These improvements would include one or more marinas and associated services, boat ramps, docks, breakwaters, mooring buoys, community docks, boat-in camping and day use areas, and non-motorized boat put-in and take-out areas.

Visitor education facility improvements being proposed under one or more of the alternatives would include interpretive facilities (such as trails, signs, and kiosks) (all alternatives), a visitor center (all alternatives), an amphitheater (Alternative C), roadside pullouts (all alternatives), and wildlife-related developments such as wildlife viewing areas (all alternatives).

Fish cleaning stations represent a recreation development not included in the above categories, but included under all of the alternatives.

Alternatives

The following section discusses the potential impacts of each of the four alternatives on recreation resources in the Lake Cascade area. This section addresses the relative magnitude of the impacts and provides a brief description of how the actions in each alternative would impact recreation.

Alternative A—No Action: Continuation of Existing Management Practices

This alternative would result in continued operation and management of recreation resources as they currently exist. All existing recreation sites and facilities would be operated at their current level of service. This alternative would also continue the policies and actions prescribed in the 1991 RMP. In general, these policies prescribe a substantial level of recreation development in the area that would have a positive impact on the visitor recreation experience and available opportunities.

However, rather than Reclamation paying for all recreation developments, they are required by Federal law to find managing partners to share in the design and construction costs and provide operation and maintenance of new and existing recreation facilities. Therefore, facilities that were included in the 1991 RMP, but that have not been constructed, would only be built if managing partners are involved, Reclamation funds are available, and demand warrants. For purposes of this analysis, it is assumed that these facilities would be constructed. But the reader must be aware of the cost-share requirements when reviewing this and other sections for all of the alternatives.

One of the actions planned in the 1991 RMP is no longer feasible, thus resulting in a negative impact on potential recreation. This action would have provided for the development of camping and day use facilities in the Mallard Bay area. However, recent wetland development in this area has made additional recreation development an inconsistent objective, thus actions under the Preferred Alternative would be implemented instead. No existing recreation activities or facilities would be affected by this change.

On a reservoir-wide basis, this alternative would maintain current recreation facilities and opportunities, with some exceptions. These exceptions would have a positive impact on recreation in terms of providing additional opportunities. Driftwood Point would be opened to boat-in access for day use and camping. Recreation areas along the west side of the reservoir would experience a moderate increase in facilities with the addition of a marina, additional parking areas, and the development of a trail system that would link the various areas. The former airstrip near Arrowhead Point could also be re-opened for fly-in day or overnight use under this alternative, pending successful negotiation with the easement owner. While this would have a positive impact on airplane-based recreation access, it would change the character for opportunities such as boat-in or hike-in camping or day use. Based on the failure of past negotiations, the likelihood of the airstrip reopening is extremely low.

This alternative would also result in moderate public recreation development at Pelican Bay (on the Sugarloaf Peninsula) with vehicular access to a day use area and a trial interpretive trail with wildlife viewing opportunities.

This alternative would allow much more substantial recreation development at several areas along the southeastern shoreline of the reservoir. At Crown Point, the existing campground would be expanded to the north, while at the Crown Point Extension additional recreation development would occur. This would include the creation of RV, tent, and group camping areas, a boat launch, parking areas, a trail system, and vehicular access to the railroad grade. While these developments

would have a positive impact on the developed recreation experience, they would come at the expense of the less development-dependent recreation opportunities that are currently provided for in this area. Current pedestrian use of the railroad grade would be adversely affected.

Substantial expansions would also occur at Van Wyck and Big Sage. At Van Wyck, several recreation facilities would be developed including a 250-slip marina, a boat launch, visitor center, expanded day use and camping areas, and a paved shoreline trail. The dispersed camping area at Big Sage would be developed under this alternative with 35 RV campsites (with hookups), a group RV campground, restroom facilities, and an RV dump station. This alternative would also include the development of a proposed east-side trail system in the vicinity of the southeastern shoreline of the reservoir, specifically areas near Big Sage and Blue Heron. These facilities and improvements would have a positive impact on the availability of developed recreation facilities; however, this action would have an adverse impact on the more dispersed recreation experience that is currently available in this area.

Cumulative Impacts

In general, impacts associated with the RMP and Alternative A would have a positive impact on recreation. Substantial new recreation development and opportunities would improve the recreation experience available to visitors and residents. Examples of some of the positive impacts associated with this alternative include additional boat-in use facilities, expanded day use and overnight facilities in areas such as Crown Point, and the construction of marina facilities on the western shoreline and at Van Wyck Park.

Construction of the proposed four-season WestRock resort would dramatically and permanently change the type and level of recreation activity in the valley. One major impact would be the creation of an entirely new recreation activity in the area (downhill skiing), and the new visitors and residents that would be drawn to the area to participate in this activity. In addition, the resort would be expected to attract many visitors and local residents in the summer when most reservoir visitors currently use the area. This use would create some adverse impacts such as crowding at recreation sites. This proposed development would also create many new recreational opportunities associated with its resort facilities.

Full development of WestRock is projected to result in traffic volumes of 16,500 vehicles per day west of Donnelly. This compares to the 1999 July 4th weekend traffic maximum volume of 2,500 vehicles per day at the same location. This large increase in traffic volumes would substantially degrade the quality of the current public experience at the west side campgrounds.

Aside from the direct impacts of the WestRock resort on recreation in the form of new visitor activities and opportunities, it would also have a substantial impact on the existing recreation facilities and opportunities in the area. The most direct cumulative impacts that would likely result from WestRock would occur on the west side of the reservoir. The narrow strip of Reclamation-managed land identified as C/OS, interspersed with small

recreation sites (Poison Creek, West Mountain, Buttercup, Curlew, and Huckleberry), would experience a great deal of pressure due to increased traffic and demand for future waterfront development to serve the resort villages of WestRock. As a result, increased pressure on this narrow resource area for increased water access and other more active recreation amenities would make camping and low intensity passive use impractical following resort build-out. This proposal could, therefore, force the removal of one or more of these public facilities. The Poison Creek and West Mountain campgrounds would experience the most direct impacts and would likely need to be converted to day use only areas. At the very least, this proposed development would impact these public recreation sites by eliminating the undeveloped and dispersed recreation experiences currently provided in these areas. Depending on the resort's success and growth, it is likely that similar pressures would affect other parts of the RMP study area as well in the future.

In addition, the alteration or elimination of existing recreation facilities and experiences on the west shore would potentially force visitors to use other existing sites as a substitute. Thus, increased visitation could occur in the northwestern and southeastern areas of the reservoir. The increased use in these areas would potentially create a more crowded recreation experience resulting in potential increased user conflicts, increased competition for available sites, and increased perceptions of crowding.

Boating use of the reservoir would also likely increase and potentially create more crowded conditions and the likelihood of increased user conflicts. This could strain existing or proposed boating facilities, such as marinas and boat launches. In general, WestRock would expose the area to new visitors, many of whom would eventually visit the recreation sites at Lake Cascade, potentially several times during the year.

In summary, the WestRock development would have both an adverse and a positive impact on recreation in the area. While it would create the positive impact of providing new recreational activities and visitor experiences, it would potentially displace existing visitors, as well as alter the character of the recreational experience currently available in the area.

The final potential source of cumulative impacts is implementation of the Cascade Reservoir Watershed Management Plan. This action would have a positive impact on recreation under this alternative by providing a more enjoyable recreation experience in the form of cleaner water for recreation activities such as swimming, boating, and fishing. This action would also likely provide improved aquatic habitat and increased fishing opportunities and success over time.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

The Preferred Alternative would primarily have positive impacts on recreation. However, these impacts and the level of development would not be at the same level of magnitude as Alternative A. It is important to note that while there would be many recreation actions under this alternative, they would primarily be related to less development-oriented opportunities, such as interpretive trails.

Many actions under this alternative would apply to the entire reservoir area. Actions having a positive impact on recreation would include providing universally accessible facilities, snowmobile parking areas, and expanded winter roadside plowing. Actions having an adverse impact on recreation would include issuing no new permits for private docks, prohibiting shoreline vehicular access at most areas, closing some areas to snowmobile use, restricting float plane use in some areas, and potentially closing WMA trails for wildlife habitat protection.

Actions related to the surface of the reservoir under this alternative would have both adverse and positive impacts. Stricter enforcement of state regulations pertaining to no-wake zones (particularly on the Boulder Creek Arm), and the recommended adherence of the 200 foot no-wake zone adjacent to the WMAs, would have an adverse impact on recreation by limiting waterskiing and powerboat and personal watercraft use in this area. The affected areas are small compared to the reservoir area not subject to no-wake restrictions. In addition, these areas are typically shallow and not conducive to waterskiing and other boating use. For this reason, any adverse impacts would be minimal. These actions would also have the positive impact of reducing conflicts between user groups. Enforcement of these actions may result in increased visitor education concerning wildlife-related issues.

In the northwestern area of the reservoir, the magnitude of new public recreation development under this alternative would be moderate, and would have a positive impact on recreation. A boat-in campground would be created at Driftwood Point if administrative access is available and a four-season restroom, group camping facilities, and hiking or cross-country ski trails would be allowed at Osprey Point and Duck Creek WMA. The western sections of the reservoir would also have moderate levels of facility development that would have a positive impact on recreation. Parking, restroom, trail, and interpretive facilities may be developed at Mallard Bay; however, this level of development would be considerably less than under Alternative A. Buttercup, Huckleberry, and Curlew recreation areas would have interpretive facilities installed. The most substantial recreation development in this area would be allowed at West Mountain and Poison Creek with the creation of a marina, parking area, interpretive facilities, and a group camping area.

The northeastern section of the reservoir would also have moderate levels of new public recreation development under this alternative. Boulder Creek Recreation Area would have improved boat launch facilities and additional parking, while the Gold Fork WMA would have new interpretive facilities and a non-motorized boating access area. The former airstrip would remain closed, which would have an adverse impact on potential air-based recreational access compared to the No Action Alternative. However, as noted, the airstrip is currently closed, has been for many years, and is not likely to reopen under any alternative.

Many of the recreation-related activities under this alternative in the southeastern area of the reservoir would be similar to those proposed under Alternative A, with slightly less development in most areas. However, these actions would still result in a positive impact on public recreation. Only actions that differ substantially from those in Alternative A are presented in this section. In the Crown Point area, a moderate level of recreation development would occur, with a notable increase in the number of boat-in and hike-in opportunities at the Crown Point Extension. Other

from those identified in the Preferred Alternative or Alternative A are outlined in this section, since many proposed actions are similar.

Several proposed actions under this alternative would apply to the entire reservoir area. Actions that would have an adverse impact on recreation would include the elimination of all private docks, no vehicular access to the shoreline by the public, and the limitation of snowmobile use in developed recreation areas to roads and designated routes. One action that would have a positive impact would be the community docks that would be allowed as a result of the elimination of all private docks.

In the northwestern area of the reservoir, most of the actions are similar to those outlined above with a more limited level of development. However, the overall impact on recreation remains positive. These more limited actions include the lack of group facilities at Osprey Point, no improvements to facilities at Mallard Bay, and no marina in the West Mountain area. In the northeastern area of the reservoir, the actions under this alternative are also more limited with respect to recreation. This is particularly true in the Boulder Creek Arm, where a no-wake zone would cover the entire arm with a continuation of non-motorized boating in the upper end of the arm. This would have an adverse impact on high-speed boating activities in the no-wake area; however, it may reduce conflicts between boaters and personal watercraft users and shoreline residents and result in a more positive and safer recreation experience for others. A limited interpretive trail would also be provided on the north side of the Gold Fork Arm.

Recreation development in the southeastern area of the reservoir would be similar to what would occur under the Preferred Alternative, with slightly lower levels of development. However, this lower level of new recreation development would still have a positive impact on recreation. Crown Point and Van Wyck would both have increased recreation facilities; however, there would be slightly fewer camping opportunities and an allowance for the same amount of boat slips as under the No Action Alternative (up to 250 slips). Improvements to the campsite spurs would also be carried out under this alternative to accommodate today's standards (i.e., larger RVs that are more common now than when most of these sites were designed and constructed). One impact of this alternative would be the elimination of developed recreational use of Big Sage and Cabarton resulting from the designation of these areas as C/OS. These actions would have an adverse impact on the recreational opportunities available in this area of the reservoir. The remaining areas of the reservoir would also have slightly less new recreation development than under the other alternatives, but would still result in a positive impact on recreation. Areas that would experience a slight increase in recreational facilities include the North Fork Payette Arm and the North Lake Fork Arm, which would have new trail developments.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, recreation-related actions specified under Alternative B would differ from those in Alternative A. While actions associated with Alternative B would

have a positive impact on recreation, these impacts would not be as pronounced as under Alternative A. Alternative B would have the least positive impact on recreation of any of the four alternatives, as it would create many additional areas designated as C/OS and WMA, which limits recreation development and opportunities. Examples of this include designation of the entire Boulder Creek Arm as a no-wake zone and designation of the Big Sage and Cabarton recreation sites as C/OS. Other actions under this alternative would allow for positive impacts on recreation that are similar to other alternatives but to a lesser degree. Overall, these actions would still serve to improve the recreation opportunities available to visitors and residents.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Alternative C would result in a moderate level of recreation development, although slightly less development would be allowed than under Alternative A. In general, this alternative allows for additional public recreation development that results in a positive impact on the visitor recreation experience. Many of the recreation-related actions specified by this alternative would be similar to those identified in the other three alternatives, thus only those that are substantially different are presented in this section.

Actions related to recreation under this alternative that would apply to the entire reservoir would generally have a positive impact on recreation. One action that would differ from previous alternatives is that shoreline vehicular access would not be prohibited (as in Alternative B), but would be permitted in designated areas. Northwestern areas of the reservoir would experience a moderate increase in recreation facilities that in some cases would exceed actions in the other alternatives. These additional actions include the creation of a day use facility focused on fishing at Mallard Bay, establishment of permanent group facilities at Osprey Point, and expansion of the west shore recreation sites into adjacent C/OS areas. All of these actions would have a positive impact on recreation.

Northeastern areas of the reservoir would also experience a moderate increase in recreation facilities that would have a positive impact on recreation. These facilities include a small marina at Boulder Creek Recreation Area, motorized trail use in areas adjacent to the Boulder Creek Arm, a larger day use area at the Gold Fork WMA, and most substantially, the creation of boat-in and hike-in camping areas at the former airstrip that would remain closed. The creation of these boat-in and hike-in sites would have a substantial positive impact on the availability of this type of recreation experience.

A moderate increase in new public recreation facilities would also occur in southeastern areas of the reservoir under this alternative. Although new development would be slightly less intensive than under the No Action Alternative, these actions would still have a positive impact on recreation. Specific differences between Alternatives C and A include allowing tent instead of RV camping at the Crown Point Extension, a larger marina under Alternative C, as well as an amphitheater and shower facilities at Van Wyck. Improvements to the campsite spurs would also be carried out under this alternative to accommodate today's standards (i.e., larger RVs that are more common

now than when most of these sites were designed and constructed). Under Alternative C the total number of slips allowed at this area would be 500, an increase of up to 250 slips over the No Action Alternative. Recreation developments at Big Sage and the Cabarton sites would be more limited than under Alternative A; however, these developments would still have a positive impact on recreation. The remaining areas of the reservoir would also have additional developments, primarily focused on creating interpretive trails and additional day use facilities on Sugarloaf Peninsula and Sugarloaf Island.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, recreation-related actions specified under Alternative C would differ from those in Alternative A. While actions associated with Alternative C would have a positive impact on recreation, these impacts would not be as pronounced as under Alternative A. In general, the amount and extent of new recreation facilities and opportunities would be slightly less than under Alternative A, but would still serve to improve the recreation opportunities available to visitors and residents.

3.9 Visual Resources

3.9.1 Affected Environment

Summary of 1991 Visual Resource Conditions

In 1991, the visual environment at Lake Cascade featured predominantly natural-appearing landscapes that included areas where development was highly evident but seen within an overall naturalistic setting. Overall, scenic resources were considered to be at a high level. Human presence was characterized by roads, recreational facilities, residential development, agricultural, and ranching operations, within a general rural (in most cases) to suburban (where development is concentrated) landscape setting.

The landscape of the western shore of the reservoir appeared relatively undeveloped. This was the case even though a certain amount of development was in place, including a main road and several smaller roads, dozens of private residences, and several recreational developments existed there. Because of the extensive forest cover that extends to the shore of the reservoir in many places from the slopes of West Mountain, most development in this area was not particularly evident. This was especially true of the private residential development that was primarily unseen from anywhere but within the developments themselves. The recreation areas were visible to a limited extent from the main road on the west side of the reservoir and from the reservoir itself. Relatively small clearcuts were visible in a few locations.

On the eastern shore, where the tree cover is less dense and less extensive, higher levels of development were more evident by comparison. As a result, the east side of the reservoir had a

improvements in this area may include increased interpretive facilities and renovations to Crown Point Campground. Improvements include renovating campsite spurs to accommodate today's standards (i.e., larger RVs that are more common now than when most of these sites were designed and constructed). More facility developments in the Van Wyck area would result in a positive impact on recreation, including a larger marina, interpretive facilities, and the provision of facilities (water and electric) to campsites. Under the Preferred Alternative, the total number of slips allowed at this area would be 400, an increase of up to 150 slips over the No Action Alternative. Actions in the Cabarton and Big Sage areas would also be moderate, although slightly less than under Alternative A, with a focus on interpretive facilities, and the development of a trail system.

Recreation developments in the remaining reservoir areas would also be moderate and would have an overall positive impact on recreation. The focus at these facilities under this alternative would be on improving visitor access (trails and parking) and providing new interpretive facilities. The Tamarack area would also have a non-motorized boat access point and additional snowmobile parking under this alternative.

Mitigation and Residual Impacts

No mitigation measures are proposed under the Preferred Alternative, because the actions under this alternative do not have substantial adverse impacts on recreation in the area. The residual impacts are positive in nature and were previously outlined in more detail above.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, recreation-related actions specified under the Preferred Alternative would differ from those in Alternative A. While actions associated with the Preferred Alternative would have a positive impact on recreation, these impacts would not be as pronounced as under Alternative A. Compared to the No Action Alternative, the Preferred Alternative only allows for a moderate amount of recreation development and is primarily focused on improvements that are less-developed in nature such as trails, interpretive facilities, and opportunities for dispersed recreation. These actions would still serve to improve the recreation opportunities available to visitors and residents.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

Alternative B would allow for the least amount of public recreation development and use of the four alternatives, in keeping with the increased natural resource emphasis under this alternative. This alternative would result in additional recreation development; however, not to the extent that would be provided under other alternatives. Frequently, this would result from the designation of these areas as C/OS or WMA. The overall impacts of Alternative B on recreation would be positive; however, some actions would have an adverse impact. Only those actions that are notably different

visual character that featured more development than the west shore. Within the area, but outside the direct viewshed of the reservoir, the towns of Cascade and Donnelly exist near SH-55. Also, privately-owned lands adjacent to Reclamation lands and the reservoir in the areas north of the town of Cascade and south and west of Donnelly were subdivided for residential development. Many individual lot owners constructed boat docks or implemented measures to control erosion of the shoreline in front of their property. This created a general visual disorder that detracted from the natural scenic character of the area, especially when viewed from the reservoir or adjacent properties.

A visually prominent location on the east shore of the reservoir just north of Cascade Dam is known as Crown Point. This area was used in the past by Reclamation and Valley County as a quarry site. Over time, the old quarry has become naturally revegetated with weeds. By 1991, scars from former quarry operations (terraces) were evident only when the site was viewed at close range.

Changes in the Visual Environment Since 1991

From 1991 to 2000, changes in the visual environment have occurred. Some have been the result of Reclamation or other agency actions. Others have resulted from actions by private individuals.

For example, agencies have initiated wetland enhancement and habitat improvement projects in several areas around the reservoir. Several agency projects and numerous private endeavors have also stabilized the shoreline and controlled bank erosion in many areas, but particularly in the northeast portion of the reservoir. Standards for the design and construction of erosion control features, including retaining walls, have been developed and now apply to permits for construction of these features. This has resulted in a more consistent appearance along the shoreline where more recent structures have been developed.

A number of new residences have also been constructed on private lands near the reservoir. These have occurred mostly on the east side of the reservoir on subdivision lots that were platted prior to 1991. This has resulted in the increasingly suburban appearance in this area.

Vehicular access onto formerly exposed areas of the lake bed during periods of reservoir drawdown has continued. This is particularly true in the Big Sage and Van Wyck areas. This type of use continues to detract from the natural character of the landscape.

The former quarry site at Crown Point has continued to revegetate through natural means and is even less visible and evident than in the past.

Summary Comparison of Changes

While some changes in the visual environment have occurred from 1991 to 2000, most of the changes have been relatively minor. For example, even though a number of new homes have been constructed on previously subdivided lots, the resulting negative change in the overall visual

environment has been negligible. In other cases, changes such as wetland enhancements or shoreline stabilization projects have generally produced small but positive visual effects.

3.9.2 Environmental Consequences

This section discusses the expected positive and adverse impacts of the RMP alternatives on visual resources. A general discussion of these potential impacts in each of four assessment categories is presented below, followed by a more detailed discussion of impacts under each of the four alternatives.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

The degree of proposed native vegetation protection and enhancement varies by location; however, these actions would have only a limited impact on visual resources. Actions proposed under all of the alternatives that would have an impact on visual resources would include the designation and creation of new wetland areas and C/OS areas. These areas would have a positive impact on the visual resources of the area by preserving the natural character of shoreline areas. In addition, proposed actions under the Preferred Alternative and Alternatives B and C would also regulate the amount of shoreline vehicular access, resulting in a positive impact on visual resources.

Most of the actions specified in all of the alternatives to protect the reservoir fishery (as stated in Appendix A, *RMP Draft Goals and Objectives*) would have little impact on visual resources; however, these minor impacts would primarily be positive in nature. Under all of the alternatives, the designation of WMAs and protecting shorelines from erosion (see above) would improve the visual character of the area by encouraging native vegetation as opposed to development.

Water Quality, Water Surface Management, and Erosion Control

Relatively few actions related to erosion control would impact visual resources. Under all of the alternatives these actions would include regulations on private landscaping as a means to control erosion, implementation of and increased efforts at enforcing no-wake zones, and a variety of erosion control measures at several recreation sites to minimize existing erosion control issues. Both of these actions would have positive impacts on visual resources by slowing the proliferation of the large, unvegetated areas that often accompany shoreline erosion.

Improved or Restricted Access

Potential actions related to public access involve either improving access, such as providing additional trails, or restricting access to protect habitat or wildlife. The only action related to access that would potentially impact visual resources relates to the construction of new trail facilities, and applies to all of the alternatives. Because most trails proposed in the alternatives would not be paved, no large-scale impact would occur on visual resources. Any paved trails, specifically those

provided to address accessibility concerns, would only have a slightly adverse impact on visual resources in a very limited area.

Improved Facilities, Encroachment, and Miscellaneous

Many actions under all of the alternatives would result in the expansion and improvement of recreation facilities that would have an impact on visual resources. Potential actions focus on the improvement, expansion, or construction of new facilities associated with day use, overnight, or boating facilities. Most of these actions would not have an adverse impact on visual resources. However, under each of the four alternatives, adverse impacts associated with increased recreation development focus on the construction of large permanent facilities such as restroom buildings, marinas, visitor centers, and docks. Although these impacts are detailed below, it is important to note that adverse impacts would be minor, and no actions related to the improvement of facilities would create a substantial visual impact. An additional miscellaneous action that would have an impact on visual resources under all of the alternatives relates to the use of the quarry located near Crown Point.

Although recreation development would be extensive under all of the alternatives, visual impacts would be limited in nature. One proposed action included in each alternative is the creation of marina facilities in the reservoir. The presence of boat slips and breakwater features would have an adverse impact on visual resources, particularly when viewed from the water. This would be especially true on the west side of the reservoir where few developed areas are currently located. Actions related to the presence of private and community docks on the reservoir would have similar impacts on visual resources. Day use and overnight facilities that would have potentially adverse impacts include new restroom buildings (all alternatives) and the possible construction of a visitor center in the area (all alternatives). Other potential developments with adverse impacts on visual resources would include the construction of permanent group facilities such as picnic shelters (Preferred Alternative and Alternatives B and C), dormitories (Alternative C), and a lodge (Alternative C). It is important to emphasize that the majority of these developments would only have minor adverse impacts on visual resources, and in general, these developments would be occurring in areas that are already visually compromised in some fashion with existing recreation facilities.

An additional action under all of the alternatives with an adverse impact on visual resources would be the possible renewed extraction of materials from the rock quarry near Crown Point. The removal of vegetation from this area and the exposure of bedrock materials would have an adverse impact on visual resources, particularly from the area on the reservoir directly west of the quarry and areas from the west side shoreline. Although the quarry is located in a visually prominent area (Crown Point), these visual impacts would be short term and would be somewhat mitigated by the fact that the bedrock layers in this area are comprised of black basalt, which blends well with the surrounding landscape. This area would also be revegetated following any quarrying activities through the implementation of a reclamation plan.

Alternatives

The following section discusses the potential impacts of each of the four alternatives on visual resources in the area. This section addresses the relative magnitude of the impacts and provides a brief description of how the proposed actions in each alternative would affect recreation.

Alternative A—No Action: Continuation of Existing Management Practices

This alternative would result in continued operations and management of area resources as they currently exist. All recreation sites and facilities currently available would be operated at their current level of service. This alternative would also result in the continuance of policies and actions prescribed in the 1991 RMP. In general, these policies prescribe a substantial level of recreation development in the area that would have an impact on the visual resources of the area. Some of these actions would result in adverse impacts on visual resources; however, they would be limited in nature.

On a reservoir-wide basis, this alternative would allow for no new docks in C/OS areas, which would have a positive impact on visual resources. Also, there would be limited creation of new wetland areas and designation of some C/OS areas that would have a positive impact on visual resources. In the northwestern area of the reservoir, a new marina would be constructed at West Mountain that would have an adverse impact on visual resources. No actions in the northeastern area would impact visual resources. However, several actions in the southeastern area that would have negative impacts include the construction of a 250-slip marina, breakwater, and a visitor center at Van Wyck. Recreation development in the Crown Point area would also adversely impact visual resources with the construction of new restroom facilities.

Under this alternative, actions related to the quarry near Crown Point would be limited and would not have a substantial impact on visual resources. Future quarry operations would remain a possibility, however no major projects within the next 10 years are specified in this alternative.

Overall, while many of the activities undertaken as part of this alternative would result in incrementally negative impacts on the visual resources at Lake Cascade, several actions would also result in having a positive impact on the area's visual resources. In balance, the resulting impacts would be negligible.

Cumulative Impacts

In general, impacts associated with Alternative A would have a negligible impact on visual resources. Positive impacts on visual resources would primarily be associated with the creation of additional C/OS areas while negative impacts would focus on new recreation developments such as day use and camping facilities and marinas.

The WestRock resort development would have an adverse impact on the visual resources of the area. The dominant background visual resource for most water-based recreational users and visitors to the east side of the reservoir is the forested slope of West Mountain rising above the reservoir. Clearing a portion of these lands for the development of alpine

ski trails, mountain lodges and homes, and extensive base area developments would substantially alter the visual resources of the area. The visual resources of the recreation developments located on the west shore of the reservoir would also be adversely impacted. Currently, these sites are bordered on the west by forested areas that provide a dominant middle-ground visual resource. It is likely that some of these areas would be removed to provide for the extensive developments planned in association with WestRock. Overall, the WestRock resort development would have an adverse impact on visual resources throughout the Lake Cascade area by altering the predominantly natural landscape to one that is highly developed in comparison.

The final potential source of cumulative impacts is the Cascade Reservoir Watershed Management Plan. This program would focus on improving water quality at Lake Cascade and would have little to no impact on the visual resources of the area. If water clarity is improved through this program, these measures would result in a positive impact on visual resources.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Unlike Alternative A, which is focused on increased recreation development, this alternative balances recreation development with a natural resource emphasis. Thus, while the Preferred Alternative still would have some adverse visual impacts associated with recreational development (with some positive impacts resulting from natural resource related activities), these impacts, and the level of development, would be less than anticipated under Alternative A, with the exception of a larger marina facility at Van Wyck.

On a reservoir-wide basis, prohibiting any new private docks (only community docks allowed) would result in a positive impact on visual resources by decreasing the potential number of permanent visual intrusions along the shoreline. Also, this alternative would provide for increased areas of C/OS designation and wetland development as compared to Alternative A, resulting in a positive impact on visual resources. In the northwestern area of the reservoir, a restroom and a group shelter would be built at Osprey Point and a smaller marina than allowed in Alternative A would be built at West Mountain. Both of these actions would have minimal adverse impacts on visual resources.

While no impacts would result on visual resources from actions in the northeastern area of the reservoir, some impacts would occur in the southeastern area. In the Crown Point area, vault toilets and a shower facility would be added while at Van Wyck, a much larger marina (400 slips) and a shower facility would be added. These developments would have an adverse impact on visual resources, as would the provision of a new restroom at Big Sage; however, these impacts would be relatively minor because of the existing developed nature of the area. One exception is the marina facility at Van Wyck, which would have a more noticeable adverse impact on visual resources. The only additional impact on visual resources in the area would be at Sugarloaf Recreation Area where a breakwater would have an adverse impact on visual resources.

Actions related to the quarry at Crown Point would result in more impacts under this alternative than under Alternative A. Extraction of quarry materials for Reclamation's maintenance purposes would result in a short-term adverse impact on the visual resources of the area as detailed in the improved facilities, encroachment, and miscellaneous assessment category.

Overall, while many of the activities undertaken as part of this alternative would result in incrementally negative impacts on the visual resources at Lake Cascade, several actions would also result in having a positive impact on the area's visual resources. In balance, the resulting impacts would be negligible.

Mitigation

No mitigation measures are proposed under the Preferred Alternative, as the actions under this alternative do not have a substantially adverse impact on the visual resources of the area.

Residual Impacts

Minor residual impacts on visual quality described above would occur under the Preferred Alternative.

Cumulative Impacts

The cumulative impacts associated with the Preferred Alternative would be identical to those outlined for Alternative A as they relate to WestRock and the Cascade Reservoir Watershed Management Plan. However, actions specified under the Preferred Alternative would differ from, and result in visual impacts slightly less than those under Alternative A. In general, actions associated with the Preferred Alternative would have a negligible impact on visual resources. While some recreation developments would have a negative impact on visual resources such as new marina facilities and additional day use and overnight facilities, these developments and their associated visual impacts would have less impact than under Alternative A.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

Alternative B would allow for the least amount of recreation development of the four alternatives, primarily a result of the increased natural resource emphasis under this alternative. In many cases there would be additional recreation development compared to Alternative A. However, the development would not be to the extent provided under other alternatives. Frequently, this would result from the designation of Reclamation lands as C/OS or WMA. Thus, the overall impacts of Alternative B on visual resources would be positive; however, some actions would have an adverse impact. Only those actions that are substantially different from those identified in the Preferred Alternative or Alternative A are outlined in this section, since many are similar to these.

On a reservoir-wide basis, all private docks would be eliminated and replaced with community docks. This would have a positive impact on visual resources in the area by decreasing the amount of structures and visual intrusion along the shoreline. Also, the increased emphasis on C/OS areas and WMAs under this alternative would result in a positive impact on visual resources.

Overall, while many of the activities undertaken as part of this alternative would result in incrementally negative impacts on the visual resources at Lake Cascade, several actions would also result in having a positive impact on the area's visual resources. In balance, the resulting impacts would be negligible.

Cumulative Impacts

The cumulative impacts associated with Alternative B would be identical to those outlined for Alternative A as they relate to WestRock and the Cascade Reservoir Watershed Management Plan. However, actions specified under Alternative B would differ from those in Alternative A. In general, impacts associated with Alternative B would have a negligible impact on visual resources. While some recreation developments would have a negative impact on visual resources, the designation of additional areas as C/OS and WMA would have an equally positive impact on visual resources; overall resulting in negligible impacts on visual resources.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Alternative C would result in a moderate level of recreation development, although there would be slightly less development than allowed under Alternative A. In general, this alternative allows for additional recreation development that results in a few additional impacts on the visual resources of the area. Many of the actions specified by this alternative would be similar to those identified in the other three alternatives, thus only those that are substantially different are detailed in this section.

In the northwestern area of the reservoir, a new lodge and dormitory at Osprey Point and the expansion of the west side recreation sites into C/OS areas would have negligible adverse impacts on visual resources. In the northeastern area, a small marina at Boulder Creek would result in an adverse impact by disrupting the unobstructed visual quality of the reservoir surface. More adverse impacts to visual resources would result from recreation developments in the southeastern area including a shower facility at Crown Point and a larger marina and shower facility at Van Wyck.

Overall, while many of the activities undertaken as part of this alternative would result in incrementally negative impacts on the visual resources at Lake Cascade, several actions would also result in having a positive impact on the area's visual resources. In balance, the resulting impacts would be negligible.

Cumulative Impacts

The cumulative impacts associated with Alternative C would be identical to those outlined for Alternative A as they relate to WestRock and the Cascade Reservoir Watershed

Management Plan. However, actions specified under Alternative C would differ from those in Alternative A. In general, impacts associated with Alternative C would have a negligible impact on visual resources. While some recreation developments would have a negative impact on visual resources such as new marina facilities and additional day use and overnight facilities, these developments and their associated visual impacts would have less impact than under Alternative A.

3.10 Land Use

This section addresses impacts associated with the three action alternatives and the No Action Alternative on land use in the vicinity of Reclamation-owned lands bordering Lake Cascade.

3.10.1 Affected Environment

This section provides a brief discussion of surrounding land uses and an overview of existing land status and management issues. Such items include agreements, easements, and leases; and encroachment and trespass issues on Reclamation lands.

Lake Cascade Area General Land Use

Lake Cascade occupies the western side of Long Valley, a broad, long, flat-bottomed valley. A high ridge rises to the west and includes West Mountain. A smaller ridge borders the reservoir to the east, just north of the City of Cascade, but most of the eastern and northern sides of the reservoir consist of gently sloping rangeland. Dominant land uses in the general vicinity include, forest, rangeland and agriculture, and housing.

Most of the lands contiguous to the reservoir that are not in Reclamation ownership are currently managed as part of the Boise National Forest. These were originally acquired by Reclamation from private landowners when the project was planned and constructed then subsequently transferred to the USFS. Several smaller areas along the reservoir's shoreline are held in private ownership. Reclamation maintains flowage easements over these properties, authorizing the agency to flood the property if necessary.

Forest

Most of the West Mountain slope is timber land managed by the USFS. A relatively minor amount of timber cutting occurs here. USFS ownership extends to the lakeshore throughout much of the southwestern shoreline as well as around Tamarack Falls Bridge. The USFS supports public recreation in these areas with developed day use sites and campgrounds. USFS lands are also grazed.

Two large tracts of forest land on West Mountain are in private and State ownership. The private landowner is currently proposing to construct a major four-season destination resort called WestRock near the north west shore of the reservoir. As proposed, the development would include

downhill ski facilities with a capacity for 10,000 skiers per hour; 3,460 new housing units; an 18-hole golf course; ice skating rinks; tennis, racquet ball, and equestrian facilities; restaurants; commercial facilities; and the utility systems and infrastructure to support these facilities (ISLB 1999). As of spring 2000, the WestRock proposal has received concept approval from the Valley County Planning and Zoning Commission and Board of Commissioners, allowing the planning process to continue, as well as a Conditional Use Permit for the site. Additional permits would also be required for use of the State lands and the planned unit development (WestRock Agency Coordination Meeting Notes, August 11, 1999).

Agriculture

Livestock grazing on either irrigated or non-irrigated pasture is the dominant use in the general area. The central eastern area is primarily agricultural. In addition, some grazing occurs on the west side both on private and public lands. A small amount of farming occurs, as well as a few other miscellaneous uses.

Residential Subdivisions

The Cascade Valley is becoming even more of a recreation destination than it was prior to the 1991 RMP. This trend has been fueled by rapid economic development in nearby Treasure Valley, averaging 4 to 5 percent annually. Recreation opportunities are available all year long, but the visitor population is largest during the summer when cool climatic conditions and water-based recreation draw visitors to the area, primarily from Boise and other parts of Ada and Canyon Counties. The area also attracts a limited number of visitors during the winter and other seasons, primarily for snowmobiling and other winter-related activities.

An estimated 5,696 residential lots are located within a 2-mile radius of Lake Cascade. These lots are part of about 150 rural subdivisions, although there are several short plats and individual residential parcels as well. For the most part, these figures do not include homes in the cities of Cascade and Donnelly. Of the total number of residential lots, about 34 percent have residences or mobile homes. This percentage is much higher (approximately 70 percent) near the waterfront, where 557 of the lots have residential improvements. Only 240 lots near the reservoir shoreline remain undeveloped. Noticeable growth has occurred around Lake Cascade since the 1991 RMP. This is especially true adjacent to the shoreline, where 71 new houses have been built, representing a 14 percent increase in the percentage of near shore lots with houses.

Subdivisions are concentrated adjacent to the RR-designated land around the reservoir's northeastern points and arms, including the Lake Fork Arm, Boulder Creek Arm, Willow Creek, Gold Fork Arm, and at Arrowhead Point. A considerable number of homes are also located near the southwestern portion of the reservoir. The majority of these homes belong to owners whose primary residence is outside Valley County. Accordingly, most use occurs during summer weekends and holiday periods. Winter use is much less frequent, especially in subdivisions southwest of the reservoir and wherever the roads are not plowed (pers. comm., L. Ankenman, Valley County Engineer, May 11, 1999).

In recent years, subdivision activity has accelerated inland of land designated C/OS. This has resulted in numerous indiscriminate foot trails through C/OS areas that enable adjacent property owners to access the shoreline.

Existing Land Status and Management

Reclamation's land holdings include the submerged lands beneath Lake Cascade as well as a band of land varying from approximately 10 feet to more than 1 mile wide around most of the reservoir. As the landowner, Reclamation has ultimate authority and responsibility over management of all Reclamation lands. IDPR manages all of Reclamation's public recreation areas at Lake Cascade. Reclamation also leases more than 400 acres of land for recreation purposes to the cities of Cascade and Donnelly, the YMCA, 4-H Club, and SISCRA. The lands under each of these five groups or agency lease agreements are also managed by these entities. Of Reclamation's land holdings around Lake Cascade, 1,846 acres are subject to permanent AEs. In addition, an estimated 1,279 acres of private land around the reservoir but outside of Reclamation ownership are subject to the agency's flowage easements.

Land Use Designations

Nearly 7,000 acres of land above the normal high water line around Lake Cascade are owned by Reclamation and administered according to the policies in the existing 1991 RMP. The 1991 RMP established the following four distinct land use designations and associated acreage: Wildlife Management Areas (WMA), 3,987 acres; Conservation/Open Space (C/OS), 1,264 acres; Recreation, 699 acres; and Rural Residential (RR), 80 acres (Reclamation, 1991). These designations are fully described in Chapter 2 and briefly discussed here. The actual acreages provided in the 1991 RMP differ somewhat from the acreages indicated above. The numbers shown here were derived from actual survey data and are considered more accurate (although still preliminary).

The WMAs were established to maintain and enhance areas to protect wildlife habitat, especially for migratory birds, and sensitive and endangered wildlife species. The 1991 RMP identified six WMAs at various locations around the reservoir. Overnight use, motorized access, recreation development, and grazing are generally prohibited within WMAs.

The C/OS areas are intended to serve as a buffer between the WMAs and public recreation areas and private development. They are also intended to protect undeveloped landscapes, thus contributing to the area's rural character, as well as providing protection of vegetation, wildlife, and soil and water quality. Public access is limited within C/OS areas to passive recreation activities, primarily to protect habitat values and minimize wildlife impacts. Motorized vehicles other than snowmobiles are limited to roads and designated trails.

Fill material for Cascade Dam was quarried from Reclamation land at Crown Point. The quarry is on C/OS designated land. About 200 to 300 cubic yards of material are being held in reserve for future dam re-building and other operational needs. The quarry is located at a prominent site

overlooking the reservoir, providing panoramic vistas of the reservoir and the mountains to the west.

The recreation designation covers Reclamation-owned lands that have been developed or set aside for recreation-related purposes, including campgrounds, day use areas, trails, boat launches, and other public recreation facilities. The facilities are scattered around Lake Cascade and are managed by the IDPR. Private organizations manage the Reclamation lands leased for recreation purposes (for example, 4H Club, SISCRA, and YMCA). The City of Donnelly manages Donnelly City Park.

The RR designation applies to the developed shorelines along the northeast portion of the reservoir where Reclamation owns a narrow strip of property (generally less than 100 feet wide) between the high water line and the adjacent privately-owned residential lots. Management of the RR lands is focused on limiting encroachment of privately-owned structures and shoreline erosion control and prevention.

Operations and maintenance lands are managed for the purpose of operating and maintaining Cascade Dam and Reservoir. These lands provide the facilities needed to adequately manage all Reclamation lands.

Leases

Reclamation leases portions of its holdings around Lake Cascade to several public and private entities for a variety of uses. More than 400 acres of land is leased for recreation, by far the dominant use of land leased from Reclamation on a renewable basis. Recreation lease holders include the cities of Cascade and Donnelly, the YMCA, 4-H Club, and SISCRA. Most of these leases are for facilities such as camping and day use, with leases ranging from 10 to 30 years. In addition, the IDFG has a long-term lease for approximately 100 acres on Sugarloaf Island and Sugarloaf Peninsula to manage and enhance migratory waterfowl habitat. Sugarloaf Peninsula is used extensively by bank anglers and, to a lesser extent, campers. The island is a popular boating destination and receives some overnight use.

The only residential lease is for a parcel of land occupied by a private cabin that was discovered on Reclamation land across the creek from SISCRA in the mid-1990s. Reclamation responded by issuing a 5-year non-transferrable lease that would expire in 2001.

AEs and Agricultural Leases

Permanent reserved agriculture easements apply to approximately 1,800 acres that permit livestock grazing and other agricultural uses. In some areas, for example on the east side of the reservoir at the Sugarloaf Peninsula and within the North Fork Arm, cattle graze the uplands and wade into the reservoir to drink, particularly from June through September. These easements mostly date from before the reservoir was created in 1948.

By contrast, and as a result of the 1991 RMP, grazing leases were terminated by Reclamation in response to concerns about water quality deterioration caused in part by agricultural runoff and

cattle grazing in and adjacent to the reservoir. The single remaining exception is one 8-acre agricultural lease used for row crops that remains in effect along the Gold Fork Arm.

Flowage Easements

Flowage easements release Reclamation from liability for property damage caused by shoreline erosion resulting from fluctuating lake levels. These easements encumber several hundred of the private land holdings adjacent to the reservoir, covering a total of 802 acres. These easements were established where flooding or shoreline erosion was expected or occurred on private property. Flowage easements are of particular importance to Reclamation in several areas where the shoreline is close to, or has already retreated across, Reclamation lands and is nearing private lands (for example, south of Arrowhead Point).

Permits

Permits are issued by Reclamation to private parties allowing for three types of improvements on Reclamation lands or within the reservoir: landscape improvements and erosion control, boat docks, and mooring buoys. These are described in greater detail below.

Landscape Improvements and Erosion Control

The main purpose for this type of permit is to assist private property owners in controlling erosion adjacent to their property. Retaining walls are the most common type of "improvement" permitted under these permits. The other common improvement is for vegetation planted on Reclamation RR-designated lands. Reclamation will issue a single permit that will allow both landscape improvements and/or erosion control structures. Adjacent property owners can apply for either or both type of improvement on Reclamation lands within RR designated lands.

Because retaining walls can benefit both the adjacent landowner and Reclamation by preventing shoreline erosion, they have been allowed as long as required permits were obtained from Reclamation and the COE. These permits are issued for 10-year terms, allowing the agency to periodically inspect the retaining walls and require necessary maintenance. Before the 1991 RMP was adopted, no standards were in place to ensure structural integrity or aesthetic quality. Therefore, many of the walls are now deteriorating, falling over, and exacerbating the shoreline erosion problem they were originally intended to overcome. Furthermore, because the retaining walls were allowed to be constructed with an assortment of materials and employing a variety of construction techniques, they vary considerably in appearance from one property front to the next, often resulting in a visually haphazard waterfront.

Out of concern that retaining walls do not provide fish habitat, the COE prefers the use of native vegetation and rock rip-rap to a structural retaining wall unless it has a coarse rock

facing. As required under Section 404 of the Clean Water Act, the COE requires 404 Permits for retaining walls built below summer pool (ordinary high water), or in wetlands.

The COE issues retaining wall permits according to two separate review procedures. The simplest is the Nationwide Permit, which is applicable to typical residential applications. To be eligible, retaining walls must be no longer than 500 linear feet, result in no more than 1 cubic yard per lineal foot of discharge, and be faced with rock 6 inches in diameter or greater. The more complex Individual Permit requires extensive notification and agency review, often taking many months to process (pers. comm., G. Martinez, COE, Boise, Idaho, August 24, 1999).

Boat Docks

Boat docks and other boating support structures have proliferated over time as new residences have been built, especially around the reservoir arms. The current policy at Lake Cascade allows owners to obtain annual or 5-year permits for boat docks. Both individual and community-owned docks are permitted. However, this is not in compliance with Reclamation policy; therefore, either the Preferred Alternative or Alternative B would be implemented, restricting new individual boat dock permits. Community docks are encouraged over individual docks through the permit pricing system, as community docks are less expensive on a per-moorage basis. Ideally, community docks are large enough to accommodate five to ten boats and are built, maintained, and used by a large number of residents. Currently, community docks are located within the Boulder Creek Arm, at Vista Point, and several other sites. All individual and community boat docks, although built and maintained at the expense of the owners, are required to be accessible to the general public in emergency situations. As of July 2000, approximately 400 boat docks were used at Lake Cascade under the permit system, including five community docks.

Mooring Buoys

Each shoreline lot owner is allowed one mooring buoy per lot. These permits are issued by Reclamation.

Encroachments on Reclamation Lands

Encroachments and other management problems have continued to increase since the 1991 RMP, primarily on the RR-designated lands along the reservoir's northeast shoreline. Reclamation ownership is limited to a narrow strip of land in this area between the high water line and subdivided private property.

One residence is known to be located beyond the private property line on Reclamation land, as well as minor portions of other homes and many decks. A majority of these encroachments exist in a limited number of the older subdivisions that were established when buyers and sellers were lax about surveying property. In addition, freestanding decks, storage structures, fences, restroom

facilities, trailers, landscaping, irrigation systems, and similar personal property extend across Reclamation land to the water's edge.

Construction in Valley County is regulated by the County's Land Use and Development Ordinance. This ordinance was first passed in 1982 after nearly all of the near shore subdivisions had been approved. The Land Use and Development Ordinance, which was updated most recently in 1992, requires that all residential buildings be set back at least 30 feet from the high water line. These updated development regulations prohibit development within 7.5 feet of Reclamation property, but permits are only required for structures more than 30 inches in height. Therefore, it is permissible for uncovered decks or other low structural features to be built right up to the boundary line. The ordinance requires other buildings to be set back at least 100 feet from high water lines as measured horizontally to the face of a building, including eaves, projections, or overhangs.

This regulation may have prevented some of the more recent encroachments on Reclamation lands; however, setback violations remain common. Some of these encroachments have been attributed to deliberate violations, while most are attributed to lack of knowledge or understanding by property owners; many home owners and builders may not be aware of the locations of actual property lines, even though it is their legal responsibility to know where their property boundaries are located.

3.10.2 Environmental Consequences

This section discusses the expected positive and adverse impacts of the RMP alternatives on local land use. A general discussion of these impacts in each of five assessment categories is discussed in the first section, while a more specific presentation of impacts under each of the four alternatives is presented in the last section.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

No direct impacts on land use are expected from actions to enhance vegetation, wildlife habitat, and natural resources on Reclamation lands under any of the alternatives.

Water Quality, Surface Water Management, and Erosion Control

Erosion control measures under all of the alternatives would have positive impacts on land use by protecting land from erosion. Actions that would be implemented under all of the action alternatives in support of RMP goals that relate to land use include: developing and/or updating habitat improvement plans, increasing efforts to protect shorelines from erosion, encouraging enforcement of limits for motor boat usage along shoreline areas, implementing BMPs, and increasing the amount of land designated as WMA and C/OS (Alternative B and Preferred Alternative). These potential actions would enhance water quality, which could indirectly affect land use by increasing property values and possibly attracting additional visitors and residents to the Cascade area.

Improved or Restricted Access

Access would be affected by changes proposed under all of the alternatives as they relate to airplane use, enforcement of motor boat use along shorelines, vehicular access to the shoreline, road and trail use, and snowmobile access through developed recreation sites. None of the access-related actions proposed by any of the alternatives would be expected to negatively impact land use. Increased emphasis on trail development included in all of the alternatives would have a beneficial impact on land use by enhancing the region's trail-based recreation activities, thereby improving the local quality of life.

Improved Facilities, Encroachment, and Miscellaneous

Facility improvements proposed under all of the alternatives would generally result in positive land use impacts by enhancing one of the region's major water-based recreation attractions, thereby improving the local quality of life. Specific facility-related impacts are discussed below for each alternative.

Alternatives

This section discusses the expected impacts of each of the four alternatives on land use in the area. It also addresses the relative magnitude of the impacts and provides a brief description of how the features comprising each alternative would affect land use.

Table 3.10-1 illustrates the amount of acreage by each of the different land use designations for the four alternatives. Some of the acreage figures shown on Tables 3.10-1 vary from numbers generated for previous documents and reports, including the 1991 Cascade Reservoir EA and RMP. The figures shown herein are based on survey data entered into a computer-based Geographic Information System (GIS) as of September 2000, and are considered the most current and accurate data available. The amount of land designated for Proposed Recreation accounts for the most notable difference between the No Action Alternative and the Preferred Alternative and Alternative B. Specifically, both the No Action Alternative and Alternative C include more than five times as many acres of proposed recreation sites as the Preferred Alternative and over ten times more recreation acres than Alternative B. The difference would mostly result from changing C/OS-designated to recreation. All four of the alternatives propose no changes to the amount of land designated as Rural Residential. The amount of WMA-designated lands also vary somewhat between the alternatives, with Alternative B containing the most WMA lands and Alternatives A and C having the least.

Table 3.10-1. Land Use Changes by Alternative (in Acres)

Land Use Designation	Alt. A	Preferred Alt.	Alt. B	Alt. C
Conservation/Open Space	1,264	1,412	1,387	1,273
Wildlife Management Areas	3,987	4,026	4,142	3,987

Table 3.10-1. Land Use Changes by Alternative (in Acres)

Land Use Designation	Alt. A	Preferred Alt.	Alt. B	Alt. C
Recreation	386	386	389	392
Proposed Recreation	313	116	32	298
Rural Residential	80	90	80	80
Operations and Maintenance	19	19	19	19
Flowage Easement	802	802	802	802
Total	**6,851**	**6,851**	**6,851**	**6,851**

Source: Reclamation GIS File Data 2000.

Alternative A—No Action: Continuation of Existing Management Practices

Under the No Action Alternative, the 1991 RMP would continue to be implemented except in situations where the 1991 actions conflict with current Reclamation policy or laws, or where various physical constraints prevent implementation. In such cases, the 1991 RMP would be amended to conform to these mandates and other limitations.

A number of the actions authorized in the 1991 RMP have yet to be implemented. Two of these in particular could have direct or indirect land use impacts. The first is development of a marina adjacent to the West Mountain Campground. Because this area is generally undeveloped, a development of this size and nature would be a distinct change to the existing low intensity of development and activity on the western shore of Lake Cascade. Direct land use impacts would depend on the type of ancillary facilities and levels of use and activity generated by the marina. Indirect land use impacts could result from potential commercial and residential development which could be catalyzed by the new marina. The other remaining 1991 RMP proposal that would result in potential land use impacts is motor vehicle use on the railroad grade north of Crown Point (i.e., the Crown Point Extension). Indirect land use impacts could result from increased development pressure resulting from use of this roadway by adjacent property owners to access their property.

Cumulative Impacts

Construction of the proposed WestRock resort would dramatically and permanently change the type and level of human activity in the valley. The most direct cumulative impacts that would likely result from the resort development would occur on the west side of the reservoir. The narrow strip of Reclamation-owned land which is currently characterized as remote C/OS and WMAs interspersed with small recreation areas would likely be used as the public waterfront serving the resort villages proposed just up-slope from this area. As a result, pressure on this resource for trails, increased water access and other more active recreation amenities would make camping and low intensity passive use impractical

following resort build-out. Depending on the resort's success and growth, it is likely that similar pressures would affect other parts of the planning area as well in the future.

Land use patterns, activity levels, and property values throughout the Long Valley area would be altered substantially. Development of a four-season resort could require possible revisions to the RMP to achieve certain natural resource protection objectives given the global scale of change likely to accompany this development.

The final potential source of cumulative impacts is implementation of the Cascade Reservoir Watershed Management Plan. This program would focus on improving water quality at Lake Cascade by managing point and non-point sources of phosphorus loading and would have a positive impact on land use by enhancing the region's principal scenic and recreational amenity.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Because of its increased emphasis on erosion control, community over private uses, pro-active solutions to use conflicts, and monitoring for habitat and resource impacts, numerous and greater beneficial land use impacts would result from this alternative than from the No Action Alternative. For example, the Preferred Alternative includes a variety of measures to limit erosion and protect shorelines by assisting and monitoring shoreline stabilization permits. In addition, the Preferred Alternative would address a number of land use designations that were not resolved in the 1991 RMP (Alternative A) with more appropriate management areas.

Mitigation and Residual Impacts

The Preferred Alternative would not result in adverse land use impacts on land use warranting mitigation measures. No residual impacts are anticipated to result from any implementation of the Preferred Alternative.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, under the Preferred Alternative, the Crown Point railroad grade would not be open to motorized vehicles. Nevertheless, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative impacts resulting from this difference between the alternatives would be negligible.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

This Alternative shares many of the beneficial impacts of the Preferred Alternative, such as its emphasis on erosion control, removal of private uses occurring within RR designated areas, and reliance on habitat improvement plans. In some instances, however, elements of this alternative may actually challenge plan implementation. Specifically, the elimination of all private docks could create

intense opposition and resistance from near shore property owners, thereby increasing the need for more intensive and time-consuming management. In addition, depending on the type and scale of concession operations, the provision of fuel and supplies at the Boulder Creek Recreation Area could potentially result in localized land use incompatibilities with adjacent residential uses.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, under Alternative B the west side marina would not be built and the Crown Point railroad grade would be not be open to motorized vehicles. Nevertheless, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative impacts resulting from the differences between the No Action and Alternative B would be negligible.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

This alternative shares many of the positive as well as a few of the negative impacts of the other alternatives. Depending on how the site were actually used, conversion of the airstrip to a recreation site could potentially be incompatible with the large adjacent WMA. Likewise, conversion of the airstrip of C/OS-designated lands on the northwestern shore could alter both the level of activity and the character of the shoreline in that part of the reservoir. In addition, for reasons similar to those addressed in the discussion of the No Action Alternative impacts, conversion of the railroad grade to a county road could create a number of land use concerns related to expansion of development pressures which could have direct and indirect land use impacts on Reclamation lands in this area.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. Similar to Alternative A, the Crown Point railroad grade would be open to motorized vehicles under Alternative C. However, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative impacts resulting from the differences between the alternatives would be negligible.

3.11 Socioeconomics

This section addresses impacts associated with three action alternatives and the No Action Alternative on socioeconomic issues, public services, and utilities in the vicinity of Reclamation-owned lands bordering Lake Cascade.

3.11.1 Affected Environment

Current population trends, employment and income, as well as public facilities and utilities for the Cascade area and Valley County, are discussed below.

Demographics

In July 1999, the population of Valley County was estimated to be 7,858 people (U.S. Census Bureau 2000a). Because of its small size, relatively small numeric changes result in the pattern of population growth and loss that has characterized estimates for the county in recent years. During the 1980's, the county's population grew 9.1 percent, reaching 6,109 in 1990. More recently, population growth was estimated to have slowed to 4.7 percent by 1997 (WestRock 1998). In addition, the large percentage of vacation properties in Valley County resulted in large population fluctuations. However, the greatest variable potentially affecting the County's future demographic profile is the WestRock resort development proposal.

The three largest towns in Valley County are McCall (population 3,065), Cascade (population 1,050), and Donnelly (population 137). The population of County subdivisions and residential parcels is estimated to be considerably larger than that of the towns. It is estimated that approximately 40 percent of the County's population is seasonal (McCall 2000).

Employment and Income

Before the 1970s, the agriculture and timber industries generally supported the local economies of Valley County. Economic growth slowed in the early 1980s, then began to expand in the late 1980s in response to growth and development in the Treasure Valley area. Unprecedented population growth during the 1990s (both permanent and seasonal) brought about more employment in real estate and construction. At this same time, however, the lumber mill in McCall was permanently closed resulting in a loss of jobs in the timber industry (IDEQ 1998a).

As of 1996, various government agencies employed the greatest number of employees in the County, followed by wholesale/retail trade and services. In Cascade, a majority of jobs are related to the wood products industry (for example, at the Boise Cascade timber mill) and county government. Agriculture is another leading industry in the Cascade area. Recreation and tourism remain steady and continue to have had a growing influence on the County's overall economy. The cities of McCall and Cascade depend heavily on the recreation expenditures of seasonal homeowners and tourists. The 1998 estimated median household income of Valley County was $36,300 compared with a statewide median household income of $39,860 (HUD 2000).

Public Facilities, Utilities, and Services

Most Reclamation-owned and IDPR-managed public facilities at Lake Cascade consist of recreation facilities such as campgrounds and day use areas (discussed in greater detail in Section 3.8, *Recreation*). Utility infrastructure varies around the reservoir ranging from limited to fully

developed sites and facilities. Police and fire services are provided for the entire valley by the County Sheriff's Department and several volunteer fire departments and other agencies (discussed below).

Electrical

Idaho Power Company provides electrical service in the area and has expansion capabilities. Electrical power is available to most Reclamation recreation sites, supplying light and power for restroom facilities and maintenance needs. None of the campgrounds have individual electrical hookups, except for SISCRA, which is on lands leased from Reclamation.

A 69-kV transmission line crosses the Gold Fork Arm. No other transmission lines exist or are currently planned across Reclamation lands.

Potable Water

All developed Reclamation/IDPR recreation sites have potable water. The well at the Sugarloaf Recreation Area requires chlorination. Water faucets are distributed throughout the campgrounds and picnic areas. Showers are not available at any Reclamation facility; however, two of the lease holders do provide showers at their facilities (SISCRA and 4-H Club Camp).

Wastewater

Since the 1991 RMP, two new sewer and water districts have been established within the Lake Cascade basin. The recently completed North Lake Sewer and Water District serves about 900 residential hookups in subdivisions around the northeast corner of the reservoir between Arrowhead Point and Tamarack Falls. An even newer sewer and water district has been established to provide utility service to subdivisions adjacent to the southwestern portion of the reservoir, but construction has yet to begin on collection or treatment facilities. Both Cascade and Donnelly operate municipal sewerage systems. Donnelly's system failed in 1998 when excessive infiltration overwhelmed its lift station pumping capacity, resulting in direct discharge of untreated wastewater into Boulder Creek. This event attracted media attention and was attributed to the systems' age and poor condition. Cascade's system has also failed in recent years, but poses less of a threat to the reservoir because it is reputed to be in better repair and most of the system is downstream of the reservoir.

Over the years, toilet facilities in many of the recreation areas have been converted to flush toilets, which has improved performance, particularly during the busy summer season. Flush toilets are generally rendered inoperable and closed in the winter because of maintenance concerns related to frozen pipes. The Van Wyck facilities are connected to the Cascade City Sewer System. The Poison Creek and West Mountain recreation areas and some of the lease holder sites have flush toilets with septic systems.

Dump stations for RVs are available at West Mountain Campground on the west side, and SISCRA and Van Wyck on the east side. There is also a dump station at a private trailer park in Donnelly.

No shore-based dump stations exist for boaters; however, a floating pump-out barge is anchored off the shore south of Van Wyck for this use. Lack of dump stations is one of the most frequently expressed complaints of visitors to the reservoir (pers. comm., R. Brown, IDPR, Cascade, ID, May 11, 1999).

Solid Waste

Dumpsters are provided at all IDPR-managed recreation areas with solid waste being collected by a private contractor and taken to the County transfer station. Use of some of the dumpsters by non-recreation users to dispose of household garbage has, and continues to be, a problem at some locations.

Fire Protection

Wildland fire protection on Reclamation lands bordering Lake Cascade is handled through two separate contracts. These contracts are between Reclamation and the Donnelly Rural Fire Protection Association for the northern half of the reservoir, and between Reclamation and the Southern Idaho Timber Protection Association for the southern half of the reservoir. In addition, the USFS has firefighting capability, including aerial tankers and smokejumpers based in McCall.

Fires have not been a problem on or around Reclamation lands in recent years. The few fires that have occurred typically consisted of brush fires a few acres in size or less, which were caused by campfires or other human sources. A tree was lost to a lightening strike on the 4-H Camp several years ago, but lightning is considered to be less of a threat in lower elevations around the reservoir than in higher mountain areas. Nevertheless, the County's increasing urbanization concerns firefighters because future wildfires could involve developed areas, increasing risk to life and property (pers. comm., J. Daniels, Chief, Cascade Rural Fire District, Cascade, Idaho, August 24, 1999).

Law Enforcement

The Valley County Sheriff's Department provides law enforcement throughout the county, including a contract with Reclamation to provide law enforcement on Reclamation-owned lands and on Lake Cascade. The Valley County Sheriff's Department provides a seasonal sheriff's patrol on the reservoir from Friday through Sunday and on busy weekdays from Memorial Day weekend through Labor Day weekend. The Sheriff berths a patrol boat at each end of the reservoir for fast response anywhere on the water. Some of the more common duties include boat and ramp inspections, responding to emergencies, removing boating hazards, righting capsized catamarans, towing boats that have broken down or run out of gas, and picking up floating debris. The

increasing popularity of cellular phones by boaters and shore observers has aided telephone dispatch (pers. comm., Sgt. Helms, Sheriff, Valley County, Idaho, August 31, 1999).

Boater conflicts on the reservoir are fairly limited because of the size of the reservoir and the fact that different boating activities are taking place in different parts of the reservoir. Anglers and sailors prefer the southern portion of the reservoir while waterskiers and personal water craft operators use the more sheltered waters north of Sugarloaf Island. The main area where user conflicts are known to occur is in Boulder Creek Arm. The protection from the wind and waves afforded by the relative lack of fetch and high banks make this a preferred area for waterskiers seeking flat water. However, many land owners within this narrow arm of the reservoir view this use as incompatible citing safety, noise, and wake-related damage to boat docks as their major concerns.

Non-motorized zones in or adjacent to all of the WMAs were designated in the 1991 RMP. However, a County ordinance was never enacted; therefore, the County Sheriff has no jurisdictional enforcement authority. This has generally not been a problem. However, speeding motorboats occasionally have been reported in these non-motorized zones upstream of the Tamarack Falls Bridge, and personal water crafts are occasionally seen in the Gold Fork Arm above the old highway.

Serious accidents rarely occur on the reservoir, although there was one drowning in 1992, two in 1996, and one in 1997. The Sheriff routinely inspects vessels for safety equipment, issuing warnings and citations for missing safety equipment such as personal flotation devices and fire extinguishers. The reservoir patrols provide safety lectures and literature to violators as well as loaner life jackets when necessary (pers. comm., Sgt. Helms, Sheriff, Valley County, Idaho, August 31, 1999).

The County Sheriff is on-call for campground disturbances that cannot be settled by IDPR personnel or the camp host. In general, vandalism, theft, and other problems are relatively minor; however, alcohol-related misconduct such as domestic disturbances do occasionally require police response. Nuisances such as all-terrain vehicle-riding by juveniles in campgrounds and on adjacent county roads have been an ongoing law enforcement problem. The County Sheriff patrols the area in the winter by snowmobile and conducts educational efforts in local schools on snowmobile safety (pers. comm., Sgt. Helms, Sheriff, Valley County, Idaho, August 31, 1999).

3.11.2 Environmental Consequences

This section discusses the expected positive and adverse impacts of the Cascade RMP alternatives on socioeconomic issues, public services and utilities in the vicinity of Reclamation-owned lands bordering Lake Cascade. A general discussion of these impacts in each of four assessment categories is discussed in the first section, while a more specific presentation of impacts under each of the four alternatives presented in the last section.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

A number of the actions authorized in the 1991 RMP have yet to be implemented. Two of these in particular could have direct or indirect socioeconomic impacts. The first is allowing the development of a marina adjacent to the West Mountain Campground. This development would be a distinct change to the existing low intensity of development and activity on the northwestern shore of Lake Cascade. Direct impacts on local public services and utilities would depend on the type of ancillary facilities and levels of use and activity generated by the marina. Indirect impacts would result from potential commercial and residential development, which could be catalyzed by the new marina. In general, it would be expected that additional water and wastewater facilities would be required. Of particular concern would be firefighting capabilities because of the distance from the nearest fire station. The other unimplemented action of potential concern remaining from the 1991 RMP is motor vehicle use on the railroad grade within the Crown Point Extension. Indirect public service and utility impacts would result from increased development pressure resulting from use of this roadway by adjacent property owners to access their property. However, this could also cause a beneficial socioeconomic impact by expanding the area's economy through additional home building and new residences.

Cumulative Impacts

Construction of the proposed WestRock resort would dramatically and permanently change the type and level of human activity in the valley as described in Section 3.10, *Land Use*. The socioeconomic changes and public service demands resulting from WestRock would be proportionate to the development itself. Accordingly, the project's proponent would be responsible for creating all new public services resulting in beneficial cumulative impacts since sewer, water, emergency medical, fire, and other public services and utilities would be available on the west side of Lake Cascade. These services may potentially be available to Reclamation lands and facilities as well. Likewise, WestRock would add a large number of job opportunities, including needed winter employment. Unfortunately, a large percentage of resort jobs tend to be relatively low-paying service sector jobs, without much career potential.

Implementation of the Cascade Reservoir Watershed Management Plan would have a positive impact on socioeconomic conditions by enhancing one of the region's principal scenic and recreational amenity.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Because of its emphasis on erosion control, community over private uses, pro-active solutions to user conflicts, and monitoring for habitat and resource impacts, numerous beneficial socioeconomic impacts would indirectly result from this alternative. For example, the Preferred Alternative includes a variety of measures to address float plane and snowmobile activity, manage boat docks, restrict boat wakes in sensitive areas, cooperate with the USFS, and address stormwater treatment. The Preferred Alternative also calls for an increased emphasis on regulatory signage and information kiosks. This is key to management of the area, especially because of the limited enforcement resources available to authorities. In addition, the Preferred Alternative would generally result in

positive socioeconomic impacts by enhancing one of the region's major water-based recreation attractions and thereby improving the local quality of life and expanding the area's economy.

Mitigation and Residual Impacts

The Preferred Alternative would not result in adverse socioeconomic impacts warranting mitigation measures. The beneficial impacts are described above.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, under the Preferred Alternative the Crown Point railroad grade would not be open to motorized vehicles. Nevertheless, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative socioeconomic impacts resulting from this difference between the alternatives would be negligible.

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

Alternative B shares many of the beneficial impacts of the Preferred Alternative, such as its emphasis on information and regulatory signage, removal of private uses occurring within RR designated areas, and management of float planes, snowmobile activity, and boat wakes in sensitive areas. This alternative proposes the elimination of all private docks, an action that would likely create opposition and resistance from adjacent property owners, which could create increased management and enforcement problems for authorities. The action of eliminating all private docks and replacing them with community docks or concession-run moorage facilities would also potentially have a negative socioeconomic impact by reducing the adjacent property values associated with those docks. In addition, depending on the type and scale of concession operations, the provision of fuel and supplies at Boulder Creek Recreation Area could potentially result in added concerns for local fire departments. Conversely, the development of this facility at the Boulder Creek Recreation Area would likely have a beneficial socioeconomic impact by creating additional jobs and expenditures thus slightly expanding the local economy.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. However, under Alternative B the west side marina would not be built and the Crown Point railroad grade would not be open to motorized vehicles. Nevertheless, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative socioeconomic impacts resulting from the differences between the No Action and Alternative B would be negligible.

No direct or indirect socioeconomic impacts would be expected from actions to enhance vegetation, wildlife habitat, and natural resources on Reclamation lands under any of the alternatives.

Water Quality, Surface Water Management, and Erosion Control

No direct socioeconomic impacts would be expected from actions to enhance water quality, manage surface water, or control erosion on Reclamation lands under any of the alternatives. However, actions that would be implemented to control erosion under the action alternatives, and enhance water quality under all alternatives could result in improved fishing at Lake Cascade. This would likely attract additional visitors, and indirectly new residents to the Cascade area. Indirectly, this would result in causing a beneficial socioeconomic impact to the area by adding expenditures to local area businesses and expanding the area economy.

Improved or Restricted Access

Access would be affected by changes proposed in the action alternatives for airplane use, motor boat and snowmobile access, vehicular access to the shorelines, and road and trail use. With the possible exception of allowing vehicular access on the railroad grade within the Crown Point Extension proposed in the No Action Alternative and Alternative C, none of the access-related policy directives proposed by any of the alternatives would have any socioeconomic impacts. If the railroad grade were converted into a public road, the potential would be greater for the road to be extended further north in the future, thus potentially increasing development pressure in the area. Indirectly, this could cause a beneficial socioeconomic impact by expanding the area's economy through additional home building and new residences. However, it would also have a negative impact by increasing the demand on public services and utilities.

Improved Facilities, Encroachment, and Miscellaneous

Facility improvements proposed by all of the alternatives would generally result in positive socioeconomic impacts by enhancing one of the region's major water-based recreation attractions and thereby improving the local quality of life and expanding the area's economy. Specific relevant facility-related impacts are discussed for each alternative.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

Under the No Action Alternative, the 1991 RMP would continue to be implemented except when the 1991 policies conflict with Reclamation policy or laws, or when various physical constraints prevent implementation. In such cases, the 1991 RMP would be amended to conform to these mandates and other limitations. As a result, no direct or indirect socioeconomic impacts would be expected to result from this alternative.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

This alternative shares many of the positive impacts of the other alternatives, particularly with regard to the management of higher impact motorized recreation activities, widespread use of informative kiosks and regulatory signage, and cooperation with the USFS. Like the No Action Alternative, Alternative C proposes conversion of the railroad grade to a public road that would create a number of concerns related to expansion of development pressures that could have direct and indirect public service and utility impacts in this area. In addition, use of Sugarloaf Island for day use recreation could add to the management and enforcement burden of authorities.

Cumulative Impacts

The cumulative impacts associated with this alternative would be identical to those outlined for Alternative A with regard to WestRock and the Cascade Reservoir Watershed Management Plan. Similar to Alternative A, the Crown Point railroad grade would be open to motorized vehicles under Alternative C. However, when combined with WestRock and the Cascade Reservoir Watershed Management Plan, the cumulative socioeconomic impacts resulting from the differences between the alternatives would be negligible.

3.12 Environmental Justice

This section addresses impacts associated with the three action alternatives and the No Action Alternative on environmental justice issues in the vicinity of Lake Cascade.

3.12.1 Affected Environment

In February 1994, the President issued Executive Order 12898 that requires all Federal agencies to seek to achieve environmental justice by "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (Executive Order 12898).

This resource management planning and NEPA environmental review process complied with Executive Order 12898 by identifying minority and low-income populations early in the process and incorporating the perspectives of these populations into the decision-making process.

The Department of Housing and Urban Development (HUD) defines low income as 80 percent of the median family income for the area, subject to adjustment for areas with unusually high or low incomes or housing costs. Valley County, with an estimated average annual per capita income of approximately $36,300 (HUD 2000) is only slightly lower than the national average annual per capita income of approximately $38,885 (U.S. Census Bureau 2000b). Based on the HUD standard, Valley County would not be considered a low-income population. The Shoshone-Bannock Tribes, the Nez Perce Tribe, the Shoshone-Paiute Tribes, and the Burns Paiute Tribe were all identified as a potentially affected minority populations in this region.

3.12.2 Environmental Consequences

All four alternatives fully comply with Executive Order 12898. As managing agency of the recreation sites on Reclamation lands, IDPR has the authority to charge, and subsequently adjust fees for the use of these sites. Increases in fees charged at Lake Cascade recreation sites could potentially cause adverse impacts to minority or low income and minority populations due to fee increases that could indirectly result from one or more of the alternatives. Alternative B, and to a lesser extent the Preferred Alternative would have less potential to cause consequential fee increases (i.e., impacts) to these populations through enhancement of low-cost recreation opportunities (e.g., less developed improvements at Crown Point Extension).

Mitigation Measures

No substantial adverse Environmental Justice impacts or residual impacts would result from any of the alternatives; thus, no mitigation measures are required.

3.13 Cultural

3.13.1 Affected Environment

The assemblage of sites in the Cascade area reflects the full range of human prehistory and history in the region, from the Paleo-Indian Period through the historic era. Evidence of human occupation in southwestern Idaho dates as early as 10,000 years before present, and archaeological materials dating from the Paleo-Indian to Proto-historic periods have been documented in west-central Idaho. Paleo-Indian Period isolated artifacts in private collections made at Lake Cascade include one Clovis style and a number of Windust Phase projectile points, indicating the reservoir area has been utilized by human groups for more than 10,000 years.

Geographically, Long Valley lies at the edges of the Plateau and Great Basin culture areas. Ethnographically, the Nez Perce of the Plateau area and Shoshoni (especially tukedeka or Sheepeaters) of Great Basin affiliation visited the area and resided nearby. Use of or association with the RMP area primarily centered around traditional subsistence, medicinal, ceremonial, and religious practices. Current Tribal use of and interest in the resources in or near the RMP area, although now more limited in scope and nature because of the distance from the reservations to Long Valley, continues for the same reasons as in the past.

Documented historical reference to Shoshone-Paiute in the RMP area is meager, but two historical events are remembered by most Tribal members. One, the Sheepeater War of 1878-79, was a series of skirmishes involving soldiers tracking Sheepeater, Weiser, and Bannock people who refused to be relocated to reservation life. The operation lasted three months with the Indians moving throughout the region in and around Long Valley. The other historical event is the account of Chief Eagle Eye, a Weiser leader who also resisted removal to reservation life for years after the Sheepeater War. He succeeded through peaceful avoidance of contact with his white adversaries.

When pursued by army troops, Eagle Eye and his small group stayed hidden in Indian Valley (adjacent to Long Valley) where certain of the Weiser people had traditionally maintained winter camps. Some descendants of Eagle Eye reside at Duck Valley today.

Historic and cultural use of Long Valley by the Nez Perce is established in the oral tradition of the Tribe. Hence, the name for the area of Long Valley is /welu.kitpe/. This translates to a "crooked or winding stream" and the name predates the Lewis and Clark expedition by many years. Also it is known that the general path of the highway from McCall to the city of Cascade follows an ancient trail network utilized by the Nez Perce.

Historically, several Euro-American trappers likely came through Long Valley during the fur trade era, but for the most part, their activities are undocumented. Idaho's early gold mining boom brought some Euro-Americans into Long Valley, although most merely passed through the valley on their way to rich strikes elsewhere. By the mid-1870's, some southern Idaho ranchers began to rely on Long Valley's natural lush hay fields for summer range.

Historic records indicate that Euro-American settlement of Long Valley began in 1883, substantially aided by the appearance of the Oregon Short Line railroad. By 1890 several towns and a saw mill had been established. The arrival of the railroad transformed an economy based on subsistence agriculture into a more diversified commercial economy that supplied both agricultural and lumber products to outside markets. The railroad also serviced several local logging operations and mills. The population in the valley steadily increased until, by 1935, its population stood at about 3,500. In the late 1940's Reclamation constructed Cascade Dam, as a component of the Bureau's massive network of dams, reservoirs, hydroelectric facilities, and canals contrived to bring irrigation waters to the arid lands of southern Idaho and Oregon.

Prehistoric Resources

Prior to filling, the proposed Lake Cascade area was surveyed by Phillip Drucker in 1948, as part of the Smithsonian Columbia River Basin Surveys. Since that time, approximately 30 cultural resource survey projects have occurred in the vicinity of the reservoir, most being smaller-scale surveys done for Boise and Payette National Forests, Idaho Transportation Department, and Reclamation, in response to timber sales, land exchanges, and other land use actions. One of the more definitive surveys was conducted by Renewable Technologies, Inc. in 1991, under contract from Reclamation, for the purpose of supplementing the Lake Cascade Resource Management Plan which had also been completed in 1991. That survey intensively covered an estimated 8,250 acres above and below the reservoir high water line, and recorded or re-recorded 64 prehistoric or historic sites. In 1999, Reclamation contracted separately with the Nez Perce and the Shoshone-Paiute Tribes for traditional cultural properties (TCP) inventories around Lake Cascade.

Thirty eight prehistoric (aboriginal) sites and 41 prehistoric (aboriginal) isolated finds have been recorded around the Lake Cascade perimeter. There is reason to believe that the Lake Cascade area contains intact Paleo-Indian sites dating to at least 10,000 years before present (B.P.). A wide variety of temporally diagnostic projectile points (for example, Cascade and Northern Side

Notched), as well as other artifacts and stone features recovered in the vicinity of the reservoir also indicate extensive aboriginal use of the study area during the early, middle, and late Archaic periods (8,000 to 1,500 B.P.), extending through the Late Prehistoric Period (1,500 B.P. to 200 B.P.).

All sites except 10VY886 (the Peeled Tree site) are lithic scatters including chipped and sometimes ground stone and, in a few cases, one or more fire-cracked rock features. Chipped stone at these sites is represented by projectile points (including an obsidian Clovis projectile point and other lanceolate points); projectile point fragments; other tools (including knives, scrapers, choppers, saws, picks, bifacial tool fragments); and obsidian, basalt, chert, and other crypto-crystalline flakes representing various stages of tool manufacture. The sites appear to be short-term or seasonal use locations.

The distribution of prehistoric sites in the RMP area indicates a strong preference by aboriginal peoples for establishing camps on the west side of Long Valley. The majority of prehistoric sites lie on the west side of Lake Cascade between Gibson and Campbell Creeks. Nevertheless, archaeological sites in general (historic and prehistoric) seem to have a widespread distribution around the entire perimeter of the reservoir. The preference for the west side might be attributed to a number of factors, including easier access to sources of good-quality lithic material in the West Mountains, available water year-round (except possibly in the winter), and a cultural preference for a morning view of the sun (the Nez Perce preferred to camp at locations which allowed a view of the sun as it rose in the morning). Of further interest concerning the distribution of recorded sites on the west side of reservoir is the fact that these sites appear to be on slopes averaging 4.5%, a possible predictor of archaeological site location in other areas of the reservoir.

Recorded archaeological sites have been impacted or are currently being impacted by several actions, including erosion, recreational development, illegal collection of surface artifacts, and livestock trampling. The role of erosion on the current appearance of sites is undeniably dominant, but the current effects of reservoir wave action are less obvious. With the possible exception of Site10VY797 on the east side of Lake Cascade, none of the known (recorded) sites at Lake Cascade are located in areas of substantial shoreline erosion. While erosion is relatively minor, occasional concentrations of artifacts in the reservoir cut bank or immediately below it suggest some active backcutting.

Upon further testing, many of the Lake Cascade sites could yield important archaeological data and might, therefore, be eligible for the National Register of Historic Places. The presence of lanceolate, stemmed, Cascade, and/or Windust projectile points at some sites suggest that the sites have the potential to address questions about the earliest occupants of Long Valley. Lake Cascade sites of the Archaic period might provide information on the transition from dependence on large game to increased reliance on anadromous fish and vegetal foods. Several Lake Cascade sites contain ground stone, suggesting that the development of vegetal food procurement and processing in the region might be reflected in the Cascade materials. Future archaeological testing of key sites is needed to shed more light on the National Register potential of the Lake Cascade sites.

Historic Resources

Sixty one (61) historic resources have been identified in the study area. Four of these sites contain both historic and prehistoric components. Historic site types are dominated by structures and features related to logging and agriculture (including grazing). The study area contains a number of farmsteads, most of which have lost their architectural integrity. Other historic site types identified in the study area include refuse dumps of indeterminate importance; transportation sites including a railroad grade, two bridges, and a culvert; various log structures; a damtender's house, school, and sawmill; and a dam.

Historic resources considered eligible for listing on the National Register of Historic Places include the deck plate-girder bridge (10VY795) over the North Fork of the Payette River immediately east of Cascade Dam, and portions of the railroad grade (10VY800) associated with the Union Pacific Railroad's "Idaho Northern Branch." Both properties are judged significant for their association with early development of the Cascade area and on the basis of aspects of their design and construction.

Traditional Cultural Properties

A survey to identify traditional cultural properties (TCP's) was conducted under separate contracts to the Nez Perce and the Shoshone-Paiute Tribes. For reasons of sensitivity, exact locations are not revealed. TCP's in the Cascade RMP study area include locations on the west side of the reservoir where plant resources were harvested for food sources (for example, wild carrots, chokecherries, bearberries, and white sage) and for medicinal sources (for example, western larch and quaking aspen). Dozens of other plant resources were utilized by the Tribes in the RMP area. Nez Perce place names indicate traditional use of the RMP area and adjacent areas for utilization of plant and animal resources. Both the Shoshone-Paiute and the Nez Perce Tribes are known to have utilized the inner bark of Ponderosa Pine trees as an occasional food source, and at least one such scarred tree (the peeled tree site—10VY886) is reported to exist in the RMP area.

Other classes of sites that might also qualify as TCP's in the study area are hunting, fishing, and animal source areas (for example, bald eagle locations); water sources (springs and headwaters); historical places (for example, battlegrounds, rendezvous sites, sites where ceremonies occurred, and routes traveled by important persons); lookout points (hills or vistas); natural hot springs (for example, the area around Arling Hot Springs); and the confluence of tributaries.

3.13.2 Environmental Consequences

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

Reforestation projects designed to plant seedlings or shrubs could disturb the horizontal and vertical context of artifacts, or in the case of burning associated with haying, contaminate or alter organic material such as wood or bone. Measures to control noxious weeds under all alternatives through spraying projects have the potential to adversely affect archaeological sites by chemical

contamination of radiocarbon samples and possibly other organic remains. Development of additional wetlands, requiring heavy soil-moving equipment, can disturb or destroy archaeological site deposits through compaction and/or scattering of artifacts, thus disturbing both horizontal and vertical context. Inundating new wetland areas can accelerate decomposition of archaeological materials, especially organic materials.

Fencing or excluding cattle from areas would have a positive effect on cultural resources. Threats to archaeological sites would be lessened as a result of reduced compaction of sites and churning of culture material-bearing soils from trampling of artifacts, features, and other site materials. Restricting grazing would also have the secondary effect of improving soil stability and reducing soil loss by enhancing vegetation cover and allowing vegetation to establish, thus lessening the erosive effects of natural wind and water and the adverse effects of these forces on archaeological deposits.

Water Quality, Surface Water Management, and Erosion Control

Any surface water management activities such as restricted motorized boating and establishment of no-wake zones would help to reduce shoreline soil loss from boat-generated waves, thus reducing the potential for damage to archaeological deposits. A system for assisting residents in obtaining permits for shoreline erosion control structures and facilitating issuance of the permits, would likely increase the number of structures installed. More structures equates to more erosion control and less soil loss, enhancing the protection of archaeological sites.

Methods to control erosion around roads or trails, or water channels, that would involve the use of heavy machinery or equipment, have the potential to adversely affect cultural site deposits. Vehicle operation or road grading in association with erosion control can destroy or damage cultural deposits by compaction causing breaking and dissociation of artifacts, or soil movement and churning causing horizontal or vertical mixing of cultural levels and overall loss of context.

Thirty eight prehistoric and 61 historic sites have been recorded around the perimeter of Lake Cascade. Reservoir operations may damage those sites as well as traditional cultural properties, which future testing may determine are eligible for the National Register of Historic Places. Impacts to archaeological sites from reservoir operations typically involve eroding away the soils that surround artifact deposits and moving those artifacts both vertically and horizontally. This destroys scientifically valuable depositional data and exposes artifacts to relic collection. Repeated wet and dry cycles associated with the rising and falling of the reservoir accelerate the deterioration of organic materials in a site (many archaeological sites at Lake Cascade are inundated seasonally). Wakes generated by boats operating near the shoreline can cause bank erosion, impacting archaeological deposits in the eroding areas.

Improved or Restricted Access

Improving access in the Lake Cascade recreation areas by means of increased or improved roads or trails could physically destroy scientifically and culturally valuable depositional data. The building of a road or trail and its subsequent use, by vehicles or pedestrians, can damage intact cultural

deposits, break artifacts, and mix together artifacts from different episodes of occupation. A secondary effect of improved access would be an increase of surface erosion once the road or trail is established, especially on soft, sandy soils which are very vulnerable to damage from increased vehicle access or recreational use. Repeated use strips vegetation that serves to hold sandy soils in place, leading to soil destabilization. Destabilized soils cause vertically distinct cultural layers, representing many occupations, to be deflated into a single, disturbed layer. An indirect effect of improved access for recreational and other purposes would be greater potential for site looting or vandalism.

There is a possibility that known as well as yet-to-be-recorded archaeological sites could be on or adjacent to existing dirt roads used by motor vehicles. Continued use of the road by motorized vehicles could damage the archaeological deposits. Types of damage typically caused by vehicles driving through an archaeological site are artifacts being broken by the weight of the vehicle, and destruction of site's depositional integrity when soft or wet soils containing cultural material are rutted and churned by vehicle tires. Rutting also sets the stage for subsequent erosion.

Most of the recorded archaeological sites and material concentrations are located along the reservoir shoreline, where public use focuses. Site looting has been documented in the Lake Cascade area. Relic collection reduces the scientific value of a site by removing artifacts that can be used to date when a site was used and to interpret its function and organization.

Improved Facilities and Miscellaneous

A variety of facilities would be constructed or expanded, including expanding camping areas, developing or enlarging parking areas, constructing trails, constructing kiosks and interpretive areas, among others. There is a direct correlation between impacts to cultural resources and improved facilities, land development, and other encroachments that modify the surface of the land. Increased use of lands for these purposes increases impacts to archaeological, historical, and traditional cultural properties by directly disturbing or destroying the physical context of artifacts, features, and structures comprising the site. Construction or expansion of facilities would encourage additional visitor days, inviting or attracting more visitors to an area. This would cause an indirect impact to cultural sites through increased potential for vandalism and looting.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

Under Alternative A, the policies and actions prescribed in the 1991 RMP would continue. A cultural resources management plan (CRMP) would be developed that addresses proactive strategies for managing and protecting cultural resource sites, for testing and determining the eligibility of sites to the National Register, and for facilitating consultation with the SHPO and Tribes. Management of cultural sites would also continue to be reactive, with site identification and protection occurring in response to specific Reclamation undertakings, vandalism and relic collecting, and erosive forces within and away from the Lake Cascade pool.

Under the Preferred Alternative recreational developments are also planned for a number of locations on the north, east, and south sides of Lake Cascade. Archaeological sites there are sparse, consisting mainly of lithic scatters, farmsteads, historic dumps, and isolated flakes. Recreational developments for these locations would include new or expanded campgrounds and parking areas, day use sites, restroom facilities, kiosks, non-motorized trails, among other actions. Archaeological and historical sites are reported in most of the RMP areas. Although the sites are scattered and many may no longer retain their integrity, the possibility does exist that significant sites could be directly impacted by future recreational improvements in those areas once specific project locations are determined. An historic dump site has been reported in the vicinity of the Ambush Site and could be impacted by efforts to increase access and parking in the vicinity of the Ambush Site. Future recreational development at the Ambush Site is also likely to affect this potentially significant site itself. Increased use of intact portions of the railroad grade (especially north of Gold Fork) or uses not compatible with preserving the grade, could adversely impact this National Register quality site.

Mitigation

Mitigation will occur if cultural resources are present that are eligible for the National Register of Historic Places, and they are being adversely impacted by reservoir operations or land uses, or are being damaged by natural agents. If an action is planned that could adversely impact an archaeological, traditional, or historic resource, Reclamation will investigate options to avoid the site. Cultural resource management actions for impacted sites will be planned and implemented in accordance with consultation requirements defined in 36 CFR 800, using methods consistent with the Secretary of the Interior's Standards and Guidelines, or for the Native American Graves Protection and Repatriation Act, for remains or items that fall under the purview of that statute.

See Section 5.1.7 for specific cultural resource site protection/mitigative measures applicable to each of the alternatives.

Residual Impacts

The potential for "residual impacts" to mitigated archaeological sites from looting and relic collection exists during and following a site's excavation. In addition, residual impacts may also result from interpretive displays and signs which warn of cultural sites in an area, inadvertently flagging those areas as "hot spots" for would-be vandals and looters.

Cumulative Impacts

Expected cumulative impacts would be slightly less than those described under the No Action Alternative because of less recreation development.

Alternative B—Limited Recreation Development/Increase Natural Resource Emphasis

Reclamation undertakings under Alternative A that could potentially adversely affect cultural resources include: recreational development, continued use and/or expansion at Driftwood Point, West Mountain Campground and Poison Creek, Crown Point Extension and Campground, Van Wyck Park, Big Sage, Blue Heron, Snow Bank, Cabarton; and development of trail systems or access at Buttercup, Huckleberry, Curlew, Pelican Bay, and the Quarry Area.

Cumulative Impacts

Construction of the proposed four-season WestRock resort would result in a large increase in the local population and visitation to the area, putting pressure on existing recreational facilities and locations, and possibly resulting in the development of new forms of recreation. An increased potential for vandalism and site looting would be associated with the increased numbers of visitors. If vandalism or looting were not an objective, the sheer increase in numbers could result in inadvertent physical damage from trampling and compaction of archaeological sites.

Erosive forces acting on archaeological, historical, and traditional cultural properties are accumulative from one annual operational drawdown cycle of the reservoir to the next (from repeated wet-dry cycles, wave action, and flow changes). The impacts are not one-time events, but coincide with the annual cycle of reservoir operations. Hence, each year, a given cultural resource property being affected by reservoir operations is potentially worse off than the previous year. Disturbances to cultural resource sites from vandalism and looting as a result of increased recreational use of an area, are also cumulative. Initial impacts may be imperceptible at first or scarcely noticeable; however, if the elements that contribute to a site's eligibility for the National Register of Historic Places continue to be compromised, the site's integrity is diminished to the point that the site is no longer eligible for the register.

Preferred Alternative—Recreation Development Compatible with Natural Resource Emphasis

Possible erosional impacts from reservoir operations and natural forces, as well as adverse effects from relic collecting would continue under this alternative. Although recreation is emphasized under the Preferred Alternative, recreational developments and activities are more controlled and contained than under the No Action Alternative, thereby lessening the potential for relic collecting relative to the No Action Alternative.

On the west side of Lake Cascade, the shoreline area has been surveyed for archaeological sites, although areas to the west of the shoreline have not. Subsequent survey and testing will very likely reveal those unsurveyed areas to contain substantial archaeological deposits in view of the density of recorded sites along the shoreline. A variety of recreational improvements (such as camping expansions, shelters, restrooms, and additional parking) are envisioned under the Preferred Alternative at Osprey Point, West Mountain, Mallard Bay, Huckleberry, Buttercup, and Curlew. Potential impacts to yet-to-be-recorded archaeological resources and traditional cultural properties can be expected in conjunction with the planned recreational improvements.

Possible erosional impacts from reservoir operations and natural forces, as well as adverse effects from relic collecting would continue under this alternative. However, direct impacts to cultural resources from additional campgrounds, day use sites, restroom facilities, trails, kiosks, parking areas, and other recreational improvements would be less than under the other alternatives since those types of actions would be reduced or non-existent under Alternative B. Accordingly, indirect impacts associated with vandalism and relic collection would be reduced.

Cumulative Impacts

Expected cumulative impacts would be slightly less than those described under the No Action Alternative because of less recreation development.

Alternative C—Moderate Recreation Development/Maintain Natural Resource Emphasis

Erosional impacts from reservoir operations and natural forces would continue under this alternative. However, because Alternative C provides for the highest possible level of expansion and development of recreation sites and facilities, this alternative would result in greater levels of impacts to cultural resources than the other alternatives. The impacts would occur in association with more extensive surface disturbance activities, as well as indirectly through increased relic collection and looting of sites.

Cumulative Impacts

Expected cumulative impacts would be the same as those described under the No Action Alternative.

3.14 Sacred Sites

3.14.1 Affected Environment

Sacred sites are defined in Executive Order 13007 as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion..."

A survey to identify properties of religious or spiritual importance to the Shoshone-Paiute and the Nez Perce Tribes was undertaken for the RMP study area. Because of their sensitive nature, specific site locations are not revealed. The Long Valley area is known to have important sacred meaning to both Tribes. Among the Shoshone-Paiute, there is evidence of sacred sites still being used in the Long Valley area. The importance of the Long Valley area to the Shoshone-Paiute and the Nez Perce Tribes is reflected in the histories, place names, and stories recounted by both Tribes. For example, one of the most prominent figures in Nez Perce history, Chief Red Bear, gained his chieftainship in Long Valley. There he witnessed the arrival of the first white people to the area as well as missionaries.

There are natural and cultural property types in the study area that are considered sacred and religious to the Tribes, which might require special attention by Reclamation in the future administration of the study area. These properties include altars; vision quest sites; burial sites; and geographic features (river and rock features, and natural ponds and lakes).

3.14.2 Environmental Consequences

Assessment Categories

Natural Resources, Habitat, and Cultural Resource Protection and Enhancement

Development of additional wetlands or measures to plant trees in an area could adversely affect Indian sacred sites, especially human burials, by physically disturbing or damaging the site and its contents. The setting and local environment of non-archaeological sacred locations or places could be disturbed to the extent that their regard and use as a sacred site would be severely compromised. Fencing or excluding cattle from environmentally sensitive areas would have a positive effect on sacred sites by reducing physical threats to archaeological sites and burials from compaction and trampling, and by reducing soil loss and subsequent wind and water erosion.

Water Quality, Surface Water Management, and Erosion Control

Surface water management activities such as restricted motorized boating and no-wake zones help reduce shoreline soil loss from boat-generated waves, thus reducing potential physical damage to burials and other archaeological sites considered sacred by the Tribes. A system for assisting residents in obtaining permits for shoreline erosion control structures and facilitating issuance of the permits, would likely increase the number of structures installed. More structures equates to more erosion control and less soil loss, enhancing the protection of sacred sites and their local setting.

Improved or Restricted Access

Any activities which result in an increase of visitors to an area are likely to adversely impact sacred sites—directly, by causing a physical change in the character of the site, and indirectly, by introducing intrusive elements such as noise and changes in viewshed and setting. Conversely, improved access could benefit Indian Tribes if such access facilitates their ability to reach a site of religious or sacred value.

Improved Facilities, Encroachment, and Miscellaneous

Construction and development associated with expansion and improvement of recreation facilities (and other land development) may compromise the physical and spiritual integrity of Indian sacred and religious sites. If the site is an archaeological site, such as a human burial, its contents could be physically damaged or destroyed. Improved facilities are often associated with increased visitor use, which can introduce elements discordant with a sacred site and its "sacredness"—for example, noise, refuse, site looting, vandalism, or simply a greater number of people into a given area. An aspect of "sacredness" likely to suffer because of improved facilities and other encroachment is the

physical setting of the sacred site—the character of that location and how that site is situated and its relationship to surrounding features and open space. A compromised setting is likely to diminish the spiritual qualities of the site from the perspective of Tribal members and practitioners.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

Possible impacts to Indian sacred sites from a continuation of existing management practices in the area of the RMP (or from new management practices or activities) cannot be clearly determined since the specific location of sacred properties is unknown. If sacred sites are located in the area of potential effect of a Reclamation project, their integrity is compromised by actual physical disturbances as well as visual or auditory intrusions resulting in changes in character, feeling, and association of the site. In such cases, their "sacredness" and importance as a religious or sacred site is diminished. As with cultural resources, sacred sites are compromised by vandalism and relic collecting, by land use activities, and recreation and other development.

Cumulative Impacts

Construction of the proposed four-season WestRock resort would result in a large increase in the local population and visitation to the area, putting pressure on existing recreational facilities and locations. An increased potential for vandalism and site looting, and a degraded sacred site environment, could be expected with increased numbers of visitors.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Impacts would be the same as described for Alternative A.

Mitigation

Executive Order 13007 does not authorize agencies to mitigate for the impact of their actions upon Indian sacred sites. However, it does direct them to avoid adverse impacts whenever possible. For future Reclamation actions in the RMP area that could impact Indian sacred sites, Reclamation will consult with Tribes in conjunction with any 36 CFR 800 consultations. Under these consultations, Reclamation will seek means to avoid adverse impacts to the sacred sites.

Residual Impacts

Based on avoiding Sacred Sites, there would be no residual impacts.

Cumulative Impacts

Expected cumulative impacts would be the same as those described under the "No Action Alternative."

Alternative B: Limited Recreation Development/Increase Natural Resource Emphasis

This alternative is basically the same as Alternative A. Because of limited recreation development under Alternative B, potential impacts to sacred sites would be less than for the other alternatives.

Cumulative Impacts

Expected cumulative impacts would be the same as those described under the "No Action Alternative."

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

Because Alternative C provides for the highest possible level of expansion and development of recreation sites and facilities, this alternative results in greater levels of impacts to sacred sites than the other alternatives. The impacts would occur in association with more widespread surface disturbance activities, potentially affecting the physical and spiritual integrity of the sacred site.

Cumulative Impacts

Expected cumulative impacts would be the same as those described under the "No Action" Alternative.

3.15 Indian Trust Assets

3.15.1 Affected Environment

Indian Trust Assets (ITA's) are legal interests in property held in trust by the United States for Indian tribes or Indian individuals. The Secretary of the Interior, acting as the trustee, holds many assets in trust for Indian tribes or individuals. Examples of things that may be trust assets are lands, minerals, hunting and fishing rights and water rights. While most ITA's are on-reservation, they may also be found off-reservation.

The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statutes, and executive orders. These are sometimes further interpreted through court decisions and regulations.

The Shoshone-Bannock Tribes, a Federally recognized Tribe located at the Fort Hall Reservation in southeastern Idaho, have trust assets both on- and off-reservation. The Fort Bridger Treaty was signed and agreed to by the Bannock and Shoshone headmen on July 3, 1868. The Treaty states in Article 4, that members of the Shoshone-Bannock Tribes "shall have the right to hunt on the unoccupied lands of the United States....".

The Shoshone-Bannock Tribes believe their right extends to the right to fish. The Fort Bridger Treaty for the Shoshone-Bannock has been interpreted in the case of State of Idaho v. Tinno, an off-reservation fishing case in Idaho. The Idaho Supreme Court used the canon of construction to

determine the Shoshone word for "hunt" also included to fish. Under Tinno, the Court affirmed the Tribal Members' right to take fish off-reservation pursuant to the Fort Bridger Treaty. (Shoshone-Bannock Tribes, 1994)

The Nez Perce Tribe is a Federally recognized Tribe located at the Nez Perce Reservation in northern Idaho. The United States and the Tribe have entered into three treaties (Treaty of 1855, Treaty of 1863 and Treaty of 1868) and one agreement (Agreement of 1893). The Nez Perce Tribe states their rights include the right to hunt, gather and graze livestock on open and unclaimed lands and the right to fish in all usual and accustomed places. (Nez Perce Tribes, 1995) According to the 1855 Walla Walla Treaty with the Nez Perce, the ceded lands include the northern portion of Lake Cascade.

Other Federally recognized Tribes, the Shoshone-Paiute Tribes of the Duck Valley Reservation at the Idaho and Nevada border and the Burns Paiute near Burns, Oregon do not have recognized treaty rights outside their Executive Order Reservations, but Tribes may have cultural and religious interests in the area of the Lake Cascade. These interests of the Tribes may be protected under historic preservation laws and the Native American Graves Protection and Repatriation Act (NAGPRA). See Sections 3.13, *Cultural Resources*, and 3.14, *Sacred Sites*, for a discussion of other Tribal interests.

3.15.2 Environmental Consequences

There would be no direct impacts to the right to hunt, right to fish, or right to gather under any of the alternatives. Potential impacts to the associated resources would include minor losses of wildlife habitat with the largest losses occurring under the No Action Alternative and Alternative C (see Section 3.5, *Wildlife*).

3.16 Transportation and Access

3.16.1 Affected Environment

Lake Cascade is accessed through two main communities: Cascade on the southeast side of the reservoir, or Donnelly on the northeast. SH-55, directly east of the reservoir, is the main arterial connecting Boise to the south and McCall to the north. SH-55 is maintained by the Idaho Transportation Department (ITD). It is a typical rural, mountain highway with a standard paved width of approximately 24- to 28-feet and 2- to 6-foot gravel shoulders with a speed limit of 55 to 65 mph. Roadway and bridge improvements along SH-55 during the past decade have helped reduce travel time from the north and south. ITD is currently developing an alternative route for a section of SH-55 near the Smith's Ferry area to eliminate some the narrowest and most serpentine stretch of the highway.

Reclamation facilities are accessible off SH-55 at the following locations:

- At Clear Creek on Cabarton Road south of Cascade

- Cabarton Road at the south end of Cascade
- Old State Highway Road at the north end of Cascade
- Minor paved and unpaved roads on either side of the Payette River SH-55 bridge at the north end of Cascade
- Sugarloaf Recreation Area turn-off
- Two turn-offs onto county roads between Gold Fork River and Donnelly
- Tamarack Falls Road in Donnelly

Circulation to and around the reservoir is generally circuitous and inadequately signed, especially along SH-55. Signs directing visitors to Reclamation facilities are inconsistent in graphic style and content, not always fully explanatory, and non-existent at several of the above locations. There is no single place where visitors can obtain maps, find out which campgrounds are not full and acquire other information. However, in 1988, an information booth staffed by Cascade Chamber of Commerce volunteers was constructed on private commercial property at the south end of Cascade adjacent to SH-55. In 1989, an interpretive kiosk was erected at Tamarack Falls.

Local Road System

Lake Cascade is circled by a series of two-lane paved and unpaved roads, as described below.

Donnelly Access

Beginning at Donnelly, the Rosewood Road circles the reservoir for about 1.5 miles and crosses the Lake Fork Arm of the reservoir on a narrow bridge. This 24-foot wide, two-lane paved road is used westbound from SH-55, and intersects Norwood Road, a similar 35 mph facility that runs south. After approximately 1 mile, Norwood Road intersects Tamarack Falls Road, at a 90-degree turn, similar in dimensions to the previous two roads. Tamarack Falls Road is in good condition, but has a 90 degree turn at the junction with Norwood and a 26-foot wide curvilinear causeway across the Lake Fork Creek that is dangerous for high speed traffic. The Tamarack Falls Road passes through a newly developing subdivision area and ends at the Tamarack Falls store, approximately 1.4 miles beyond the Norwood intersection.

West Side Access

Tamarack Falls Road carries recreation traffic to West Side Road, an unpaved county road running along the west side of the reservoir to the south end. A majority of the traffic occurs on the southern (West Mountain) and northern (Tamarack Falls) 3-mile stretches; the long central segment of the road is only lightly traveled. The West Side Road is paved from the Tamarack Falls store to the new WestRock Planned Unit Development site, a distance of about 3 miles. This paved road has been built to the same 24-foot width as the other roads. From the WestRock site south, the West

Side Road is a 25- to 30-foot wide gravel road for approximately 15 miles to the intersection with Lake Shore Drive. In 1988, the county paved less than a mile of the road at the south end of the reservoir.

Cascade Access

The Old State Highway Road through Cascade is in relatively good condition, but, because it is heavily used, it requires considerable maintenance. The city is considering adding a third (turning) lane and bike path in the near future.

The intersection of Old State Highway Road and Lakeshore Drive at the city's golf course and Van Wyck Park boat ramp parking lot lacks traffic control and is potentially dangerous, particularly during the peak use season. The angled intersection of Old State Highway Road and SH-55 is also less than desirable because of the awkward turns motorists must make. Lake Way provides access into the Crown Point area along the west side of Cascade Dam. Vista Point Boulevard was recently constructed to provide additional access into the Crown Point area from north of the dam.

Access to the eastern shore north from the dam to Sugarloaf Peninsula is limited. Sugarloaf Peninsula can be accessed from SH-55 using Stonebreaker Lane. Stonebreaker Lane is approximately the one-third point heading north between the towns of Cascade and Donnelly on SH-55. The area to the north of the dam is mainly subdivisions with private accesses.

Winter Access

The Old State Highway, Tamarack Falls, West Side, and Lakeshore Roads are plowed in the winter, as well as most county and subdivision roads. The 6- to 8-mile section of West Side Road occasionally is not plowed immediately after big storms. IDPR does plow the Blue Heron, Van Wyck Park, Crown Point, and Poison Creek parking lots for winter recreationists.

The county has difficulty plowing the Crown Point subdivisions. They have expressed an interest in acquiring access through Reclamation lands to the west along an abandoned Union Pacific Railroad bed, so that plowing equipment can make a large loop rather than having to turn around on a narrow road on steep terrain.

Transit and Air Access

Visitors may also reach Lake Cascade via Northwest Stages which provides daily round trip bus service along SH-55. Another option is flying as both Cascade and McCall have airports. Cascade can only service small private and chartered aircraft. Recent improvements at the McCall Airport would accommodate not only large private planes, but a potential future commercial commuter service.

Assessment Categories

Natural Resource, Habitat, and Cultural Resource Protection and Enhancement

Depending on the degree of protection proposed in the action alternatives for natural resource, habitat, and cultural resource protection and enhancement, limitations on vehicular access would vary. Transportation and access would be less impacted in areas where recreation use or development takes a precedent over habitat protection. Formalizing access under all the action alternatives would create a more consolidated and organized system, resulting in fewer natural and cultural resource impacts than under the No Action Alternative.

Water Quality, Surface Water Management, and Erosion Control

Roads and trails are substantial sources of erosion. Maintenance activities proposed in the action alternatives would be conducted to reduce erosion and improve the physical condition of the road or trail, increasing its longevity and serviceability, thereby causing less impacts to water quality.

Improved or Restricted Access

The transportation and access system would benefit from any improvements to access provided under the Preferred Alternative or Alternative C and may be impaired by any restrictions, as may be the case under Alternative B. Both beneficial and detrimental impacts to the transportation and access system are discussed in more detail under each of the alternative discussions.

Improved Facilities and Miscellaneous

Alternatives A and C would likely result in greater increases in traffic volume than the other alternatives. Improvements would be made to parking and circulation under all of the alternatives. In general, this would result in having a beneficial effect on the transportation and access system at Lake Cascade. However, if facilities are improved beyond the capacity of a given circulation system and/or access road under any alternative, the overall result would be a detrimental impact to the transportation and access system. Because nearly 86 percent of the visitors to the Lake Cascade area are from Boise, they are probably arriving via SH-55 and the small collector streets that run through Cascade, Donnelly, and the adjacent neighborhoods. Improvements to facilities proposed in all of the alternatives would impact the volume of traffic reaching the recreation areas.

Alternatives

Alternative A—No Action: Continuation of Existing Management Practices

Private docks are currently permitted to shoreline lot owners. However, this is not in compliance with Reclamation policy, so private docks would be reduced by issuing no new dock permits. Community docks would be encouraged. This would be a minor negative impact to access because fewer locations would be available for select private users to access the water. Modifying C/OS requirements to allow docks would improve access by allowing more docks to accommodate more boaters.

Vehicular access to the shoreline and drawdown areas is not actively regulated and currently occurs in many areas of the reservoir. The intent of this alternative is to manage and control access to the

shoreline and drawdown areas, thereby reducing access at most locations where it currently exists, an adverse impact to some users.

The 1991 RMP recommends boat-in access for day use and camping at Driftwood Point. This improvement would result in a net increase in boat-in access to shoreline areas and camping, which would be a substantial improvement for boat-in users.

The 1991 RMP proposed a 150- to 200-slip marina with a 130-space parking lot, as well as a trail system, for the West Mountain and Poison Creek campground areas. None of these improvements have been implemented. Adding these improvements would increase access to the reservoir. Because the 1991 RMP did not identify improvements to West Mountain Road south of the campgrounds, the majority of users would likely access the proposed parking lot and marina from the north, increasing demand on this portion of the transportation system. The result would be increased traffic along SH-55 through Cascade, Donnelly, and along Tamarack Falls Road, possibly overloading the local road system capacity for short periods on busy weekends.

Development of a west side trail system including West Mountain, Poison Creek, Buttercup, Huckleberry, and Curlew campgrounds, as well as the C/OS between all of those areas would improve pedestrian access to the west side area. Expansion of the Boulder Creek area would include a day use area, a boat ramp, and docks. These developments improve access to the area and to the water, improving recreational opportunities, but also adding to local road traffic congestion.

The 1991 RMP allowed for re-opening of the airstrip under an agreement with State aeronautics for fly-in day and overnight uses. This would be an improvement to access by air, which would permit a type of use that does not currently exist. However, this agreement has not been secured, the airstrip has not reopened, and it is not likely to do so.

The 1991 RMP allowed for development of vehicular access along the old railroad grade in the Crown Point Extension area. In addition, added parking areas; RV, group, and tent camping; a boat launch and docks; and a trail system were proposed. However, none of these improvements have been completed. Construction of these improvements would negatively impact the adjacent transportation system by increasing traffic on SH-55, through Cascade, and along the old SH-55 to the reservoir. Access to the Crown Point Extension, currently only by non-motorized approach, would be increased, improving access for a large number of potential users. Current pedestrian users of the old railroad grade would be adversely affected as vehicle traffic increases.

Expansion of the Crown Point Campground, as proposed under the No Action Alternative, would improve user access to the area, but would also negatively impact the transportation system serving this facility by increasing traffic volumes. The impact would occur along the same routes as described in the Crown Point Extension.

Development of the 250-slip marina, parking lot, four-lane boat launch, expanded day use area, expanded RV and tent camping, a paved shoreline trail, and other amenities at Van Wyck Park

would result in a beneficial impact to boater access on the reservoir. However, marina development would negatively impact SH-55 and access through Cascade by increasing traffic volumes.

Improvements to Big Sage under the No Action Alternative included the addition of 35 new RV camp sites with hookups and one group RV campground. If these improvements were implemented, they would have a negative impact on Lakeshore Drive by increasing traffic on this road, especially on weekends.

Cumulative Impacts

The WestRock development would likely have a substantial impact on the transportation system in the Lake Cascade area. The developers anticipate the creation of approximately 3,540 jobs onsite and approximately 1,865 jobs offsite (Sno Engineering et al. 1998). Full build-out of the development is anticipated in 2014. The Conditional Use Permit Application (Sno. Engineering et al. 1998) for the WestRock development describes impacts to the transportation system in detail. The WestRock development would substantially increase traffic on the SH-55 corridor from Boise to the junction with SH-95 at New Meadows. Other local roads impacted by the increase in traffic would be Tamarack Falls Road and the West Mountain Road. The projected increase in traffic volumes to 16,000 vehicles per day west of Donnelly following full WestRock build-out substantially greater than the July 4th 1999 weekend traffic maximum volume of 2,500 vehicles per day. This will have a substantial adverse impact on the local transportation system and on access to Reclamation recreation facilities on the west side of Lake Cascade. Towns impacted would include Banks, Cascade, Donnelly, Lake Fork, McCall, and New Meadows. The residents of several subdivisions near Donnelly and along Tamarack Falls Road would experience large increases in traffic volume.

The application describes in detail the degradation of the level of service along SH-55. Six levels of service are used in transportation studies. They range from A, which is the best operating condition, to F, which is the worst operating condition (unacceptable stop and go conditions). With the addition of the WestRock site, the application predicts that the summer peak hour events would, in general, result in a drop of approximately one level of service (such as from level of service B to level of service C). Impacts in the winter are predicted to be more severe, typically resulting in a drop of two levels on the level of service for peak hour events. These values are based on traffic counts from seven locations on SH-55. Several particularly challenging locations are the Rainbow Bridge, the canyon north of McCall to New Meadows, and canyon section of highway north of Banks.

The Valley County road system would be impacted as severely as the state highway system. Traffic counts were taken on the West Mountain Road south of the proposed WestRock project site and at the Tamarack store and on the county road at Donnelly. Predictions show that level of service is expected to drop from A

to E at the Tamarack Store and from A to D at Donnelly during the winter peak hour events. During summer peak hour events, the report predicts a drop in level of service from A to C at the Tamarack Store and Donnelly.

The lowering of level of service on county and state roads would cause a "...reduction in operating speeds, lost time, congestion, greater safety risks, and general frustration to motorists during peak travel periods" (Sno. Engineering et al. 1998).

Implementation of the TMDL program would not have any cumulative impacts on transportation.

Cumulative impacts from RMP actions generally involve higher traffic volumes associated with recreation site development.

Preferred Alternative: Balanced Recreation Development and Natural Resource Emphasis

Under the Preferred Alternative, no new permits would be issued for private docks in RR areas. However, existing permits would be renewed, and new community docks would be permitted if they replace existing private docks. This would potentially result in a beneficial impact by improving access to the reservoir for boaters.

Under the Preferred Alternative, vehicular access to the shoreline and drawdown areas would be prohibited around the entire reservoir, except Mallard Bay (contingent on monitoring). Currently, access is not regulated and no specific direction is provided on where to restrict access, so vehicles are driven on the shoreline to reach fishing areas. The drawdown areas are particularly attractive for driving. The restrictions, if enforced, would substantially decrease the current ad hoc access occurring along the shoreline and within the drawdown area causing a negative impact on vehicular access to these areas.

Pedestrian access would be allowed and access to the full-pool shoreline would be improved at several locations for people with disabilities. This would not change pedestrian access and would improve access for people with disabilities.

At developed recreation areas, moorage is currently limited to loading and unloading only. The Preferred Alternative would limit the unloading time to 1 hour. Reduction in loading and unloading time could help reduce congestion in the area.

The Preferred Alternative would allow for take-offs and landings of float planes in the main body of the reservoir only, with taxiing allowed in all other motorized areas. The FAA would be responsible for enforcement. This additional control of float plane access would not create a reduction in access, although it may create a minor inconvenience for a very small number of users by requiring longer taxiing distances.

Under the Preferred Alternative, habitat protection and enhancement measures would potentially reduce seasonal pedestrian access in WMAs around the reservoir. The proposed action suggests closing any newly developed trails that appear to be detrimental to wildlife and habitat. Since these trails do not exist now, seasonal closures would have no effect on existing access in WMAs.

Access to Driftwood Point would be the same as described in the No Action Alternative. However, if a maintenance access cannot be provided to the site, the Preferred Alternative would convert Driftwood Point to a C/OS designation and would eliminate the boat-in access and current use. This would result in a net reduction in access to the site by boaters compared to access proposed in the No Action Alternative.

The Preferred Alternative would expand the Osprey Point facilities. Access improvements would include a staging area for winter use, development of a trail to a wildlife viewing area, and provision of cross-country ski trails. Expansion of the site facilities would draw more users to Osprey Point, creating more traffic along the West Mountain Road and the roads that feed into it. This would have a minor negative impact on the transportation system in this area.

The Preferred Alternative would designate Mallard Bay as a C/OS area, including formalized parking and monitored access to the shoreline, day use facilities with a focus on shoreline fishing, and development of seasonal trails. The improvements proposed in the Preferred Alternative would generally provide an increase to both vehicular and pedestrian access, especially to the shoreline, resulting in improved access and parking.

The Preferred Alternative would allow a smaller marina for the West Mountain and Poison Creek campground areas compared to the No Action Alternative. The west side trail system would be developed and the area would be converted from C/OS to Recreation. Compared to the No Action Alternative, access would decrease at the marina, but increase on the trail system. Access to the proposed marina and associated traffic impacts would be less under the Preferred Alternative than under the No Action Alternative. This would have a positive effect on both reservoir boat traffic as fewer boats could be accommodated and local roads because of slightly less traffic.

No impacts would occur to the transportation and access system under the Preferred Alternative for the Buttercup, Huckleberry, and Curlew campgrounds. However, winter access would be substantially improved in this area, including snowmobile parking areas north of Huckleberry, expanded plowing along right-of-way on West Mountain Road, and plowing into other west side recreation areas as parking is needed. Although no winter traffic counts are provided, it is anticipated that winter traffic would be much lighter than summer, and additional traffic during the winter months would not be a substantial impact to the county highway.

Improvements to the Boulder Creek Recreation Area under the Preferred Alternative would include additional parking and extension of the boat ramp. This is an improvement to the transportation and access system over the No Action Alternative.

The Preferred Alternative would increase access to the Gold Fork Arm and WMA by providing pull off interpretive displays, parking, and non-motorized boating access.

Access to the airstrip would be modified by the Preferred Alternative compared to the No Action Alternative. This alternative would not allow fly-in uses and would convert land use designation to WMA. By not allowing fly-in use, this alternative would eliminate potential access to the reservoir by plane, other than float plane.

In general, the actions proposed in the Preferred Alternative for the Crown Point Extension would decrease access to the area compared to the No Action Alternative. No RV or group camping is proposed; instead, day use areas are suggested, except for a small amount of hike-in and boat-in camping. However, this alternative would allow access to the southern-most pocket of the area, near Crown Point, to be accessible under uniform accessibility guidelines. In addition, interpretive hiking and biking trails providing access to the shoreline and linking Vista Point and Cascade would be allowed. This proposal would not allow north and south vehicular access along the old railroad grade, which would be a reduction in vehicular access compared to the No Action Alternative, but an increase in non-vehicular access. Compared to current conditions, there would be no change in access along the railroad grade.

Improvements to the Crown Point Campground would be slightly less extensive in the Preferred Alternative than the No Action Alternative, although hiking and biking trails would be included to access the shoreline. This would be an improvement to the access in the area. Other modifications are minor and would not noticeably impact the transportation and access system in the area.

Development of an overlook at the quarry would be an access improvement and is included in both the No Action and Preferred Alternatives. However, the Preferred Alternative would also include development of a non-motorized trail system and a parking or staging area for the Crown Point Extension area. These developments would improve access in the area.

The Van Wyck Park improvements under the Preferred Alternative would include a 400-slip marina as opposed to the 250-slip marina proposed in the No Action Alternative. A bigger parking lot would then be required. Basically, all other improvements would be the same as the No Action Alternative. This increase in volume of the marina and parking area would improve reservoir access for boaters. Increased traffic on SH-55 and through the town of Cascade would be adversely impacted by the increased traffic volumes.

North-south non-motorized trails linking Cabarton, Blue Heron, and Snow Bank would be allowed under the Preferred Alternative. This would be an improvement to the pedestrian access in the area and to the reservoir shoreline and would have a beneficial effect on access.

Depending on the measures suggested, erosion protection actions at Snow Bank might reduce access to the shoreline. In general, shoreline protection measures throughout the Cabartons campground area could reduce shoreline access. This may restrict access at some locations but would have only a very minor adverse effect on pedestrian access.

The Preferred Alternative would allow development of designated non-motorized (no ORV/ATV) trails and would expand existing parking in the Willow Creek WMA. This would be a positive impact on access to this WMA compared to the No Action Alternative.

Improvements to access in the North Fork Payette Arm would include development of non-motorized trails along the northwest side and throughout the arm, designation of non-motorized boat put-ins and take-outs, and increased snowmobile parking along West Mountain Road. Depending on the size and popularity of the boat put-in and take-out, the transportation system could be negatively impacted. Tamarack Falls Road would experience slightly more traffic because of additional users. These access improvements are not included in the No Action Alternative.

The Preferred Alternative would allow several access improvements to the Donnelly City Park within the Lake Fork Arm that would not occur under the No Action Alternative. Access improvements would include development of non-motorized (no ORV/ATV) trails, public moorage facilities (as feasible), and boat services such as fuel. These additions would attract more users and would increase traffic through Donnelly to the park compared to the No Action Alternative. This would be a negative impact on the transportation system, but a positive impact on the access to the area and reservoir.

Improved parking, better signage on SH-55, and improved safety would all be access improvements at the Hot Springs Creek WMA and result in beneficial impacts to access compared to the No Action Alternative.

Access improvements to Vista Point and vicinity would include development of a non-motorized trail system, trail access to the shoreline, and trail linkage to Sugarloaf Peninsula and Crown Point and would result in beneficial impacts to pedestrian access compared to the No Action Alternative.

Mitigation

Upon development of more detailed plans for planned improvements (e.g., Van Wyck marina), predictions of increased traffic volumes would be more clearly defined. Mitigation to reduce congestion could include measures such as the installation of left hand turn lanes, pavement widening, or noise abatement where necessary. Specific mitigation requirements would be determined during site-specific facility designs.

Residual Impacts

With implementation of mitigation measures, the impacts related to traffic congestion described previously would persist but to a lesser and likely negligible degree.

Cumulative Impacts

Cumulative impacts would be essentially the same as described for the No Action Alternative. However, some recreational facilities proposed under the No Action Alternative would not be developed under the Preferred Alternative. Therefore, the cumulative effects would be slightly less, except for those associated with the marina at Van Wyck Park. Cumulative impacts from WestRock and the TMDL process would be the same as described for the No Action Alternative.

Alternative B—Limited Recreation Development /Increase Natural Resource Emphasis

Alternative B would eliminate all private docks in RR areas, and only permit new community docks or concession-run moorages that would serve shoreline and inland lot owners as well as the general public. This alternative would reduce the actual number of accesses, but create a more organized and equitable system of dock access for the general public, a beneficial effect on boat access. In addition to these proposed modifications, this alternative would allow boat launch access in C/OS areas on a case-by-case basis. Although numerous individuals would lose their private accesses to the lake with this alternative, the net impact to access would be negligible because of the addition of launches in the C/OS areas and increased organization of community docks. A future full accounting of individual docks for potential removal and the number and location of community docks to be installed would have bearing on the extent of this impact.

Alternative B would convert Driftwood Point designated area to C/OS. This designation would allow no access, thus reducing potential access and use of the area compared to the No Action Alternative, a minor adverse effect on future access to this area.

A staging area for winter use at Osprey Point would provide improved access to the area during winter months, as compared to the No Action Alternative.

Mallard Bay would be designated as a WMA under this alternative and parking would be formalized to prohibit vehicular access to the shoreline. Restriction of vehicles from the shoreline would be a reduction in access for current users compared to the No Action Alternative.

Alternative B would allow much less recreational development for the West Mountain and Poison Creek campground areas compared to the No Action Alternative. Although a day use area would be added, the marina would not be allowed. This would be a reduction in general and boating access to the area as compared to the No Action Alternative. The reduction in vehicles anticipated for the marina and other planned facilities compared to the No Action Alternative would be beneficial for the West Mountain Road and other approach roads because of the reduced traffic volumes.

Compared to the No Action Alternative, winter access would be substantially improved in the Buttercup, Huckleberry, and Curlew areas, including provision of snowmobile parking areas north of Huckleberry and exploration into additional plowing along right-of-way on West Mountain Road. Depending on the current and predicted snowmobile use, an increase in traffic arriving at the

snowmobile parking areas would be anticipated. This would cause relatively minor adverse impacts on local roads because of increased traffic on weekends.

Alternative B would allow the development of boat services such as fueling and supplies at the Boulder Creek Arm area. This would be an additional draw for boat users, and create more boat as well as vehicle traffic. Compared to No Action, this would benefit boat access but result in more boat traffic in an already congested area and increase traffic volumes on local roads, both adverse impacts. The C/OS area along both sides of the Boulder Creek Arm would have cross country ski and non-motorized (no ORV/ATV) trails developed. This would be an improvement to pedestrian access over the No Action Alternative.

Alternative B would increase access to the Gold Fork Arm and WMA by providing a limited, non-motorized trail, a non-motorized boating access, and a limited day use area. All actions would improve access with positive effects compared to the No Action Alternative.

Alternative B would reduce proposed improvements and overnight access to the Crown Point Campground, adversely affecting vehicular access compared to the No Action Alternative but avoiding impacts on current pedestrian users.

The Van Wyck Park improvements under Alternative B are the same as under the No Action Alternative, except that additional camping would be eliminated under Alternative B. This would create a minor decrease in access to the area as compared to the No Action Alternative, an adverse impact. However, adverse impacts of more traffic under the No Action Alternative would be somewhat lower under Alternative B.

Trail development in the Big Sage and Cabartons area would be the same as the Preferred Alternative. Alternative B would change access to the Big Sage area as compared to the No Action Alternative by eliminating the RV camp sites and the RV group campground. Alternative B would convert the designation of the Big Sage area to C/OS. Reduction of recreation opportunity would reduce the number of vehicles traveling to and from the site, which would create a positive result of lower traffic volumes on the approach roads, Lakeshore Drive, and SH-55.

Alternative B would allow development of designated non-motorized (no ORV/ATV) trails and expansion of existing parking in the Willow Creek WMA. This would be a positive impact on access to this WMA as compared to the No Action Alternative because of the improved pedestrian access.

Improvements to access in the North Fork Payette Arm include development of non-motorized trails, which would improve pedestrian access to the area. Winter access would be improved under this alternative by providing snowmobile parking in the southern portion of the area. Both actions would result in benefits to access compared to the No Action Alternative.

Alternative B would allow limited trail development in the North Lake Fork Arm. Although the impact would be fairly minor, this would be an improvement to pedestrian access over the No Action Alternative.

Beneficial impacts to pedestrian access at Sugarloaf Peninsula and Vista Point and vicinity would be the same as described for the Preferred Alternative.

Cumulative Impacts

Cumulative impacts from RMP actions would generally be the same as described for the Preferred Alternative. Minor improvements in pedestrian access would occur compared to the No Action Alternative. Cumulative impacts from WestRock and the TMDL program would be the same as described for the No Action Alternative.

Alternative C: Moderate Recreation Development/Maintain Natural Resource Emphasis

The recommended action and impacts regarding private docks and RR areas would be the same for Alternative C as for the Preferred Alternative. This could result in a beneficial impact by improving access to the reservoir for boaters compared to the No Action Alternative. Vehicular access to the shoreline and drawdown areas would not change substantially between Alternative C and the No Action Alternative.

Access impacts from moorage policies and boat launching at developed recreation areas would be the same as Alternative B, and would improve boat access compared to the No Action Alternative.

This alternative would allow expansion of Osprey Point to include a more formalized dormitory or lodge. The expansion would also include parking areas and group and RV camping. An expanded network of seasonal trails would provide improved pedestrian access. Overall access to this area would improve compared to the No Action Alternative. Increased traffic congestion on West Mountain Road would be a negative impact because of the higher traffic volumes, especially on weekends.

Development of Mallard Bay Area would include formalized parking, vehicular access to the shoreline, day use facilities, shoreline fishing, and seasonal trails. Although camping would not be provided in Alternative C, vehicular and pedestrian access to the shoreline would be provided with additional pedestrian access on trails. This would maintain current vehicular access, similar to the No Action Alternative. Pedestrian access would be improved compared to the No Action Alternative.

Alternative C would allow development of West Mountain and Poison Creek campgrounds as described in the Preferred Alternative, with similar impacts.

Shoreline Access

Shoreline access is most restricted in the northeast area where subdivisions are prevalent. Roads into these areas are circuitous and unsigned. It is difficult to find specific locations without detailed subdivision road maps. Few access easements to the reservoir are provided between privately owned lots, which in some cases occupy miles of the shoreline. Public access along the shoreline is also constrained in this area because of the lack of public land at the high water line and the presence of improvements that infer private ownership (for example, individual docks and retaining walls).

Shoreline access is further limited in those areas without public roads, most notably from Sugarloaf Peninsula to Arrowhead Point, where land is predominantly in permanent AEs. Parts of the Sugarloaf and Duck Creek areas are inaccessible when wet. The entire lower west shoreline is inaccessible to boaters late in the season as the water recedes far beyond the existing roads and facilities. The shoreline between Crown Point and Vista Point has unimproved roads and an abandoned railroad bed running through it, but vehicular access has been restrained by Reclamation because of the lack of facilities and management capability. Efforts to keep vehicles out have been ineffective so far and have led to destructive detours. In general, wherever visitors are not physically constrained, they would leave roadways and park near the shoreline or on the beaches.

3.16.2 Environmental Consequences

This section discusses the impacts of the alternatives on the transportation and access system in the Lake Cascade resource management area. The transportation and access system consists of two parts:

- Physical condition and existence or non-existence of the accesses and roads
- Operational ability of those roads and accesses

No detailed traffic volumes are available at this time, so specific comments on level of service and average daily traffic cannot be prepared. Based on observations provided by site visitors in a 1999 survey, they perceive relatively little crowding, indicating the level of service of the existing transportation system adequately handles the volume of traffic currently using the area. The survey, which contains visitor counts and more detailed information, is more fully discussed in Section 3.8, *Recreation*. A more detailed evaluation of traffic in the area cannot be conducted without further study. However, it can be anticipated that peak traffic events occur during holiday weekends; these can stress the level of service of the transportation and access system but are not benchmark numbers.

Development of a west side trail system, including West Mountain, Poison Creek, Buttercup, Huckleberry and Curlew campgrounds, would be included under Alternative C. Also, exploration into expanding the existing recreation sites would be considered under this alternative. This would greatly increase access to the northwest shore recreation sites and pedestrian access to the reservoir, both positive impacts. Traffic volume would increase on West Mountain Road, a negative impact to the local transportation system compared to the No Action Alternative.

Winter access to the northwest recreation sites would be the same as described in the Preferred Alternative, which could be a benefit for snowmobile access but cause some additional congestion on West Mountain Road on weekends compared to the No Action Alternative.

Improvements to the C/OS areas along both sides of the Boulder Creek Arm would consist of formally developed non-motorized and motorized trails and cross country ski trails. This would be an improvement to access for motorized vehicles compared to the No Action Alternative, which are currently not allowed in this C/OS. Allowing motorized vehicle access would be an adverse impact on current non-motorized access because of conflicts between users. The improvements do not include a parking area; this would be necessary, especially in winter for skiers. Lack of a parking area and additional traffic through the residential neighborhoods would be a negative impact.

Alternative C for the C/OS on the north side of the arm, west of the old railroad grade on the Gold Fork Arm and the WMA, would be the same as Alternative B except that the day use area would be larger and a second take out point would be developed. This would result in increased access to the area for non-motorized boaters compared to the No Action Alternative.

Alternative C would not re-open the airstrip, but would allow boat-in and hike-in camping and day use. This would provide for an increase in boat-in and hike-in access to this area, a beneficial impact compared to the No Action Alternative. The airstrip has been closed for many years so there would be no effect on current use.

Alternative C would allow ORV/ATV use on the Crown Point Road and along designated roads and trails to access the Crown Point site road system and the associated shoreline access. This would be an increase in access for and beneficial impact on ORV/ATV users compared to the No Action Alternative. However, this would be an adverse impact on pedestrian users and access.

The Crown Point Campground, just south of the extension area, would be developed as described for the No Action Alternative, with the addition of a non-motorized trail for shoreline access and linkage to the north and south. This alternative improves pedestrian access to the shoreline and nearby sites, a beneficial impact compared to the No Action Alternative.

The Van Wyck marina would be as large as 500 spaces, requiring substantially more parking and other transportation improvements than the No Action Alternative. Impacts on the existing transportation infrastructure would be greater.

Proposed development in the Big Sage area under Alternative C would have slightly fewer campsites and no RV sites, resulting in somewhat decreased access compared to the No Action Alternative. However, there would be an improvement (decrease) in traffic on Lakeshore Drive and other approach roads.

Expansion of Blue Heron and Snow Bank under Alternative C would result in no net change to the transportation and access system as compared to improvements under the No Action Alternative. At Cabarton, Alternative C would allow for improvement to pedestrian access compared to the No Action Alternative by providing a non-motorized trail with north-south linkage.

Proposed access improvements and impacts to the Willow Creek WMA would be the same as those under Alternative B. Access would benefit from these actions compared to the No Action Alternative.

Alternative C would formalize the existing ad hoc non-motorized trail system within the North Fork Payette Arm and would expand the system to include new trails as possible. This would be an increase in pedestrian access to the area, a beneficial impact. Some form of parking would be necessary at trailheads to accommodate this access. Winter access to the area would be the same as that recommended under Alternative B, also an improvement compared to the No Action Alternative.

Pedestrian access improvements would be allowed in Alternative C. Non-motorized trails and pull-off parking would be provided in the North Lake Fork Arm. Both would be beneficial impacts on access compared to the No Action Alternative.

The Donnelly City Park, identified under the South Lake Fork Arm, would be developed as described under the Preferred Alternative, with benefits for access but minor adverse impacts on local traffic volumes compared to the No Action Alternative.

Alternative C would allow several access improvements at the Hot Springs Creek WMA. Such improvements would include a non-motorized seasonal trail, an enlarged parking space next to SH-55, and a potential parking lot and trail at the Hembry Creek Wetlands. These actions would all have beneficial impacts on access to the area compared to the No Action Alternative. Depending on the location and layout of the parking space near SH-55, safety may be an issue and should be considered.

Alternative C would allow for the addition of ORV/ATV access to existing trails at Vista Point and vicinity. This would improve access for all-terrain vehicles in the area as compared to the No Action Alternative. However, this would be an adverse impact on pedestrian use because of conflicts with motorized use.

Cumulative Impacts

Cumulative impacts from RMP actions, WestRock, and the TMDL process would be the same as described for the No Action Alternative.

4.0 Consultation and Coordination

4.0 CONSULTATION AND COORDINATION

4.1 Public Involvement

Reclamation's approach to the RMP and EA was to develop a dialogue with local stakeholder groups. The goal of the public involvement process was to make sure that all stakeholders, including the general public, had ample opportunity to express their interests, concerns, and viewpoints, and to comment on the plan as it was developed. By fostering two-way communication, Reclamation was also able to use the talents and perspectives of local user groups and agencies during the alternatives development process.

Reclamation's public involvement process involved four key components:

- **Newsbriefs**—A newsletter was initially mailed to more than 1,300 user groups, nearby residents, and agencies. The mailing list was continuously expanded as more stakeholders were identified.

- **Public Meetings/Workshops**—Three sets of public meetings were included in the process. Two sets were held prior to the release of the Draft EA. The final set was held in January/February 2001. Each meeting set consisted of two meetings: one in Boise and one in Cascade.

- **Ad Hoc Work Group**—This group consisted of approximately 20 representatives from interested groups and agencies. They met throughout the development process to identify issues, and assist with RMP update and alternatives development.

- **RMP Study Web Site**—The newsbriefs, draft materials, and meeting announcements were continuously updated at http://www.pn.usbr.gov/.

Prior to the release of the Draft EA, Reclamation provided six newsbriefs, held two sets of public meetings, and held six Ad Hoc Work Group workshops. An additional newsbrief and one additional set of public meetings occurred during the public comment period.

In January 1999, the first newsbrief introduced the RMP process, announced the first set of public meetings, and provided a form for submitting issues and initial comments on the management and facilities at Lake Cascade. More than 200 of these response forms were returned. The results of the mail-in form and the issues raised at the first public meetings were summarized in the second newsbrief, mailed June 1999. The issues were listed in a table with the number of responses for each issue. The third newsbrief was mailed in November 1999 and provided an update of the Ad Hoc Work Group process. The fourth newsbrief in February 2000 announced the second public meetings, summarized the draft goals and objectives of the RMP, and summarized the alternatives being considered. The fifth newsbrief was mailed in March 2000 to clarify questions raised at the February public meetings. A sixth newsbrief was mailed prior to the release of the Draft EA to

summarize the alternatives and announce the third and final set of public meetings. The follow-up newsbrief was sent in March 2001, which solicited input on a potential change to the Preferred Alternative. A final newsbrief will be sent out in October 2001 that will summarize the final RMP.

The first set of public meetings was held February 10, 1999, in Boise, and February 11, 1999, in Cascade. The purpose of these meetings was to conduct public scoping of the issues at Lake Cascade. Approximately 50 people attended the Boise meeting and 70 attended the Cascade meeting. Reclamation provided information about the RMP planning process, then the participants broke into small work groups to discuss important issues and opportunities the RMP should address. The second set of public meetings was held February 16, 2000, in Boise, and February 17, 2000, in Cascade. Approximately 97 people attended the Boise meeting and 86 attended the Cascade meeting. The meeting followed a similar format, beginning with presentation of the alternatives and RMP draft goals and objectives, and following on with small group discussions. The final set of public meetings was held on January 31, 2001, in Boise, and February 1, 2001, in Cascade. Approximately 67 people attended the Boise meeting and 58 attended the Cascade meeting. These meetings were conducted as public hearings in addition to open-house style information style displays staffed by Reclamation personnel.

The Ad Hoc Work Group met in April, July, September, and October 1999; January and March 2000; and June 2001. As part of the July 1999 meeting, the group spent a day touring the Lake Cascade Study area and becoming more familiar with the issues. The 22 members were of considerable assistance in the alternatives development process. A wide variety of viewpoints were included in the group. The Preferred Alternative was arrived at through Ad Hoc Work Group discussions, public comments from the second set of public meetings, and the recommendations of agency scientists and planners. The entities represented in the Ad Hoc Work Group are listed in Table 4.1-1.

Table 4.1-1. Ad Hoc Work Group

Agriculture Representative	Idaho Department of Parks and Recreation (IDPR)
Boulder Creek Homeowners Association	Idaho Department of Fish and Game (IDFG)
Cascade Chamber of Commerce	Idaho State Snowmobile Association
Cascade Reservoir Association	Local Resident—Off-Road Vehicle Recreation Interest
Cascade Reservoir Coordinating Council	Shoshone-Paiute Tribes
Citizen at Large/Cascade High School	Southern Idaho Sailing Association
City of Cascade	Valley County Commissioners
City of Donnelly	Valley County Waterways Committee
Crown Point Homeowner's Association	Vista Point Homeowner's Group
Donnelly Chamber of Commerce	West Mountain Homeowner's Group

Table 4.1-1. Ad Hoc Work Group

Good Sam Club	U.S. Forest Service (USFS)

4.1.2 Summary of Public Comments

Reclamation's Draft EA of the Lake Cascade RMP was released for public review on December 20, 2001. The public was afforded 60 days to review and provide comments on the Draft EA. About halfway through the public review and comment period, Reclamation held a set of two public hearings (one in Boise and the other in Cascade) to solicit public testimony on the Draft EA. At these hearings, attendees had the choice of either providing their comments verbally via formal testimony recorded by a court reporter or by filling out a comment form provided upon entry to the hearing. During the comment period, a change was made to the Preferred Alternative regarding the airstrip, as described later in this section. This concept was not part of the Preferred Alternative as presented in the Draft EA. Therefore, Reclamation sought input on this potential change to the Preferred Alternative and extended the comment period until March 28, 2001, to provide the public an opportunity to consider this potential change and provide comments.

Reclamation thanks all of those who provided comments. The public comments, along with responses, are provided in Appendix D. Overall, comments focused on four main subject areas: re-opening the airstrip, using the Crown Point Road, boating the Boulder Creek Arm, and ensuring water quality. Several other subjects were also addressed, as listed in Table 4.1-2, which appears at the end of this section.

By far, the largest number of comments (approximately 150) came from proponents advocating that the State airstrip adjacent to Lake Cascade be re-opened as part of the Preferred Alternative, as was originally proposed in the 1991 RMP. The 1991 RMP proposed re-opening the airstrip for recreational fly-in use, and efforts were made to accomplish it. Before the airstrip can be re-opened, however, a land transaction is required between Reclamation and the private agricultural easement holder of this parcel. This transaction has not been successful to date; therefore, the airstrip never re-opened. Because Reclamation was not aware of the interest of proponents of the airstrip earlier in the RMP update process and due to the seemingly difficult effort regarding the land transaction, as well as the re-occupation of a nearby nest by a pair of bald eagles, it was decided not to include re-opening the airstrip as part of the Preferred Alternative in the Draft EA. Instead, the Preferred Alternative called for the airstrip and adjoining area to be reclassified as a Wildlife Management Area (WMA) land use designation and be added to the Duck Creek WMA.

Reclamation modified the Preferred Alternative to potentially allow the State airstrip to be re-opened for recreational fly-in use as well as boat and hike-in use. If the modified scenario is adopted, the area would be developed for fly-in and boat-in camping and day use (e.g., picnicking, swimming) activities. However, this would only be allowed provided several conditions were met. These conditions are listed in Section 2.3.2 of the final EA.

In the Preferred Alternative of the Final EA the area would continue to be designated and managed as a WMA. When/if all of the above conditions are met, Reclamation would prepare a separate environmental assessment for site-specific analysis of re-opening the airstrip. It is also important to note that several commentors expressed opposition to re-opening the airstrip, including a pilot who cited noise concerns and the availability of other nearby airports.

As stated in the Final EA, the Crown Point Road will be open for non-motorized (no ATV/ORV use) only. There was considerable support (19 letters) for this position from commentors on the Draft EA.

The Boulder Creek Arm will have a no-wake zone primarily for safety reasons. Commentors on the Draft EA expressed considerable support for a more complete closure than what is included in the Preferred Alternative.

Water quality concerns included erosion, phosphorous loading, wetland treatment, and tributary water quality. Reclamation addressed these concerns in the Final EA and has found no significant impacts on water quality from actions described in the Preferred Alternative.

Table 4.1-2. Lake Cascade Draft EA-Comment Summary
T = Tribal comment, A = agency comment

Issue	No. of Comments	Summary of Comments
Agricultural easements	2	Acquire these and eliminate grazing to protect natural resource values.
Airstrip	185 (letters and e-mails) (Several writers also testified at both Boise and Cascade) 17 testified 1 (A) of the above	Re-open the strip. It would receive much use. Good for training. Another emergency landing location is always good. Too many strips closing in U.S.
Airstrip	34	Oppose opening.
Believe main purpose of Cascade is for recreation	2	Want more recreation opportunities.
Big Sage	1 (T)	Include a dump station.
Boat camping	3	Support more areas; provide vault toilets; implement pack-in, pack-out policy.
Boulder Creek	15	Too narrow for high speed boats-under Idaho Law. Erosion from jet skis-too many of these and no regulation. Want no-wake for all of Boulder Creek.
Boulder Creek Recreation Area	1	Too much use-don't like signs on HWY 55.
Boulder Creek restrooms	1 (A)	Use vault, not flush, toilets.
Boulder Creek Trail	1	Provide trail.

Table 4.1-2. Lake Cascade Draft EA-Comment Summary
T = Tribal comment, A = agency comment

Issue	No. of Comments	Summary of Comments
Convert C/OS to RR	9	Owners want land adjacent to their property to be RR so they can get the dock they have a right to.
County law enforcement	2 (A)	Do not include provisions without funding.
Crown Point	1 (A) 5	Make old railroad grade a county road or allow ORV/ATV.
Crown Point	19	Agree with Preferred Alternative-no road, no vehicles, just a trail .
Crown Point Extension Campgrounds	2	Do not like northern location: erosive and wetlands.
Crown Point Quarry	1 (A)	Allow county use.
Crown Point/Snowmobile	5	Separate from X-C ski trail.
Cultural Resources	1 (A)	Support Preferred or Alternative B, like BMPs and development of cultural resources management plan.
Dam bridge and road	1	Do no close or at least leave open for pedestrian and bike access.
Day use on East side	1	Rehabilitate areas and close to camping; support creation of non-motorized trail.
Develop foot trails for beach access	1	Support; too many trails now.
Dock by church camp	2	Keep it.
Dock permits	1 (A) 1	Allow more dock permits.
Docks	1	Define community versus private docks.
Encroachment	1	Remove all improvements, this land belongs to all citizens.
Encroachment	1	May be appropriate for water quality and erosion control structures installed before 1985.
Erosion control	1	Provide landowners with assistance.
Float planes	2	Restricting take-off and landing to main body not safe (wind and waves) - want to do it in the arms.
Golf Course Lease	1 (T)	Make improving wildlife habitat a part of the lease

Table 4.1-2. Lake Cascade Draft EA-Comment Summary
T = Tribal comment, A = agency comment

Issue	No. of Comments	Summary of Comments
Grazing leases	2	Need better fence maintenance and want to see cows off of Reclamation lands.
Maps and Glossary	1	Suggest change for improvement.
Marinas	1	Too large, too many other problems like traffic and noise associated.
Minimum Pool	1 (T)	Maintain 300,000-foot minimum pool.
Not in my back yard	5	Put facilities somewhere else-mostly related to marinas and associated facilities.
No wake zone	1	Enforce 200 foot no-wake to reduce erosion. Not current voluntary compliance-and don't expect any in the future, must be enforcement.
Noise from snowmobile and jet ski	2	Don't like it.
Oppose conversion of Gibbon's property to RR	1	Development will only worsen erosion.
Perch fishery	1	Suggest ways to improve.
Recreation	1	Address siltation as is impacts recreation.
Recreation	1	Extend existing sites instead of new ones or minimize overall recreation development.
Recreation site expansion	1	Provide visual/noise barriers for surrounding cabins.
Road building and construction	1 (T)	Fisheries will be impacted by these activities.
Siltation	2	Address in EA.
Snowmobiles	1	Limit in C/OS areas and enforce a speed limit.
Structure of the alternatives	1	Favors Reclamation positions.
Surface water enforcement	1	County budget is fully expended-no more money is available.
Tamarack Falls Bridge	1 (T)	Limit use to minimized avian disturbance.
Trail construction	1 (T) 1	Habitat fragmentation a problem.

Table 4.1-2. Lake Cascade Draft EA-Comment Summary
T = Tribal comment, A = agency comment

Issue	No. of Comments	Summary of Comments
Tributary Fishery	1 (T)	Purchase upstream water rights and remove diversion structures.
Van Wyck Marina	1	In favor of this but not in proposed area-this is the best fishing spot.
Van Wyck Marina	1	Need breakwater.
Van Wyck Marina	1(T) 4	Too large.
Van Wyck marina	1	In favor of marina as proposed.
Vehicle access below high water line	1 (A) 8	Do not limit access Do not limit fires on beach Consider disabled Develop access points.
Walk-in, boat-in camping	1	Need enforcement of too much noise.
Walking trails	1 (A) 3	Support as many trails as possible. Add natural history interpretation.
Water quality	4 comments, 1 each issue	Cascade is a state-designated Impaired water with a mandate to improve water quality-yet water quality doesn't get the attention it deserves. Shoreline erosion a problem. Do not allow fuel facilities. Improve wetland designs.
WMA	4	Support more WMA lands with seasonal closures for wildlife.

4.2 Agency Consultation and Coordination

Reclamation consulted with several Federal and local agencies throughout the RMP process to gather valuable input and to meet regulatory requirements. This coordination was integrated with the public involvement process.

4.2.1 Fish and Wildlife Coordination Act

Reclamation has consulted with and arranged for the U.S. Fish and Wildlife Service (FWS) to provide a Coordination Act Report (CAR) under authority of the Fish and Wildlife Coordination Act (FWCA). It is included in Appendix B. Recommendations contained in the CAR will be followed as indicated at the end of Appendix B.

4.2.2 Endangered Species Act

The evaluation of endangered species contained in this EA serves as Reclamation's biological assessment as required under the Endangered Species Act (ESA). It evaluates impacts to listed and proposed for listing species including Ute ladies'-tresses orchids, bald eagles, Canada lynx, gray wolf, and bull trout. Reclamation has determined that the Preferred Alternative would have **no effect** on bull trout and may affect, but is not likely to adversely affect, the other species. FWS concurs with these findings.

4.2.3 National Historic Preservation Act

Reclamation has collected existing cultural resource information from the Lake Cascade area to prepare the EA, and to facilitate subsequent compliance with the National Historic Preservation Act and its implementing regulations (36 CFR 800). In addition, as part of Reclamation's government-to-government consultation with the Tribes (described in Section 4.3), Reclamation has contacted appropriate Indian Tribes to identify ITAs, TCPs, and Indian sacred sites. In conjunction with public review of the Draft EA, the Idaho SHPO received a copy to review. In addition to sending copies of the Draft EA, Reclamation met with the Shoshone-Bannock Tribes and the Shoshone-Paiute Tribes during the public review period. (It is understood that specific, future undertakings in response to specific RMP prescriptions, will require specific consultations with the SHPO and the Tribes pursuant to the 36 CFR 800 regulations.)

4.3 Tribal Consultation and Coordination

4.3.1 Consultation with Tribes

Reclamation met with Council members and staff of the Nez Perce, Shoshone-Paiute, and Shoshone-Bannock Tribes to discuss the preparation of the RMP and to identify ITAs, TCPs, and Indian Sacred Sites. A representative from the Shoshone-Paiute Tribes participated in the Ad Hoc Work Group, which facilitated close coordination with the Government and helped assure that Tribal interests were integrated with the RMP. Several meetings were held and much correspondence was exchanged between Reclamation and the Tribes. The dates for the meetings and correspondence are provided in Appendix C.

The following goals and objectives for the RMP reflect Tribal input and concerns that were incorporated into the planning process:

Goal CUL 1.1: Protect and conserve cultural resources, including prehistoric, historic, traditional, and sacred properties.

Objective CUL 1.1: Ensure protection of sensitive cultural resources for all Reclamation undertakings in accordance with all applicable Federal and state laws.

Objective CUL 1.2: In accordance with Section 110 of the National Historic Preservation Act and other applicable cultural resource and legal mandates, accomplish proactive management of cultural resources, including inventory, identification, evaluation, and protection.

Objective CUL 1.3: Increase awareness of cultural resources compliance and protection needs among state and other resource management partners and lease holders who interact with Reclamation in the RMP study area.

Objective CUL 1.4: Provide opportunities for public education on cultural resources, including the importance of, and requirements for, protecting these resources within the parameters of various laws and regulations.

Goal CUL 2: Protect and conserve Indian Trust Assets as specified in applicable Federal mandates.

Objective CUL 2.1: Within the scope of Reclamation authorities, ensure that the RMP is consistent with the Shoshone-Bannock Tribes adopted Snake River Basin Policy through conservation, protection, and/or enhancement of natural resources.

Objective CUL 2.2: Avoid any action which would adversely impact Tribal Indian Trust Assets.

The RMP and EA will be distributed to representatives from the Shoshone-Paiute, Nez Perce, and Shoshone-Bannock Tribes. Tribal representatives who received the Draft EA and will receive the Final EA and RMP are listed in Chapter 7, *Distribution List*.

4.3.2 National Historic Preservation Act Tribal Consultation

The NHPA, adopted in 1966, requires agencies to consult with Native American Tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. The implementing regulations of the NHPA, 36 CFR 800, addresses procedures for consultation in more detail.

4.3.3 Indian Trust Assets

Reclamation coordinated with the Shoshone-Bannock and Nez Perce Tribes to identify their interests, including ITAs. These are discussed in Chapter 3, Section 3.14, *Indian Trust Assets.*

4.3.4 Other Laws and Regulations

The relationship between Federal agencies and sovereign Tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American groups or otherwise consider their interests when planning and implementing Federal undertakings. Among these are the following:

- National Environmental Policy Act
- American Indian Religious Freedom Act
- Archeological Resources Protection Act
- Native American Graves Protection and Repatriation Act
- Executive Order 12875, Enhancing the Intergovernmental Partnership
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Presidential Memorandum: Government-to-Government Relations with Native American Tribal Governments
- Executive Order 13007, Indian Sacred Sites
- Executive Order 13175 of November 6, 2000, Consultation and Coordination with Indian Tribal Governments (EO 13175 revokes EO 13084 issued May 14, 1998)

Reclamation has adhered to these laws and regulations as applicable to the development of the RMP.