
Grace-Cove Site Plan

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1. INTRODUCTION

PacifiCorp and the Federal Regulatory Energy Commission (FERC) recently completed the relicensing process for the Bear River Hydroelectric Project (Project), FERC Project No. 20. Among the conditions of the new license is a requirement that a land management plan be developed for PacifiCorp-owned lands within the FERC Project boundary. This plan is intended to address various concerns associated with natural resources, safety, recreation, and agricultural activities identified through the relicensing process. The Land Management Plan (LMP) was prepared in consultation with the stakeholder group, the Environmental Coordination Committee (ECC). The LMP provided for the development of various Site Plans for PacifiCorp-owned parcels. The Grace-Cove Site Plan covers PacifiCorp-owned property in the vicinity of the Cove development and the lower end of the Grace development (Figure 1).

1.1 PURPOSE/CONTEXT

Site Plans are prepared in response to relicensing-process requirements for detailed plans for the environmentally sound management of PacifiCorp owned lands within the FERC Project boundary. The Project is owned and operated by PacifiCorp (locally known as Utah Power). Located on the Bear River in southeastern Idaho, the Project consists of four hydroelectric developments, Soda, Grace, Cove, and Oneida. The FERC relicensed the four developments as a single project on December 22, 2003. A Settlement Agreement (Agreement) was approved as part of the relicensing process. The Agreement was the outcome of negotiations between PacifiCorp and 16 stakeholder participants who represented various regulatory and land management agencies and interest groups, which were subsequently brought together to form the ECC in compliance with Article 402 of the new FERC License (License).

The Agreement includes a number of protection, mitigation, and enhancement (PM&E) measures designed to address the effects of Project operations and maintenance on natural and cultural resources, safety, recreation, and agricultural activities on lands occupied by the Soda, Grace, Cove, and Oneida developments. Most of these measures were incorporated as articles into the new License with little or no modification.

As stipulated in the Agreement and the License (Article 424), PacifiCorp prepared a LMP in 2004 for its lands within the FERC Project boundary (including additional lands added per Article 427). The LMP fulfills the requirements of Article 424 and addresses many requirements included in Articles 425 and 426 that call for development of a Shoreline Buffer Zone Plan and a Cove Bypass Reach Buffer Zone Plan, respectively. PacifiCorp also prepared a Recreation and Traffic Safety Plan (RTSP) required by the Agreement and License (Articles 416 and 417, including additional lands added per Article 427), which addresses operation and maintenance of recreation facilities and implementation of traffic safety measures.

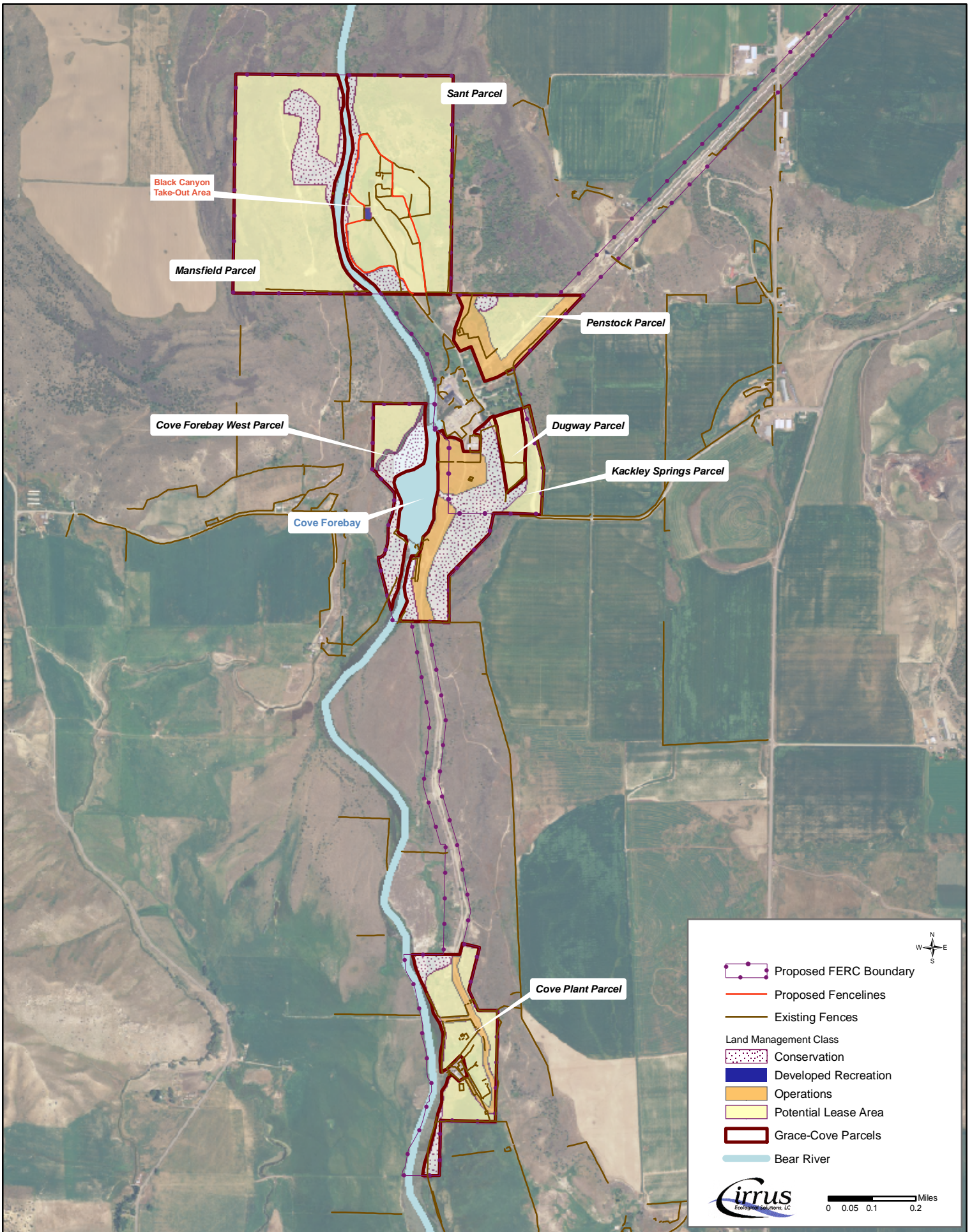


Figure 1. Grace-Cove Planning Area.

The LMP goes on to describe the requirement for Site Plans, stating (p. 69): “Using the LMP’s guidelines, land management classifications, and specific management actions, PacifiCorp will consult with the ECC to prioritize, develop, and implement Site Plans at each of the Project Developments, or portions thereof. It is expected that the Site Plans will be developed within 5 years after the LMP is approved by the ECC and the FERC. The Site Plans will document site-specific actions needed to help meet ECC goals, including:

- Identifying agricultural lease boundaries.
- Depicting locations of public use areas (where to focus dispersed recreation use), livestock and security fences, and watering access sites.
- Assessing grazing management (stocking rate, standards for determining forage utilization, etc.).
- Identifying specific sites in need of restoration and defining methods for restoration, including grading, seeding and/or planting, as well as preventative measures necessary to maximize site protection (e.g., control of recreation and agriculture use). Criteria for restoration needs will be developed through consultation with the ECC and will be based on size of impacted site, impacts on water quality and fish and wildlife habitat, and extent of deviation from Desired Future Conditions.
- Reviewing allowed uses in different areas.
- Providing cost estimates for each action.
- Prioritizing management actions and Site Plan preparation sequence.”

Since release of the LMP, PacifiCorp has reconsidered the utility of providing cost estimates for management actions in Site Plans. This Site Plan does not include such estimates, and financial considerations will be managed by PacifiCorp as the plan is implemented.

Guidance provided by the LMP and the RTSP provides a framework for site-specific planning. On-site constraints and opportunities require some flexibility in implementing this guidance within a given Site Plan.

1.2 PLANNING AREA

The Grace and Cove developments adjoin each other and are located in Caribou County, Idaho, south of the town of Grace and approximately 38 miles north of the Utah border. The Grace-Cove planning area (Figure 1) includes the following parcels of PacifiCorp-owned land within the FERC Project boundary:

1. The Sant parcel is approximately 75 acres, located on the east side of the river, upstream of the Grace plant.
2. The Mansfield parcel is approximately 78 acres, located on the west side of the river, upstream of the Grace plant.

3. The Penstock parcel is approximately 22 acres, located east of the river, southeast of the Sant parcel and northeast of the Grace powerplant.
4. The Dugway parcel is 5.9 acres, located northeast of the Kackley Springs parcel and south of the Grace powerplant.
5. The Cove Forebay West parcel is approximately 17 acres, located on the west side of the river, west of the Cove forebay.
6. The Kackley Springs parcel is approximately 42.1 acres, located on the east of the river, between the Cove dam and the Grace plant.
7. The Cove Plant parcel is approximately 31 acres, located east of the river, at the south end of the Grace-Cove site.

These parcels are addressed in this Site Plan. PacifiCorp-owned lands around Grace dam and along the Grace flowline are not addressed in this plan but will be the topic of a separate Site Plan. Because the land abutting the river in the Cove bypassed reach is not owned by PacifiCorp, fencing requirements in Article 426 for such land are not addressed in this Site Plan.

Completion of the pending Cove dam removal may necessitate revision of plans for the Kackley Springs and Cove Forebay West parcels, as provided in the LMP in the discussion of adaptive management and the 5-year review and revision process.

1.3 DESIRED FUTURE CONDITIONS

The LMP includes a suggested template for Site Plans, and the template includes Desired Future Conditions. The LMP also categorizes land management issues under four headings, Public Access, Vegetation Management, Wetland and Riparian Habitat Management, and Agricultural Uses. Desired Future Conditions associated with these land management issues and specific to the Grace-Cove planning area were developed based on the land use standards outlined in the LMP for each issue (see Appendix A in this document), ECC input, and on-site review by PacifiCorp and contractor personnel. These Desired Future Conditions are detailed in Table 1.

Table 1. Desired Future Conditions.	
Issue	Desired Future Condition
<i>Public Access</i>	<p>PA1 - Viable recreational uses are maintained and/or improved.</p> <p>PA2 - Disturbed lands are improved to restore healthy vegetated communities.</p> <p>PA3 - Existing road maintenance activities are appropriate to reduce sidecast to riparian or wetlands and to minimize the spread of noxious weeds.</p> <p>PA4 - The roadways are maintained to allow for adequate public access.</p> <p>PA5 - Public signage is visible and appropriate to the location.</p> <p>PA6 - Boundaries correctly reflect current ownership and land use.</p> <p>PA7 - Adequate fencing and gates exist to limit disturbance.</p>

Table 1. (cont'd) Desired Future Conditions.	
Issue	Desired Future Condition
<i>Vegetation Management</i>	<p>VM1 - Native and other desired plant communities are enhanced and managed appropriately.</p> <p>VM2 - The extent of undesirable or weedy vegetation is reduced and treatments are scheduled as necessary.</p> <p>VM3 - Upland habitats such as sagebrush-steppe are enhanced and protected.</p>
<i>Wetland and Riparian Habitat Management</i>	<p>WR1 - Wetland and riparian resources, spring complexes and the river shoreline are buffered and protected.</p> <p>WR2 - Riparian zones, wetlands and aquatic resources are healthy and are properly functioning.</p> <p>WR3 - Livestock watering sources are appropriately placed and are maintained.</p>
<i>Agricultural Uses</i>	<p>AU1 - Activities on leased land are consistent with the objectives of the Agreement, the LMP and other resource management plans.</p> <p>AU2 - Livestock grazing is managed appropriately by season, intensity, animal-units (AU) and duration.</p> <p>AU3 - Grazing lease boundaries, pasture boundaries within leases, and conservation areas are delineated and fenced as appropriate.</p> <p>AU4 - Lessees and stakeholders are actively engaged in meeting management objectives.</p>

1.4 APPROACH AND SCHEDULE

This Site Plan documents a management approach based on:

- Recognizing and maintaining the function of Site Plans in the larger context of the Bear River Hydroelectric Project (i.e., relative to the Agreement, Project License, LMP, and RTSP).
- Drawing on these Project-level guiding documents for management goals and objectives, an overall management framework, and certain stipulated management practices.
- Combining this Project-level guidance with site-specific opportunities and constraints to identify and schedule practical management actions for each parcel of land subject to this plan.
- Regularly monitoring implementation to insure that the planned management actions are taking place and revising implementation accordingly (i.e., compliance monitoring; Section 4.1).

- Periodically tracking progress toward established goals and objectives (i.e., performance tracking; Section 4.2) and revising management actions accordingly.

This approach is intended to maintain a clear management focus, systematically obtain and incorporate quality information, establish effective linkages between monitoring and implementation, and overall to achieve management goals and objectives as efficiently as possible. The approach is consistent with and linked to PacifiCorp's Environmental Management System (EMS).

As noted above (Section 1.3), the LMP and the RSTP provide management goals, objectives, and standards for the various planning area resources. The Agreement and Project License stipulate certain PM&E measures to address resource values in the planning area, including the provision establishing the ECC to further develop and guide implementation of such measures. In compliance with the FERC Relicensing agreement, PacifiCorp is required to periodically document progress made in the implementation of the RTSP. Summary reports will be prepared every and reviewed during ECC meetings and filed with FERC every six years. The reports will include progress made on implementation of planned actions epr the RTSP and FERC licensing terms and conditions; and any changes made to the RTSP within the site including recreation and traffic safety projects being implements and their schedule.

The LMP goes a step further in refining Project-wide management guidance, identifying four land management categories and assigning specific management activities and practices to each (Section 2.2).

PacifiCorp and contractor specialists built on the guidance provided in these documents, completing on-site reconnaissance and surveys, interviews with agricultural lessees, and other site-specific activities to tailor documented guidance to on-the-ground realities on each parcel.

The ECC brought a multidisciplinary perspective and knowledge base to bear on identification of site-specific resource issues and constraints affecting each of the seven parcels in the planning area (Section 2.3) and on development of management actions to address resource conflicts. The parcel-specific management plans outlined in Section 3 of this Site Plan were developed by combining the noted Project-wide direction with ECC and PacifiCorp/contractor expertise to identify specific, practical, management actions. Section 3 also provides the schedule for implementation of corrective actions required to achieve the Desired Future Conditions (Section 1.3) on each of the seven parcels.

Section 4 of this plan describes two aspects of monitoring. Compliance monitoring (Section 4.1) determines whether planned management actions actually take place and sets the stage for appropriate revisions to the implementation plan and/or schedule. Performance tracking documents whether management actions, once implemented, result in adequate progress toward Desired Future Conditions. If this is not the case, action plans will be adjusted accordingly (see LMP Section 2.4).

With these aspects of the overall planning approach and schedule established, the remainder of this document addresses the specifics of the Grace/Cove planning area and the seven planning units.

2. SITE DESCRIPTION

This section begins with an overview of the Grace and Cove development areas, then a brief discussion of the land management categories established by the LMP, which provide guidance considered in the parcel-specific plans comprised by this Site Plan. A description of current conditions on each of the seven parcels follows, and the section concludes with a summary of the environmental issues and conflicts evident on each parcel.

2.1 SITE OVERVIEW

As noted above (Section 1.2), the Grace and Cove developments are located in Caribou County, Idaho, approximately 38 miles north of the Utah border on the Bear River. Historically, the area was settled gradually following the Lewis and Clark Expedition in the early 1800s. The discovery of gold in the mid-1800s further stimulated population growth, and hydroelectric power was developed along the Bear River – including the Cove Development in 1917 and the Grace Development in 1908 – to support the demands of the mining industry and the growing population. Currently, the area’s economy is largely agriculture-based and is supported by beef, dairy, potato, grain and hay farming as well as manufacturing and phosphate mining. Recreational uses, particularly fishing and boating on the Bear River, are becoming increasingly popular.

PacifiCorp-owned lands comprising the developments themselves lie on canyon slopes and benches above the river, on the riverbanks, and in the river channel itself. Operations facilities outside the river canyon include the Grace flowline and the Cove Flume, each of which occupies a narrow, PacifiCorp-owned corridor. The Grace and Cove powerhouses and associated structures lie in the canyon bottom on or near the river banks. Dams and diversions are in the channel itself. Larger, contiguous blocks of land, particularly the Sant and Mansfield parcels, typically reflect the unwillingness of prior property owners to sell the utility the specific sites needed to complete the development.

Some portions of the development area are suitable for livestock grazing, and the operators of the hydro facilities have historically grazed small herds in the development area. There is no farming currently in the development area, but some areas, particularly on the Sant parcel, previously supported crop agriculture. These areas are currently maintained as pastures, some of them irrigated, by grazing lessees. Fishing is the main recreational activity in the development area, and recreational boating through Black Canyon is increasingly popular. Easy access, historic hydro facilities, and natural aesthetics make the area popular with local residents for sightseeing.

Most of the land in the development area is classified as sagebrush steppe, emergent wetland (much of it created by irrigation systems on benches above the river), cropland/pasture, riparian, and grassland/herbaceous cover. These habitats support a range of wildlife, including waterfowl, neotropical migrant birds, raptors, some upland game birds, small mammals, reptiles, amphibians, and fish. No Federally listed plant or animal species are known to occur in the development area except on an occasional basis (e.g., bald eagle). The main wildlife concern in the area is provision of adequate habitat and passage for migration and spawning of the Bonneville cutthroat trout (BCT), a species of special concern in Idaho and a driving force in determining the conditions of the Project License.

Development of hydro facilities, historic farming, and past and current livestock grazing has left their mark on the area's natural resources. The effects of recreational use are becoming increasingly evident.

The seven parcels comprised by the planning area for this Site Plan were selected from the overall Grace and Cove development areas based on their need for active management. Other parcels are generally occupied by operations facilities. Some parcels, such as the Cove Forebay West and portions of the Cove bypassed reach, are subject to other changes occurring in response to License requirements, so site planning is underway under other auspices. While further site planning will likely be undertaken in the future to cover the remaining lands in the development area, these seven parcels are the priority targets.

2.2 LMP CATEGORY DESIGNATIONS

The relationship between the LMP and Site Plans is summarized in Section 1.1 of this document. As part of the LMP process, natural conditions as well as current and anticipated land uses were considered in the development of four land management categories that define the general allowable activities and future land management actions on PacifiCorp-owned lands. The categories provides a general framework for the management of PacifiCorp-owned land within and adjacent to the FERC Project boundary. The standards established to guide management in the specific categories in the LMP are found in Appendix A of this Site Plan.

These land management categories and the associated management guidance provided by the LMP were an important source of input considered in the site planning process. Based on observed on-site conditions and the expertise of the site planners, Site Plans may diverge to a minor degree from specific points of LMP guidance. The boundaries of land management categories may also be adjusted on the basis of on-site review. Figures 2 – 5 indicate the land management categories assigned to the seven planning area parcels.

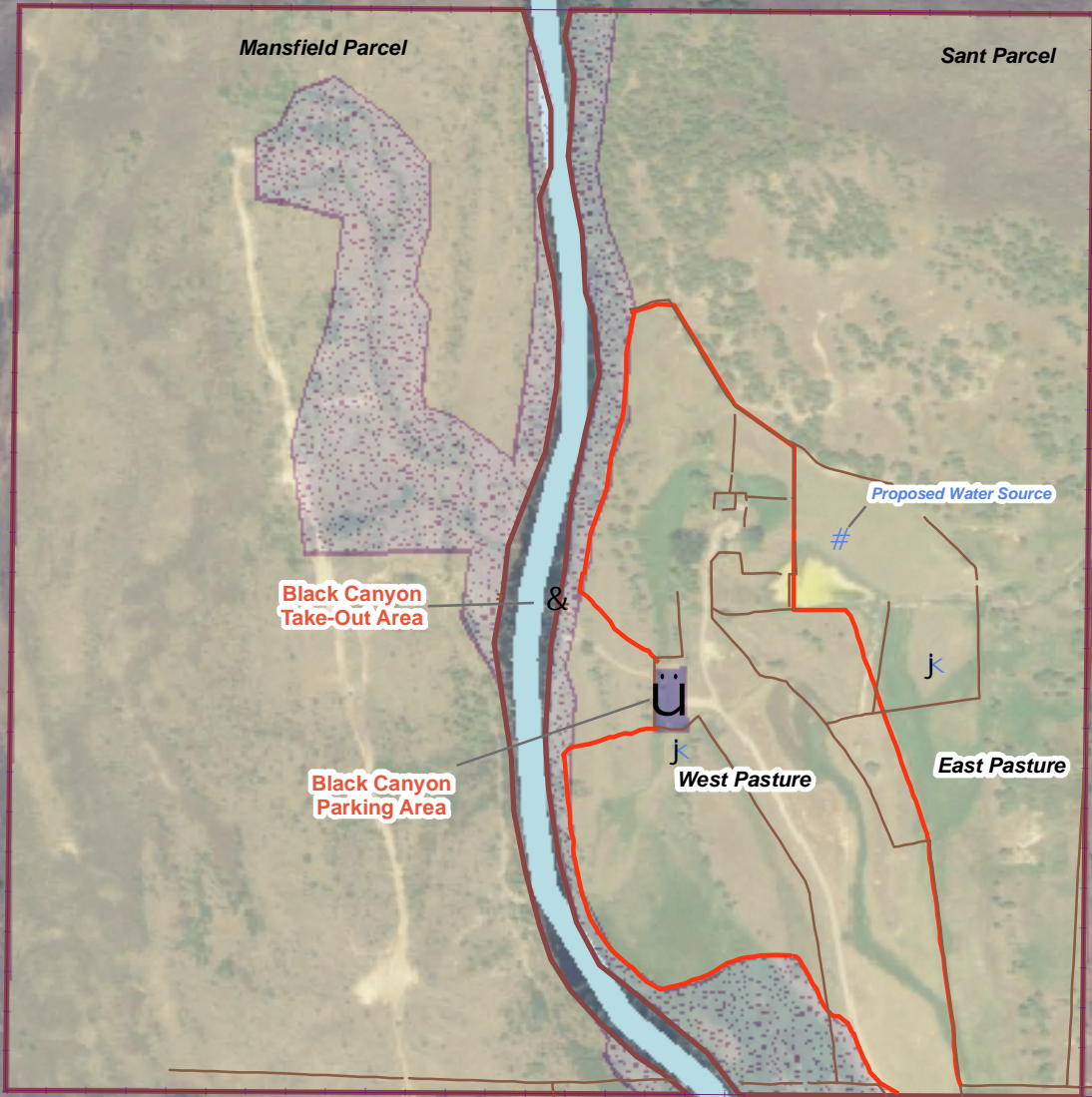
2.2.1 CONSERVATION LANDS

The Conservation land management category is intended to fulfill the “shoreline buffer” requirements of the License and to protect other ecologically sensitive areas, particularly riparian zones and wetlands. Project lands in this category will be managed to retain and preserve a character of undeveloped, natural open space and to conserve and protect fish, wildlife, scenic, historic, archaeological, and cultural values.

Currently, motorized vehicle use is prohibited off existing roads. Dispersed camping is prohibited. Pedestrian and equestrian trails are present and utilized by recreationists, particularly anglers at this site.

The Conservation Land classification includes buffers around the Bear River, Kackley Springs, and the wetland and riparian habitats that adjoin the river, springs, and tributary streams. Delineation of Conservation Lands (i.e., refinement of the delineations included in the LMP) was based on a number of factors including: License requirements for riparian buffers, U.S. Army Corps of Engineers (COE) wetland criteria (including contacts with the COE to discuss on-site conditions), and on-site assessment of sensitive habitats and potential impacts by contract biologists and wetland specialists in 2004 and 2005. Buffer zone widths around protected sites vary depending on topography, land use, and other site-specific conditions.

FIGURE 2. SANT & MANSFIELD PARCELS



- LEGEND**
- jk Existing Water Sources
 - FERC Boundary
 - Existing Fences
 - Proposed Fencelines
 - Land Management Class**
 - Conservation
 - Developed Recreation
 - Operations
 - Potential Lease Area
 - Bear River
 - GraceCove Parcels

0 0.03 0.06 0.12 Miles



FIGURE 3. PENSTOCK PARCEL

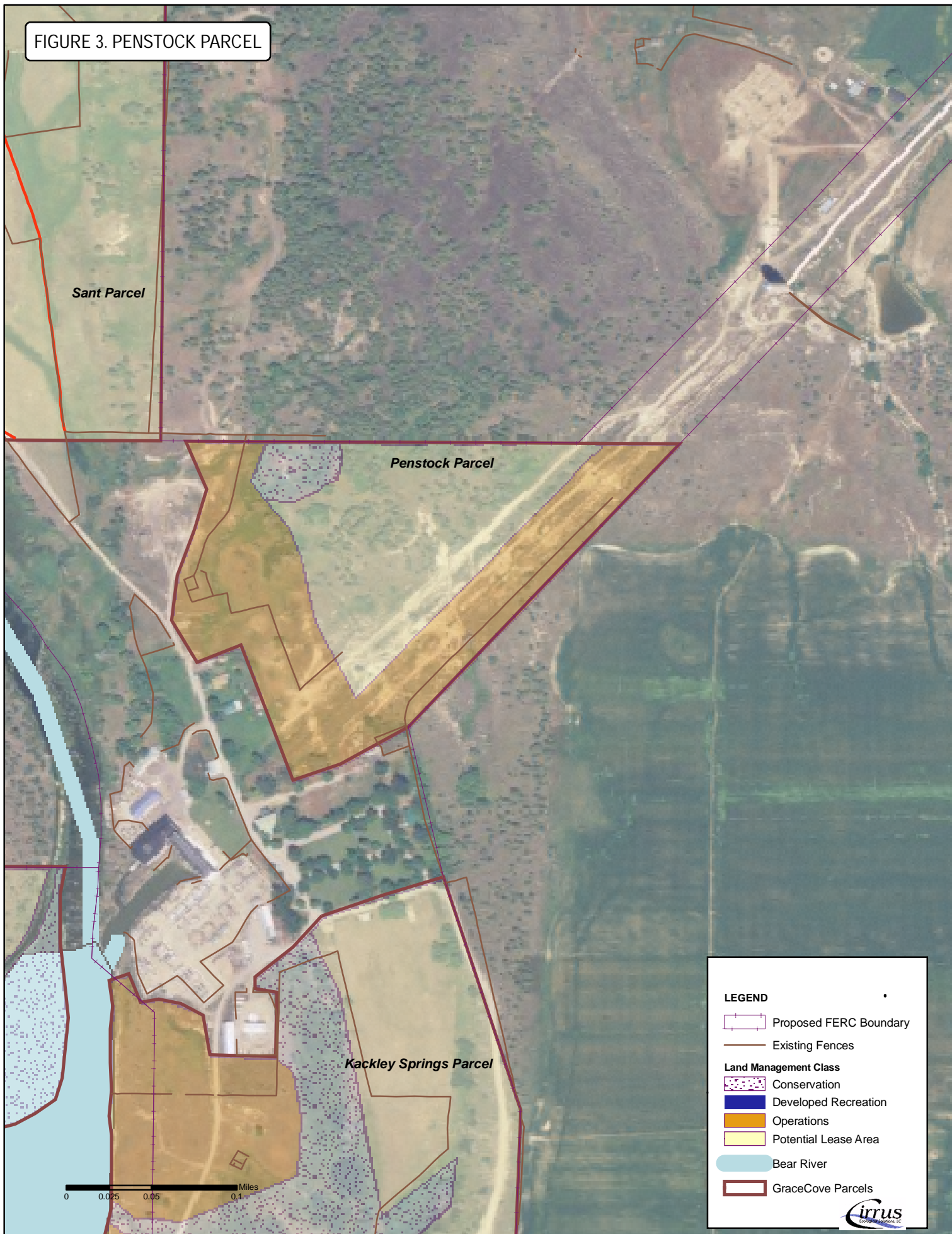
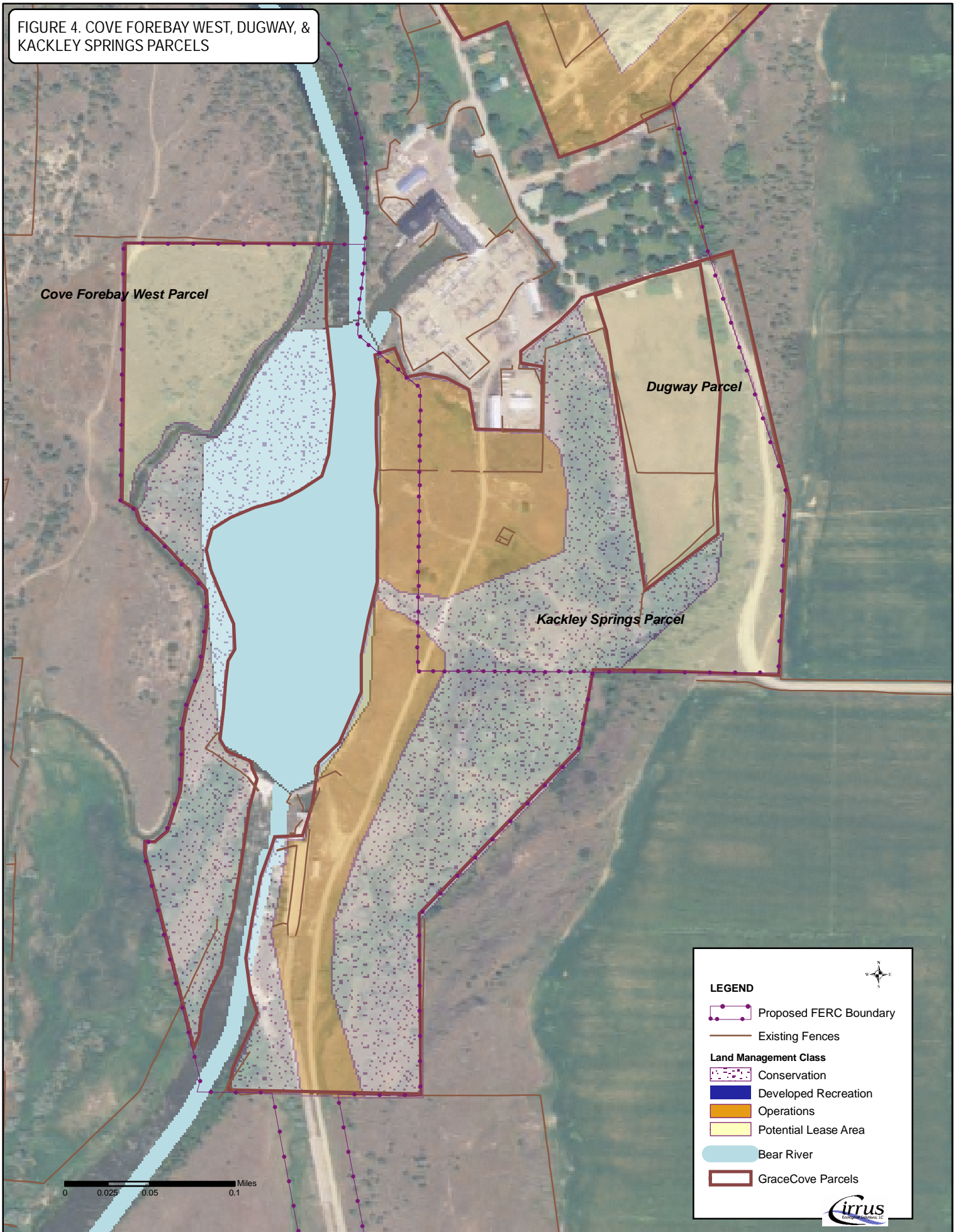


FIGURE 4. COVE FOREBAY WEST, DUGWAY, & KACKLEY SPRINGS PARCELS



LEGEND









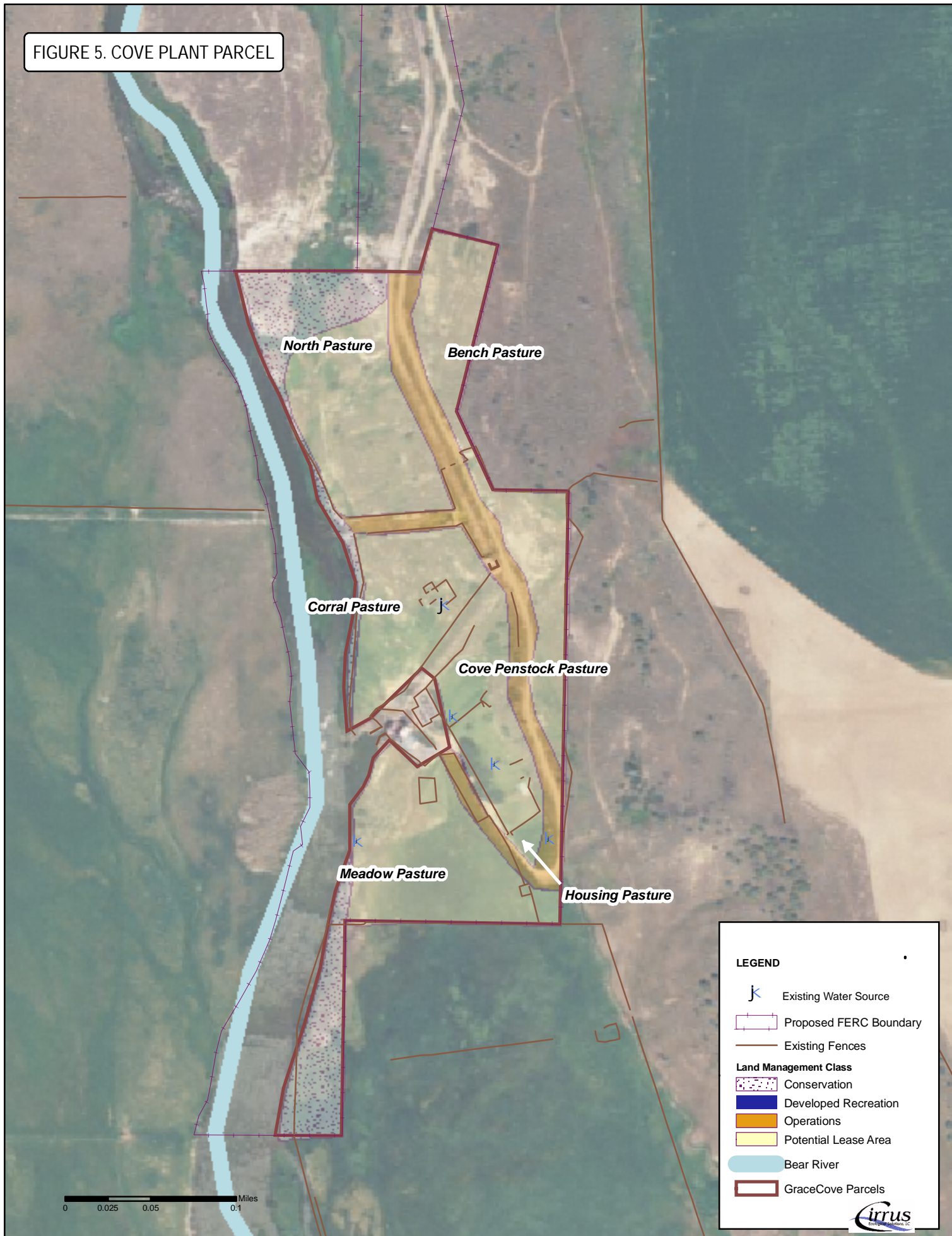
-  Proposed FERC Boundary
-  Existing Fences
- Land Management Class**
-  Conservation
-  Developed Recreation
-  Operations
-  Potential Lease Area
-  Bear River
-  GraceCove Parcels



FIGURE 5. COVE PLANT PARCEL



Current conditions in the Conservation Lands category on the seven PacifiCorp-owned parcels vary and result from a combination of Project-related effects and other ground disturbances, and livestock grazing.

2.2.2 PROJECT OPERATIONS LANDS

The Project Operations land management category applies to acreage within the Project boundary that is primarily used for electrical power generation, transmission, flow lines, maintenance yards, administrative offices, storage areas, and other associated Project-related facilities. Lands with the potential for such uses in the future are also included.

Operational areas contain very little, if any, wetland or riparian habitats but do encompass some riverine areas adjacent to Project facilities. Project Operations areas are generally closed to public use for safety and security concerns. This land management category allows PacifiCorp to control the use of and access to Project lands to protect public health and safety and to provide for Project security.

Currently, public access to all Project facilities is prohibited. No overnight camping is permitted on PacifiCorp land, and travel with motorized vehicles is limited to existing roads. The Cove dam east abutment is fenced to prohibit public access as well. Agricultural use is generally not permitted in the Project Operations lands, though the Cove Plant parcel grazing lease includes land in this category.

All parcels except the Mansfield parcel include Project Operations lands. Primary concerns are weed infestations in areas affected by project operations.

2.2.3 DEVELOPED RECREATION AREAS

The Developed Recreation land management classification applies to PacifiCorp land with established developed recreation facilities. Recreational use is encouraged but regulated to protect the full range of resource values and minimize environmental degradation. The LMP recognizes that some level of resource damage is inherent with concentrated recreational use. Motorized use is restricted to established roads. Agricultural use is not permitted.

The Black Canyon take-out located on the Sant parcel is the single designated recreation site in this Grace-Cove Site Plan. While the facilities are fairly rustic, the site generally complies with LMP standards. As detailed below, the parking area is open on the east side, and cattle enter the area at times.

2.2.4 AGRICULTURAL LEASE AREAS

Areas not included in the Conservation, Project Operations, or Developed Recreation land management categories will be available for consideration as potential agricultural leases (renewal of current leases or new leases). The primary uses of Agricultural Lease Areas are livestock grazing and farming. These areas may also be available for dispersed recreation uses such as hiking, hunting, and fishing, but no overnight use is permitted. Current vehicle access is restricted to designated roads except as permitted for lessee-operated farm implements used to conduct agricultural activities.

Current agricultural uses on PacifiCorp-owned land within the planning area include two livestock grazing leases. In the recent past, grazing also occurred just west of the Grace powerhouse on the Cove Forebay West parcel, on the Kackley Springs parcel, and on the Mansfield parcel. In total, approximately 308 acres of PacifiCorp-owned land are included in current or recently terminated grazing leases. The two current leases comprise about 127.9 acres.

The Cove Bypass Reach Buffer Zone Plan (License Article 426) establishes a funding program designed to assist private landowners in fencing non-PacifiCorp-owned properties in the Cove area. Throughout the new license term, PacifiCorp will periodically contact non-participating or new landowners along the Cove bypassed reach to inform them of the fencing program and to encourage their participation.

2.2.5 LAND MANAGEMENT CATEGORY SUMMARY

The following table indicates the acreage of each land management category within each planning area parcel.

Parcel Name	Conservation Lands	Project Operations Lands	Developed Recreation Areas	Agricultural Lease Areas
Sant	6.1	0 (road only)	0.3	68.4
Mansfield	11.1	0	0	67.2
Penstock	0.9	12	0	9.1
Cove Forebay West	10.4	0 (West dam abutment only)	0	6.3
Dugway	0	0	0	5.9
Kackley Springs	21.7	14	0	6.2
Cove Plant	2.5	4.7	0	22.4

2.3 CURRENT PARCEL CONDITIONS

2.3.1 SANT PARCEL

The Sant parcel (Figure 2) has been utilized for varied activities including a historic homestead and farm, more recent livestock grazing, fishing, recreational boating, and dispersed recreation. The historic homestead on the parcel includes an old house, several outbuildings, and corrals. The central or meadow portion of the parcel was farmed in the past but more recently has been managed as an irrigated pasture. A pipeline from a spring across the Bear River provided the old house with culinary water but now serves as a source for livestock watering and limited pasture irrigation. No interpretive signage exists to describe the homestead and its historic significance.

The parcel contains the only specifically designated recreation site in the Grace-Cove area, known as the Black Canyon take-out. The site includes an improved parking area, a pedestrian footbridge across the river typically utilized by fisherman, and a ramp for taking out boats that have run Black Canyon. The site is located near the lower end of the Grace bypassed reach,

approximately 0.5 miles upstream of the Grace Powerhouse. There is currently no sign on the river indicating the location of the take-out.

The take-out area was previously used as a dispersed recreation site but is currently managed for day-use with overnight camping prohibited. The area also contains a few fairly new campfire rings created by recreationists. The parking area was recently graveled and pole fenced on three sides. The east side of the parking lot has not been fenced and livestock can enter the parking area. Access to the boat take-out is via a footpath from the parking area. The parking area is lacking the following signs required by the RTSP: (1) a recreational rules sign; (2) a "Part 8" sign; (3) a "Benefits of Hydro Power" sign; (4) a "Stop" sign at the parking lot exit; (5) a "No Fires" sign; and (6) a "Speed Limit 10 mph" sign. A portable toilet has been placed at the parking area in front of the "Handicapped Parking" sign.

A road from the Grace operations area accesses the homestead and the take-out area. There are currently no property boundary markers distinguishing PacifiCorp ownership where the road enters the parcel.

Currently, the livestock lessee grazes approximately 26 cows with calves on the parcel. On a typical year, the cattle are turned out onto the parcel in the spring and grazed there for approximately 3 weeks. They drink from three water sources on the parcel: the river, water piped from a spring across the river to the old house, and a spring/wetland complex in the southwest corner of the parcel. After 3 weeks, the cattle are moved to the Penstock parcel for 1 week. Finally, cattle are moved to the Dugway parcel for one to two weeks. If regrowth allows, the cattle may be returned to the Sant parcel for additional grazing depending on forage availability. The Kackley Springs parcel was previously included in this grazing rotation. However, as discussed below, the Kackley Springs parcel was closed to grazing in 2005.

The parcel is managed as a single pasture so cattle currently have access to the entire area. Functioning fences are located only near the property line on the east side and some segments of the southern boundary. An old, downed fence formerly separated the eastern and western pastures. Currently, there are no functioning interior fences or fences along the river.

Along the southern border of the parcel, livestock can access the adjoining BLM land because a portion of the boundary is not fenced. Therefore, livestock utilize the area and can cross the bypassed reach from adjacent BLM land during low-flow periods. The current lessee prevents this from occurring to a degree with annual fence repair and electric fence construction along the river. The steep and rocky terrain along the northern boundary of the parcel serves as a natural barrier so that very little fencing is required there.

While the grazing lessee has in large part managed cattle grazing appropriately on the parcel, a formalized grazing management plan, with appropriate timing and utilization levels, has not been established for the parcel. Closure of the Kackley Springs parcel makes the need for planning more pressing.

The Sant parcel contains a diverse mixture of upland, wetland, and riparian plant communities. The upper hillside is dominated by a juniper (*Juniperous ssp.*) overstory with an understory of smooth brome grass (*Bromus inermis*), quack grass (*Elytrigia repens*), and other introduced pasture and annual grasses. Much of the parcel's lower or western section consists primarily of irrigated meadows with intermixed wetland and riparian areas. Dominant vegetation consists of rushes (*Juncus ssp.*), sedges (*Carex ssp.*), cattails (*Typha ssp.*), and bluegrass (*Poa ssp.*), with such shrubs as wild rose (*Rosa woodsii*) and serviceberry (*Amelanchier alnifolia*). These plants

comprise a wetland complex located primarily on the southwest portion of the parcel with the riparian vegetation occurring primarily along the river.

The upper or eastern section of the parcel supports similar intermixed upland and hydric vegetation, but the hydric vegetation is generally the result of irrigation flows from fields on the benches above. This water comes through the rimrocks in natural appearing channels and in constructed ditches. It became clear that irrigation was the water source for wetland vegetation during site visits prior to the 2005 irrigation season, in the first wet spring following a protracted drought, showed the entire eastern pasture to be dry. This was in contrast to the previous August, during the irrigation season and during the drought, when much of the area was wet. Only wetlands in the southwest corner of the parcel below the road and the piped spring referred to above contained water in May of 2005.

Known weed infestations (particularly thistle) occur in the upland areas, riparian zone, the wetland areas, and near the Black Canyon take-out. Localized infestations of whitetop (*Cardaria chalepensis*) occur in the upland areas. Thistle, deathcamas (*Zigadenus spp.*), and poison hemlock (*Conium maculatum*) are found along the riparian corridor and wetlands, and burr buttercup (*Ranunculus testiculatus*) is interspersed throughout the parcel.

While PacifiCorp has contracted weed control operations for at least the last 4 years, herbicide applications have been concentrated along roads and around project operations facilities as an annual spring treatment. Some limited backpack spraying has occurred in the west pasture and has been fairly effective in preventing widespread infestations of whitetop. Properly timed cattle grazing has utilized much of the abundant annual grasses in the early spring.

2.3.2 MANSFIELD PARCEL

Located across the Bear River from the Sant parcel, much of the Mansfield parcel (Figure 2) is dominated by the steep basaltic boulder fields that occur only along the eastern and northern edges of the Sant parcel. A narrow riparian zone and strip of upland vegetation run the length of the parcel along the river. Isolated wetlands occur near springs and seeps along the river corridor and among the boulders on the slope above; one larger spring feeds a tributary to the Bear River and is partially diverted across the river to the Sant parcel homestead. Small and intact native plant communities persist in this parcel as a result of their isolation by the lava rock outcrops. Otherwise, upland, riparian, and wetland vegetation is similar to that described on the Sant parcel but much more limited in coverage. The west side of the parcel consists of nearly impassable rock formations, and the property boundary is not marked. Due to its steep and rocky character of the parcel, human use and activity have been limited.

A pedestrian bridge spans the river providing public access to the Mansfield parcel from the Black Canyon take-out parking area. There are intact fences on portions of the north and south ends of the property line, but there are no interior fences along the river's reach or around the springs and seeps. While the public has access to the parcel, no property boundary signage currently exists.

The parcel's topography and reduced vegetation cover provide a limited forage base for livestock. Until 2005, several acres located adjacent to the river near the pedestrian bridge were most heavily utilized on a season-long basis by a limited number of cattle, although cattle had access to and impacted all portions not dominated by boulderfields. This concentrated use has resulted in evidence of overgrazing (i.e., large weedy component, few desirable forage species, areas with little or no vegetation, etc.) across much of the accessible portions of the parcel. Based on these

effects, the physical impacts of hooves traversing the wetter slopes near springs, and an assessment of future management objectives in conjunction with capital expenditures necessary to appropriately manage this parcel, the grazing of livestock was discontinued in 2005 and the lease was not renewed.

As noted above, a small diversion of the main spring on the Mansfield parcel delivers water through a pipeline across the river to the homestead area on the Sant parcel. This 2-inch pipeline diversion is small when compared to the total amount of water flowing from the spring. The pipeline has been in place for a number of years to provide culinary water to the homestead area, and it now provides stock water. The piped diversion is currently being investigated to determine if the spring flow could be returned to the Bear River.

An unrelated 12-inch water conveyance line runs north to south across the length of the parcel traversing the steep west hillside. It is buried where there is adequate soil coverage but lies on top of the boulders for much of its length. Portions of the water pipeline were replaced in 2004 due to age. A gate on the southern boundary fence has provided vehicle access for maintenance of the pipeline. Access through the parcel has been unregulated in the past.

The disturbed area was not reclaimed or revegetated and remains as a noticeable linear disturbance on the landscape (Figure 2). Exposed bare soil has resulted in significant weed infestations including several species of thistle, houndstongue (*Cynoglossum officinale L.*), and whitetop, along with burr buttercup and annual grasses. Along much of the pipeline route, a work road was left intact, as was the former construction staging area at the parcel's southern end. Additional weed concentrations are found in areas near the river, particularly along 0.3-mile length of the area around the take-out where grazing was historically concentrated. Prior to 2005, weed control measures were not implemented on the parcel.

2.3.3 PENSTOCK PARCEL

The Penstock parcel (Figure 3) is adjacent to the Sant parcel's southeastern boundary. The parcel is located on the west-facing hillside running much of the length of the penstock from the surge tank southwest to the Grace powerplant. The parcel is managed primarily for PacifiCorp operations. Two infrequently traveled roads provide access for maintenance of the penstock and surge tank. There is evidence of limited soil erosion in the form of small gullies on the roadways.

The public does not have access to the parcel. No property signs currently exist, but the property is entirely fenced and access gates are typically closed. It is not clear whether the fenced boundary accurately reflects property ownership.

Two spring boxes in the upland, wooded area north of the penstock provide culinary water to the plant, water for livestock, and support the wetland plant community on the lower portion of the parcel. The spring boxes, the small stream channel that carries their flow, and the associated wetland areas below are not fenced from livestock. Due to the size of the parcel and the limited amount of available forage, cattle are currently grazed on the parcel for a limited time (about 10 days). The short grazing season avoids excessive trampling or damage to the channel banks and wet areas.

The Penstock parcel has been included in the Sant parcel lessee's grazing rotation, but no formal lease has been established and no plan is in place to regulate the timing of grazing and utilization levels.

Weeds (particularly thistles) occur in disturbed areas and along the roads. Other weed species such as black henbane (*Hyoscyamus niger*), houndstongue, and whitetop, also occur throughout the parcel. Undesirable plants such as burr buttercup and annual grasses are widespread and interspersed with some native grasses and forbs. Infestations of noxious weeds and undesirable plants are primarily due to past disturbances on the site. For the most part, soils in the parcel have been previously disturbed by installation of the penstock tubes.

2.3.4 COVE FOREBAY WEST PARCEL

The Cove Forebay West parcel (Figure 4) is located on the west side of the river, running the length of the Cove forebay. The parcel includes a segment of the Gentile Valley Irrigation Canal, as well as the western abutment of Cove dam. Aside from these developments, evidence of human use is limited.

The Cove dam will be decommissioned in the Fall 2006. Following removal of the Cove forebay, the upland, wetland, and riparian areas will be revegetated. The deconstruction activities and reclamation process will likely change the physical character of the Cove Forebay West parcel. The monitoring plan for this area will be adapted based on these changes and monitoring of revegetation will be noted in this site plan.

Public access to the parcel is not provided, however the public can get to the parcel by crossing the river at low flows from the Grace development side. Fishing would likely be the major attraction. There are currently no boundary markers delineating ownership.

This parcel has been historically grazed by adjacent landowners without a formal lease or permission from PacifiCorp, although much of this problem may be the confusion over parcel ownership boundaries and inadequate fencing in this area. The western boundary of the parcel has a newly constructed fence that clearly distinguishes the property boundary. However, the north end of the fence is not yet constructed, which will allow continued livestock trespass until the fence is complete.

A large wetland area lies in the river bottom north of the forebay, and another cattail wetland extends onto the parcel from the south. Otherwise, the parcel supports upland vegetation including scattered junipers, big sagebrush (*Artemisia tridentata*), and a mix of primarily non-native understory grasses and forbs.

Trespass livestock grazing in the riparian zone along the west bank of the river has somewhat altered vegetation along the shoreline, but the riparian corridor is relatively intact. Thistles and other weeds such as whitetop, houndstongue, and burr buttercup are found in localized areas in the parcel along with annual grasses. No weed control has occurred on the parcel.

2.3.5 DUGWAY PARCEL

The Dugway parcel is located northeast of the Kackley Springs parcel and south of the Grace powerplant. It is approximately 5.9 acres and consists solely of agricultural leased land. It is a fenced upland parcel located north of Kackley Springs. The current fenceline does not accurately delineate the parcel's boundaries.

It had been grazed consistently through 2004. The parcel was rested in 2005 and is now included in rotation with the Sant and Penstock parcels. Depending on cattle numbers and forage availability, it is grazed an average of one to two weeks at a time. In the past, water sources for the cattle included the Cove forebay, Kackley Springs proper, and other tributary channels. A functioning fence divides this irrigated pasture from the wetland area around the springs limiting the available watering source to a very small channel on the south end of the pasture. There are plans to construct a water trough on an existing concrete pad located along the northern fenceline to completely exclude access from the channel.

Until 2005, portions of the parcel were flood-irrigated to provide for grazing. Flood-irrigation practices have largely influenced the parcel's hydrology. Dominant species include rushes, sedges, cattails with Great Basin wildrye (*Elymus cinereus*), quack grass, and annual grasses found in the uplands. Irrigation is now limited to sprinkling on the Dugway parcel where intermediate wheatgrass and quack grass dominate. There are isolated areas of weed infestation within the parcel

2.3.6 KACKLEY SPRINGS PARCEL

The Kackley Springs parcel (Figure 4) lies south of the Grace operating facilities along the eastern bank of the Cove forebay. Most of the parcel is a large, spring-fed, wetland complex mapped within the Conservation land management category as presented in the LMP. The spring's original channel ran along the toe of a hillside on the parcel's eastern boundary prior to being blocked and diverted into the Cove forebay for power generation purposes. A portion of the parcel was also historically used as a fish hatchery, which altered flow paths throughout the parcel.

The desired condition of the parcel, particularly in regard to management of spring flows, was a specific point of discussion in the relicensing process. License Article 410 states that PacifiCorp will develop a plan to modify the flow from Kackley Springs to benefit aquatic resources in the Bear River. Pursuant to this requirement, the *Implementation Plan: Bear River Hydroelectric Project* states that if assessment of flow effects on BCT and other aquatic life indicates that re-diversion of the spring flow to the bypassed reach is necessary, in year 5 of the License PacifiCorp will either re-divert the flows (less 0.3 cfs retained on the Kackley parcel) or "maintain Kackley Springs in a condition favorable to aquatic resources."

PacifiCorp provides public access through the parcel by a maintenance road that runs south through the parcel from the Grace facilities to the Cove plant. There is limited signage except for a speed sign and PacifiCorp operations-related safety signage. There is an undeveloped parking area on the east side of the forebay, and while camping is prohibited there is evidence of recreational activity, particularly fishing.

There are intact fences near the property line on the east, south, and north sides. There are also several interior fences, but no fences exist along the river's reach or around the springs and wetlands.

The Kackley Springs lease parcel has traditionally been grazed in rotation with the Sant parcel. However, as noted above, much of the grazing was concentrated around Kackley Springs where a majority of the forage for livestock was provided. Water sources for cattle included the Cove forebay, Kackley Springs proper, and other tributary channels. Until 2005, portions of the parcel were flood-irrigated to provide for grazing. Irrigation practices have largely influenced the

parcel's hydrology. Dominant species include rushes, sedges, cattails with Great Basin wildrye (*Elymus cinereus*), quack grass, and annual grasses found in the uplands. Currently, the south end of the parcel is not flood irrigated but contains a large stand of wildrye-dominated, native grassland. Portions of this pasture around the Cove forebay (on the west side of the road) are dry with no groundwater sources. This area is highly disturbed with little or no topsoil and contains mostly non-native annual grasses.

Weed infestation is concentrated in the wetland and riparian areas and includes thistles, some aquatic weed species, and whitetop. Current treatment includes annual weed spraying and, until 2005, livestock grazing.

2.3.7 COVE PLANT PARCEL

The Cove Plant parcel (Figure 5) is located on the east shore of the Bear River and is the southernmost parcel on the Grace-Cove site. The Cove powerhouse and pressure box are located on the plant parcel. Historically, the site also contained employee housing. The houses were removed but a storage shed remains. The site of the former houses is now a site of historical interest. Therefore, the site will be maintained with management actions that include keeping the lawn area intact. The parcel also encompasses a small portion of the southern end of the Cove flume and spillway.

A parking area is located at the Cove powerhouse and is typically used by plant operations and maintenance personnel, but it is also used by fishermen accessing the river. There is currently no public signage in the area except that denoting operations-related matters. Most of the property boundary is delineated with intact fencing, and several interior fences are present.

The Cove Plant parcel has historically been grazed under a five-pasture rotation system, and the fences function to delineate these grazing pastures that include: (1) the north pasture, (2) the corral pasture, (3) the cove penstock pasture, (4) the housing pasture, (5) the meadow pasture, and (6) the bench pasture (Figure 5). The western edge of the pastures next to the river has been fenced with electric fencing on the southern end and barbed wire on the northern end to buffer the river's riparian community. However, cattle from the adjacent property routinely cross the river and graze the riparian area up to the PacifiCorp fences. The pasture north of the spillway (north pasture) has also not been grazed by the lessee due to the spillway, but is grazed by trespass livestock crossing the river.

The lessee typically grazes five to six head of weaned calves on the five small fenced pastures. Cattle are rotated through the pastures approximately three times per year. The lessee irrigates some of the pastures to a limited extent. Three water sources are used for livestock watering. On several of the east pastures including the cove penstock pasture, the corral pasture, and the bench pasture, the cattle utilize the irrigation ditch for water. On other pastures culinary water is used, and on the meadow pasture a small portion of the river is fenced to provide a hardened river gap. While grazing management to date has apparently been effective, a formalized grazing management plan establishing the five-pasture rotation and limits on timing and utilization have not been established for the parcel and its pastures.

The parcel's pastures consist of differing plant communities ranging from wet meadow vegetation on the parcel's southern end, to a bluegrass monoculture on the historic lawn site or housing pasture, to historically disturbed areas where upland plant communities and annual grasses dominate. A common practice among adjacent landowners in the wet meadow is to remove decadent forage by burning in the spring. In the spring of 2005, a prescribed burn on property

adjacent to the wet meadow spread to the meadow pasture. This practice appears to result in vegetation regrowth and to contribute to the current health and diversity of plants.

Localized weed infestations are common and persistent throughout disturbed areas of the parcel. The presence of weeds (particularly thistle) is limited in the grazed wetland, and more concentrated to drier areas where the cattle have foraged on more palatable grasses. The uppermost, eastern segment of the parcel has a substantial weed infestation including thistle, houndstongue, and a large component of non-native annual grasses. Current treatments include annual weed spraying along the roadway in the spring. The lessee also spends considerable time and effort spraying weeds with a backpack sprayer throughout the grazing season. The west side of the meadow pasture has had rock spoil placed along the river bank. These piles have become infested with weeds.

2.4 ENVIRONMENTAL CONFLICTS

The summaries of current, on-site conditions provided above indicate a number of inconsistencies with License articles, guidelines of the LMP and RTSP, and Desired Future Conditions on each of the planning area parcels. These environmental conflicts can be grouped according to the issue categories established in Section 1.3. The following table summarizes these grouped conflicts for each parcel.

Table 3. Environmental conflicts.	
<i>SANT PARCEL</i>	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Cattle have access to the parking area from the east side. • Recreation opportunities, rules, and boating access at the Black Canyon take-out are not evident. • Litter/debris at the Black Canyon take-out and parking areas is evident. • The portable toilet is located in front of the “Handicapped Parking” sign. • Two prohibited firerings are located at the boat take out and one in riparian area adjacent to the parking area. • Property ownership is unmarked at the south entrance. • The parcel’s property boundary delineation is incomplete. • Existing fence lines are incongruent or are in disrepair.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • The weed control contract has not been revised. • Weed management issues are evident throughout the parcel.

Table 3. (cont'd) Environmental conflicts.	
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Riverine system and key wetland area are not fenced to buffer livestock impacts.
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • The lease agreement or grazing management plan has not been updated. • Formal grazing utilization monitoring has not occurred.
MANSFIELD PARCEL	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Property boundary delineation is incomplete and is not adequately demarcated. • The southern gate allows unregulated vehicle access to the parcel.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Debris, ground disturbance, and significant weed infestation occur throughout the parcel and along water conveyance line.
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Slight reduction of flow from the spring and associated tributary due to 2-inch pipeline diversion to the old homestead located on the Sant Parcel. • Evidence exists of grazing and trampling of riparian and wetland habitats along 0.3 mile of a small spring-fed tributary on the west side of the river near the Black Canyon take-out.
<i>Agricultural Uses</i>	Not Applicable.
PENSTOCK PARCEL	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • The fenceline delineating the parcel may not be accurately aligned with the property boundary and is not adequately signed.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Weed management issues are evident along and around the penstock access roads. • Access roadways have evidence of some erosion.

Table 3. (cont'd) Environmental conflicts.	
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Cattle have access to the limited wetland system and to the spring boxes but prefer areas where the forage is more abundant.
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • There is no current lease agreement or grazing management plan. • Formal grazing utilization monitoring has not occurred.
COVE FOREBAY WEST PARCEL	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Property boundary survey and delineation is incomplete. • The northern fence is incomplete and cattle from adjacent land have access to the parcel.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Localized weed management issues are evident within the parcel.
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Wetland and riparian habitats have been altered due to past grazing.
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • Not Applicable.
DUGWAY PARCEL	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Property ownership is not demarcated.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Weed and other undesirable plant species are evident in isolated areas within the parcel.
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Cattle have access to the channel located on the south end of the pasture.

Table 3. (cont'd) Environmental conflicts.	
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • The lease agreement and grazing management plan have not been revised. • Formal grazing utilization monitoring has not occurred.
<i>KACKLEY SPRINGS PARCEL</i>	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Property boundary delineation is incomplete.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Weed and other undesirable plant management issues are evident throughout the parcel.
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • Flow diversions, construction activities, and grazing have altered wetlands and wetland habitats.
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • Not Applicable.
<i>COVE PLANT PARCEL</i>	Conflicts
<i>Public Access</i>	<ul style="list-style-type: none"> • Property boundary delineation is incomplete. • Trespass grazing occurs along the river riparian the length of the parcel and in the northwest pasture.
<i>Vegetation Management</i>	<ul style="list-style-type: none"> • Localized weed and other undesirable plant management are evident throughout the parcel.
<i>Wetland and Riparian Habitat Management</i>	<ul style="list-style-type: none"> • The parcel's northwest boundary is not fenced to protect the river riparian area.
<i>Agricultural Uses</i>	<ul style="list-style-type: none"> • There is no current lease agreement or grazing management plan. • Formal grazing utilization monitoring has not occurred.

3. PARCEL-SPECIFIC IMPLEMENTATION PLAN

Management recommendations for the seven PacifiCorp-owned parcels are intended to rectify the conflicts identified in Section 2.4. Management actions will track management guidelines and standards described in the RTSP and the LMP (Appendix A) as well as additional management recommendations identified through this planning process specific to the Sant parcel's multiple uses. The following provides an overview of the corrective actions to be taken for each parcel.

3.1 SANT PARCEL

3.1.1 PUBLIC ACCESS

The primary access management actions to be taken on the Sant parcel include:

- Fence the eastern boundary of the parking area and include a cattle guard or grate at the entrance to prevent cattle access and to minimize user conflicts.
- Add recreation/interpretive signage at the entrance to parcel, the parking area, and the take-out to include the following: (1) a recreational rules sign; (2) a "Part 8" sign; (3) a "Benefits of Hydro Power" sign; (4) a "Stop" sign; (5) a "No Fires" sign; or (6) a "Speed Limit 10 mph" sign.
- Maintain the Black Canyon parking area to improve and maintain high-quality access conditions. In addition, the access road to the Black Canyon take-out and parking area generally requires annual maintenance and grading. Road management will continue to ensure public access to the Black Canyon take-out, though winter access may not be available on a daily basis during periods of snowfall. It is recommended that grading in the late spring prior to heavy user traffic will be most effective.
- Add signage reminding visitors to carry out their own garbage (pack in, pack out, etc.).
- Ensure that the portable toilet is placed next to the "Handicapped Parking" sign, and that it is maintained on a regular basis.
- Destroy existing fire rings near the Black Canyon parking area and rehabilitate the area to dissuade fire use in the future and to restore the area to a more natural state.
- Maintain the boat take out and remove litter/debris at the recreation site.

In addition, PacifiCorp has recommended that an adjustment to the current property/parcel boundary delineation be completed. The property's eastern boundary currently does not match the existing fence line. Rather than move the fence, PacifiCorp may redefine the property boundary. In addition, it is important that the fencelines and fenceposts are maintained in a functional condition.

The recreation site will need to be inspected periodically for signs of environmental damage, and appropriate steps will be taken if damage is detected.

Finally, in compliance with FERC Relicensing, a summary report including the FERC Form 80 will be submitted to the ECC for review and filed with FERC accounting the progress made toward implementation of the RTSP and/or any changes to the RTSP program.

3.1.2 VEGETATION MANAGEMENT

Weeds will be controlled along roadways, in uplands near the Black Canyon take-out, and in the riparian area and wetland complex. To treat current weed infestations and to minimize the spread of noxious weeds, best management practices (BMPs) will be implemented in coordination with Caribou County Weed Control and with the Idaho State Department of Agriculture's Noxious Weed Program.

A more consistent and tailored weed control program is necessary for this parcel. As there is no single treatment method or timing for all weed species on the parcel, the weed infestations will be most successfully treated with a combination of chemical, biological, and mechanical treatments. These treatments may include herbicide applications, cattle grazing, prescribed fire, revegetation, and/or irrigation practices. Past weed control efforts have been successful with respect to reducing white top on the parcel.

Continuation of spring weed spraying along the roadsides, more frequent backpack spraying of upland infestations elsewhere on the parcel, and appropriate grazing rotation is recommended to control weeds. This combination of well-timed treatments will help to reduce widespread weed infestations. Backpack spraying may be required to control weeds in the wetland area in the parcel's southwest corner and in the buffered riparian zone. This ungrazed portion of the parcel should be monitored for invasive weedy species.

For all weed species present on the Sant parcel, the effective timing and frequency of spraying and grazing is plant specific. Spraying whitetop will be required in the early spring, and an additional application in the fall will limit seed dispersal. Annual backpack spraying or other mechanical treatment of deathcamas, thistles, poison hemlock, and houndstongue located along the riverine system and the Black Canyon take-out will be necessary. Mechanical or biological controls will be prioritized as feasible in the interest of water quality. Proper grazing practices will also help to effectively manage the spread of weeds throughout the parcel. The weed control contract for this and all other planning area parcels will be revised to include an increased area of coverage.

3.1.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

To contain livestock and buffer the riverine system and wetlands (i.e., Conservation land management category) from grazing, a fence will be constructed along the parcel's western edge. The fence will extend from the northwestern corner of the property to the parking area and extend around the wetland area located in the southern portion of the parcel (Figure 2). In accordance with License Article 425, the rights of the grazing lessee were considered in formulation of this buffer plan.

3.1.4 AGRICULTURAL USES

Grazing will continue to be permitted on the Sant parcel. The interior north/south fence will be reconstructed as shown in Figure 2 to allow a two-pasture grazing system within the parcel. Due to the size of the parcel, the number of livestock grazing the parcel (about 25 pair), and the short

grazing season, a two-pasture grazing rotation will improve the management of the vegetation. The grazing lease will be updated in 2005 to include the parcel's grazing management plan specifying the following recommendations:

- Livestock will be allowed to graze the parcel after May 10. Grazing will typically begin in the east pasture because that pasture tends to dry up faster.
- Adaptive management will be employed to monitor grazing and make adjustments as necessary.
- Grazing will continue until moderate utilization (31 – 60 percent; see Section 4.1.1) of the key forage species on a given pasture has occurred. Key forage species on each pasture and their average ungrazed height are identified in Appendix B.
- The number of animal units grazed will be allowed to vary on an annual basis depending on available forage but will typically range between 24 and 30. An animal unit consists of one cow and her calf.
- Grazing will be monitored throughout the grazing season by the lessee, with spot checks by PacifiCorp. PacifiCorp will train the lessee on forage utilization monitoring method. Following an initial pre-grazing forage height assessment, the lessee will be required to submit monthly utilization reports to PacifiCorp. Once the utilization limit has been met on all pastures, livestock will be removed from the parcel. On pastures where regrowth occurs due to irrigation, additional grazing will be allowed as long as sufficient plant matter is left to insure the health of forage species and protect the soil in the fall. Sufficient plant matter will be defined as the amount that would be left following moderate utilization of key forage species after the initial grazing (see Section 4.1.1).
- The parcel will also be monitored in the longer term by PacifiCorp for signs of overgrazing (i.e., decreases in desirable species, increases in undesirable species, increases in weed infestations, etc.; see Section 4.2).

Natural water exists in each pasture through much of the grazing season. When water is limiting, water will be piped from the homestead area to a water tank. If necessary, a small river access point south of the parking area will permit cattle access to the river to provide water to cattle in the west pasture.

A north/south interior fence will be constructed near the old fence line to improve the two-pasture grazing system. All perimeter and internal fences will be maintained on an annual basis and during the grazing season.

3.2 MANSFIELD PARCEL

3.2.1 PUBLIC ACCESS

The parcel's west boundary is not currently delineated. The western side of the parcel consists primarily of lava rock, which makes access difficult for humans and impossible for livestock. Although the terrain is steep and rocky, it would be appropriate to mark the boundary corners to

clearly demarcate property ownership. The north and south ends of the parcel are currently partially fenced, but the fences may not accurately reflect the parcel boundary. The existing pedestrian bridge will be maintained as the primary public access to the parcel.

3.2.2 VEGETATION MANAGEMENT

The most pressing issue on the Mansfield parcel is reclamation of the disturbed area around the reconstructed 12-inch water conveyance line and the associated construction staging area. The following measures will be taken to recover the area:

- Remove discarded steel pipeline segments and other debris from the parcel.
- Repair the side cuts and drainage pathways along the pipeline corridor. Feather or taper the edges and cover with available topsoil. Where topsoil is available, spread it on the site to ensure successful revegetation. Leave the flattened surface primarily intact for future maintenance and repairs. This will minimize the impact of future activities along the pipeline corridor.
- Revegetate the entire road area with primarily native vegetation (weed free, native seed mixture) to reduce the visual impact of a linear feature.
- Secure the southern access gate to prohibit future vehicle travel without PacifiCorp approval. If maintenance is required on the conveyance pipe, written notice will be required of the owners describing the type of work prior to access being permitted.
- Spot treat weed species along the pipeline corridor with herbicide to control weeds. Care should be taken to avoid spraying new broadleaf or shrubby vegetation planted to revegetate the corridor.

Biannual backpack herbicide applications will be necessary to control weeds throughout the parcel and to encourage complete site recovery. The limited wetland area along the riverine system will not require prescribed reclamation; however, the 0.3-mile stretch where cattle had historically concentrated will require more intensive weed control measures. This would include more frequent backpack spraying and/or using livestock for very short intervals prior to seed dispersal.

3.2.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

The small diversion of the main spring on the Mansfield parcel that delivers water through a pipeline across the river to the homestead area on the Sant parcel could potentially reduce the spring's flow. It is recommended that the diversion be investigated to determine if the spring flow could be returned to the Bear River.

Exclusion of livestock from the parcel will provide adequate protection to previously grazed riparian and wetland habitats.

3.2.4 AGRICULTURAL USES

The grazing lease for this parcel was not renewed for the 2005 grazing season. Traditional season-long grazing will not be permitted on the Mansfield parcel under this plan. In the future,

when the site has recovered, it may be appropriate to integrate grazing into the management protocols for the parcel if it is determined that ecological processes could be advanced.

3.3 PENSTOCK PARCEL

3.3.1 PUBLIC ACCESS

Public access on the Penstock parcel is not allowed. It would be appropriate to place signs at the parcel access points prohibiting unauthorized personnel. This would be a preventative measure to deter potential off-highway vehicle access to the surge tank area. The alignment of the boundary fence and the actual parcel boundary will be verified and appropriate measures taken to facilitate effective implementation of this Site Plan.

3.3.2 VEGETATION MANAGEMENT

The primary concentrations of invasive weeds are along the two roadways. Roadside weed spraying would be difficult due to the steep terrain, so spring backpack spraying would be a more appropriate method for weed control on the roads. In addition, erosion control measures including waterbars on the roads will be required to alleviate further soil movement. Water bars are intended to reduce runoff velocity and divert water off of the roads. Water bars will be made of existing soils on the site. Water bars will be placed every 200 feet across the roads and will be constructed with a 2-to-8-percent outslope to divert surface flow to a stable area. While soil movement has not been a significant issue to date, the occurrence of a significant storm event or an unseasonably wet spring could result in excessive erosion due to the gradient of the roads

Grazing of the parcel would continue, as discussed below. Due to the size of the area and the number of livestock, the area is only grazed for a short period of time. This practice will be effective in reducing vegetation to minimize fire concerns and reduce the amount of annual grasses.

3.3.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

The limited wetland area and stream channel and the springs are boxed are not fenced from potential cattle impacts. Post-grazing observations of the wetland indicate no adverse impact due to grazing, likely because of the cattle's preference for "sweet" upland forage rather than coarser wetland species. As more desirable water and forage sources are available through the length of the short grazing period, cattle use of the wetland area is likely minimal. Therefore, no management action is currently necessary to prevent grazing damage to wetland resources. If monitoring indicates a need, the lower wetland area could be fenced with either permanent or electric fence.

3.3.4 AGRICULTURAL USES

Grazing on the Penstock parcel, albeit limited, will continue to be authorized as part of the Sant parcel grazing lease. As such, the Sant grazing lease will include this parcel. Discussion of appropriate timing, duration and numbers will also be addressed in the lease agreement.

The Penstock parcel is typically grazed for only 1 to 2 weeks each year. The parcel is small and therefore will not sustain livestock grazing for an extended period. Since the parcel is managed

as part of the Sant parcel lease, the number of livestock is the same each year (about 25 head) as on that parcel. Grazing of the parcel occurs after the Sant parcel has been grazed. Grazing will continue until moderate utilization (31 – 60 percent; see Section 4.1.1) of the key forage species has occurred, and then cattle will be removed from the parcel.

Monitoring of grazing will occur throughout the period the parcel is grazed. The lessee will be required to submit monthly utilization reports to PacifiCorp. Once the utilization rate has been met, livestock will be removed from the parcel. The parcel will be monitored for signs of overgrazing (i.e., decreases in desirable species, increases in undesirable species, increases in weed infestations, excessive impacts to the small wetland areas and streams, etc.). See Sections 3.1.4 and 4 for more detail on utilization and trend monitoring.

3.4 COVE FOREBAY WEST PARCEL

3.4.1 PUBLIC ACCESS

Completion of the property survey and boundary adjustment as appropriate will be required. While the parcel has limited public access, boundary delineation is still necessary. Completion of the boundary fence will be necessary to prevent trespass grazing, thus protecting the relatively intact riparian area on the parcel's eastern boundary.

3.4.2 VEGETATION MANAGEMENT

Properly timed backpack herbicide applications, or other mechanical or biological controls where appropriate, will be required along the shoreline and in localized interior areas to control current weed infestations and prevent further infestations. Future biological controls including grazing and/or fire may be utilized for weed control but no formal grazing lease will be established.

3.4.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

As noted above, completing the boundary fence will prevent trespass grazing, protecting the riparian zone and wetlands. No further fencing or management action is necessary.

3.4.4 AGRICULTURAL USES

Livestock grazing has not formally been permitted on this parcel. However, trespass grazing by neighboring livestock has occurred. After the property boundary issue has been addressed and the boundary fence is completed, trespass grazing will not likely occur. Once the fence is constructed, annual monitoring should occur to ensure that the fence remains functional.

3.5 DUGWAY PARCEL

3.5.1 PUBLIC ACCESS

Parcel's ownership is not currently demarcated. Because of the parcel's proximity to the Cove forebay and public use areas, it would be appropriate to demarcate the property ownership to restrict public access to the parcel.

3.5.2 VEGETATION MANAGEMENT

Biannual backpack herbicide applications and/or using livestock for very short intervals prior to seed dispersal will be necessary to control the isolated weeds infestations and to encourage complete site recovery in the parcel.

3.5.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

Cattle currently have access to a small portion of a stream channel for water. It is recommended that this area be fenced entirely to exclude cattle from the area and thus reducing any potential damage that may occur as a result of watering at this site. As an alternative to this watering site, placing a water trough on an existing pad in the northeast corner of the parcel would alleviate pressure at the channel.

3.5.4 AGRICULTURAL USES

Grazing will continue to be permitted on the Dugway parcel. The existing fence lines provide adequate enclosure for the cattle. Due to the size of the parcel, the number of livestock grazing the parcel (about 25 pair) and the short grazing season will improve the management of the vegetation. The grazing lease will be updated in 2005 to include the parcel's grazing management plan specifying the following recommendations:

- Livestock will be allowed to graze the parcel after May 10.
- Adaptive management will be employed to monitor grazing and make adjustments as necessary.
- Grazing will continue until moderate utilization (31 – 60 percent; see Section 4.1.1) of the key forage species has occurred. Key forage species on each pasture and their average ungrazed height are identified in Appendix B.
- The number of animal units grazed will be allowed to vary on an annual basis depending on available forage but will typically range between 24 and 30. An animal unit consists of one cow and her calf.
- Grazing will be monitored throughout the grazing season by the lessee, with spot checks by PacifiCorp. The lessee will be required to submit monthly utilization reports to PacifiCorp. Once the utilization limit has been met on the parcel, livestock will be removed from the parcel. Where regrowth occurs due to sprinkle irrigation, additional grazing will be allowed as long as sufficient plant matter is left to insure the health of forage species and protect the soil in the fall. Sufficient plant matter will be defined as the amount that would be left following moderate utilization of key forage species after the initial grazing (see Section 4.1.1).
- The parcel will also be monitored in the longer term by PacifiCorp for signs of overgrazing (i.e., decreases in desirable species, increases in undesirable species, increases in weed infestations, etc.; see Section 4.2).

3.6 KACKLEY SPRINGS PARCEL

3.6.1 PUBLIC ACCESS

The existing road will be maintained as needed, though winter access may not be available on a daily basis during periods of snowfall. Property boundary delineation will be completed. At this time, no other access management actions are necessary.

3.6.2 VEGETATION MANAGEMENT

The area around the access road and forebay is highly disturbed due to construction of the Cove Development, and the lack of topsoil limits reclamation potential. This area is easily accessible to vehicles and regular herbicide application will be maintained to reduce the current weed infestation. Localized infestations occur throughout the interior of the parcel, and regularly scheduled control efforts, using appropriate methods, will be undertaken to control them. Given the diversity of weed species, biannual weed control campaigns may be initiated.

3.6.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

As noted above (Section 2.3.5), most of the wetlands currently on the parcel result from prior manipulation and diversion of spring flows originating on the parcel, and PacifiCorp has agreed, in year 5 of the License, to either re-divert flows from Kackley Springs into the bypassed reach or to “maintain Kackley Springs in a configuration favorable to aquatic resources.” Thus, various options to manage, enhance, or re-divert flows may be available.

In year 5 of the License, PacifiCorp will, in conjunction with the ECC, develop and implement a plan for management of Kackley Springs flows. The funding allocation for this activity is \$10,000, and the ECC will be involved in planning and approving the effort. Future decisions to be made include determining what “condition favorable to aquatic resources” best meets the goals of the ECC, how to best achieve this given the license commitment, and any other resources identified by the ECC (e.g., other grants or supplemental funding through the ECC-funded aquatic and riparian enhancement projects). The means of achieving the greatest benefit to aquatic resources will be determined at that time.

In the future, livestock grazing may be allowed if it is determined, with ECC concurrence, that ecological processes could be benefited (i.e., weed control, litter removal, etc.). Otherwise, aside from cessation of the grazing lease (see Section 3.4.5 below), no management actions are required.

3.6.4 AGRICULTURAL USES

In 2005, livestock grazing on the Kackley Springs parcel was discontinued. Livestock grazing may be allowed in the future if specific ecological goals can more rapidly be achieved by grazing than by other management practices. Future utilization of the northeast, fenced pasture could be integrated into the Sant parcel’s grazing system. The northeast pasture does not contain wetlands and is limited in size. Livestock will be watered by trough through the current irrigation system if grazing occurs.

3.7 COVE PLANT PARCEL

3.7.1 PUBLIC ACCESS

The existing road will be maintained as needed, though winter access may not be available for some lengthy periods, depending on snowfall. Access to this parcel will also be affected by the outcome of the pending decommissioning of the Cove Development. If the Cove plant is removed as currently proposed, there will be no need for daily operational access to the plant. The road will only be plowed and available for winter access by the public dependent on plant operations staff time constraints. Boundary delineation will be completed and marked appropriately. Although it does not appear necessary at this time, signage indicating recreational opportunities and guidelines could be placed at the parking area near the power plant. These signs would serve informative and educational purposes.

3.7.2 VEGETATION MANAGEMENT

Weed management on the parcel will be addressed with the following methods:

- Intensive backpack spraying in addition to cattle grazing to prevent further spread of weeds on individual pastures.
- Integration of prescribed, controlled fire like that used on the adjacent parcel to manage and diversify the vegetation community in the wetland pasture.
- Backpack spraying on rock spoil mounds and along the shoreline to control weed infestations. Other mechanical or biological treatment will be employed as feasible in proximity to water and in wetlands.

3.7.3 WETLAND AND RIPARIAN HABITAT MANAGEMENT

The riparian buffer on the southern portion of the parcel is currently fenced with electric wire. It provides an adequate means of excluding cattle from that area. The northern portion of the riparian area is fenced but cattle are able to access the buffered area from the property across the river. Placement of an electric fence along the shoreline will keep cattle off of the riparian vegetation. Similarly, cattle can access the bypassed reach and there is evidence of resource impacts in this area as a result. In accordance with License Article 425, the rights of the grazing lessee were considered in formulation of this buffer plan.

3.7.4 AGRICULTURAL USES

Livestock grazing on the Cove Plant parcel will be formalized with a management plan incorporated into the lease agreement. The current grazing rotation will continue to be utilized. Livestock will continue to be watered by irrigation, culinary water, or at the river, depending on the pasture that is being grazed.

Of the five pastures, two pastures are upland areas that receive no irrigation, one pasture is upland with limited irrigation, one pasture consists of lawn grass that is irrigated, and one pasture is a wet meadow that receives irrigation flows.

Irrigation of some of the pastures will continue in order to provide adequate forage throughout the grazing season. Due to the differing vegetation types within each pasture, the grazing rotation will vary depending on pasture readiness and vegetation regrowth from irrigation. Grazing will cease in each pasture once moderate utilization (31 – 60 percent; see Section 4.1.1) of the key forage species has occurred. On pastures where regrowth occurs due to irrigation, additional return grazing will be allowed as long as sufficient plant matter is left to insure the health of forage species and protect the soil in the fall. Sufficient plant matter will be defined as the amount that would be left following moderate utilization of key forage species after the initial grazing (see Section 4.1.1)

It is recommended that cattle continue to graze in the meadow pasture, as little disturbance due to past grazing is evident. Grazing in that pasture has primarily focused on the upland fringes of the pasture with limited grazing in the wet meadow proper. This grazing pattern has helped control weeds and annual grasses.

Monitoring of grazing will occur throughout the period the parcel is grazed. The lessee will be required to submit monthly utilization reports to PacifiCorp. Once the utilization rate has been met on a given pasture, livestock will be removed from that pasture or from the parcel if irrigated regrowth is not sufficient in other pastures. The parcel will be monitored for signs of overgrazing (i.e., decreases in desirable species, increases in undesirable species, increases in weed infestations, excessive impacts to the small wetland areas and streams, etc.). See Sections 3.1.4 and 4 for more detail on utilization and trend monitoring.

3.8 IMPLEMENTATION SCHEDULE

The following table outlines the management actions to be undertaken on each parcel (as discussed in Sections 3.1 – 3.6) and notes the scheduled implementation date and the schedule for post-implementation monitoring. Monitoring efforts are described in detail in Section 4.

Table 4. Implementation Schedule for the Grace-Cove Site Plan.

<i>SANT PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Fence the parking area’s east side and install a cattle gate or guard. 	Fall 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> Sign the Black Canyon take-out and the parking area with: (1) a recreational rules sign; (2) a “Part 8” sign; (3) a “Benefits of Hydro Power” sign; (4) a “Stop” sign; (5) a “No Fires” sign; (6) a “Speed Limit 10 mph” sign; and, a “Pack It In, Pack It Out” sign according to the RTSP, Appendix C. 	Spring 2006	Monthly inspections: Replace signs that are missing or damaged within 5 days (in season). Replace traffic control signs immediately.	Scheduled— Spring 2006
	<ul style="list-style-type: none"> Maintain the parking area and the roadway according to RTSP standards, pg. 29. 	Ongoing	Annual inspection. Weekly inspection of the portable toilet. Biweekly removal of debris.	Ongoing
	<ul style="list-style-type: none"> Destroy existing fire rings near the Black Canyon parking area and the boat take out; rehabilitate these sites. 	Spring 2006	Annual inspection.	Scheduled— Spring 2006
	<ul style="list-style-type: none"> Maintain boat access at Black Canyon take-out (RTSP, pg. 29). 	Ongoing	Monthly (in season) inspection of boat launches for debris. Biannually (pre- and post-season) inspection of boat launch and removal of debris.	Ongoing
	<ul style="list-style-type: none"> Complete the property boundary delineation on the east and south ends. 	Fall 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> Ensure fence and fence post condition for all boundaries 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Inspect recreation site and surrounding areas to document any potential environmental damage. 	Summer 2010	5-year intervals	Ongoing

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>SANT PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Vegetation Management	<ul style="list-style-type: none"> Revise the weed control contract to include backpack spraying and other appropriate techniques on areas away from roads and operating facilities. (Note: this action would affect all planning area parcels.) 	Spring 2006	Revise as needed; monitor seasonally.	Ongoing
	<ul style="list-style-type: none"> Annual or biannual backpack spraying throughout the parcel to manage weeds only after biological and mechanical treatments have been evaluated.. 	Ongoing	See the Performance Tracking form.	Ongoing
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Fence the riparian system extending from the west parking area boundary along the river (Figure 2). 	Fall 2005	Annual inspection.	2005
Agricultural Uses	<ul style="list-style-type: none"> Update the grazing lease agreement. 	Spring 2006	Update as needed; monitor seasonally per lease/monitoring plan.	In process
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Spring 2006	Update as needed.	Ongoing
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Monthly	See the Performance Tracking form.	Ongoing
	<ul style="list-style-type: none"> Reconstruct north/south interior fence to allow a two-pasture grazing system within the parcel. 	Fall 2005	Annual inspection.	2005

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>MANSFIELD PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> • Post the west boundary with property delineation markers. • Determine whether north and south boundary fences are complete and accurately placed, and address any discrepancies noted. • Ensure fence and fence post condition on all boundaries. • Maintain existing pedestrian bridge. 	Summer 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> • Secure the southern access gate to prohibit future vehicle travel without PacifiCorp approval. If maintenance is required on the conveyance pipe, written notice will be required of the owners describing the type of work prior to access being permitted. 	Fall 2005	Annual inspection.	Spring 2006
Vegetation Management	<ul style="list-style-type: none"> • Rehabilitate the water conveyance line by completing the following measures: <ol style="list-style-type: none"> 1. Remove discarded, steel pipeline segments and other debris from the parcel. 2. Repair the side cuts and drainage pathways along the 12-inch pipeline corridor. Feather or taper the edges and cover with available topsoil. During the repair process, place topsoil on the surface to enhance revegetation efforts. Leave the flattened surface primarily intact for future maintenance and repair. 3. Revegetate the entire area with native vegetation (weed free, native seed mixture) to reduce the visual impact of a linear feature. 	Fall 2005/ Spring 2006	See the Performance Tracking form.	2005

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

	<ul style="list-style-type: none"> • Spot treat weed species along the pipeline corridor with herbicide to control weeds. Care should be taken to avoid spraying new broadleaf or shrubby vegetation intended for the corridor. • Biannual backpack herbicide applications will be necessary to control weeds throughout the parcel and to encourage complete site recovery. • Intensive backpack spraying weed control along 0.3 stretch of river integrated with other mechanical and biological control measures. 	Annual and/or biannual treatments as needed, beginning Spring 2005.	See the Performance Tracking form.	Ongoing
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> • Investigate piped diversion to determine if spring flow could be returned to Bear River. 	Spring 2005	Spring 2005	2005
Agricultural Uses	Not Applicable.			

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>PENSTOCK PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Confirm boundary alignment and post the west boundary with ownership signs. 	Fall 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries. 	Spring 2006	Annual inspection.	Ongoing
Vegetation Management	<ul style="list-style-type: none"> Spray herbicides along the penstock access roads to manage weeds. 	Annual and biannual treatments as needed, beginning Spring 2005.	See the Performance Tracking form.	Ongoing
	<ul style="list-style-type: none"> Construct water bars every 200 feet on the access roads made from soil with a 2 to 8 degree outslope to divert water flow. 	Spring 2006	Annual inspection.	Scheduled— Spring 2006
	<ul style="list-style-type: none"> Utilize short-duration (10 days) grazing as an additional control for weedy annual grasses. 	Ongoing	See the Performance Tracking form.	Ongoing
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> As long as the wetland area and spring boxes are not grazed, no other actions are required. 	Spring 2006	Annual inspection.	Scheduled— Spring 2006
Agricultural Uses	<ul style="list-style-type: none"> Include the parcel in the grazing lease agreement for the Sant and Dugway parcels. 	Spring 2006	Update as needed; monitor seasonally per lease/monitoring plan.	In process
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Spring 2006	Update as needed.	Ongoing
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Monthly	See the Performance Tracking form.	Ongoing

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>COVE FOREBAY WEST PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Complete the property delineation and boundary fence and post indicating ownership. 	Summer 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries. 	Spring 2006	Annual inspection.	Ongoing
Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures along the riparian area and in localized, internal areas. 	Spring 2006	See the Performance Tracking form.	Ongoing
	<ul style="list-style-type: none"> Revise the monitoring plan for weeds and revegetation following Cove decommissioning activities. 	Fall 2006	See the Performance Tracking form.	2006
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Revise the monitoring plan for wetland and riparian areas following Cove decommissioning activities. 	Fall 2006	See the Performance Tracking form.	2006
Agricultural Uses	Not applicable.			

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>DUGWAY PARCEL</i>	Corrective Action	Timeframe	Post-Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Complete the parcel fence. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Ensure fence and fence post condition. 	Spring 2006	Annual inspection.	Ongoing
Vegetation Management	<ul style="list-style-type: none"> Control localized weed infestations with backpack herbicide applications to encourage complete site recovery. 	Annual and biannual treatments as needed, beginning Spring 2005.	See the Performance Tracking form.	Ongoing
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Fence the channel currently used as the cattle water source and develop a water trough in the northeast corner of the parcel. 	Spring 2006	Annual inspection.	Ongoing
Agricultural Uses	<ul style="list-style-type: none"> Include the parcel in the grazing lease agreement for the Sant and Penstock parcels. 	Spring 2006	Update as needed; monitor seasonally per lease/monitoring plan.	In process
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Spring 2006	Update as needed.	Ongoing
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Monthly	See the Performance Tracking form.	Ongoing

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>KACKLEY SPRINGS PARCEL</i>	Corrective Action	Timeframe	Post-Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Confirm that boundary delineation and fencing are complete and accurate. 	Fall 2005	Annual inspection.	2005
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Maintain the existing road. 	Ongoing	Annual inspection.	Ongoing
Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures throughout the parcel. 	Ongoing	See the Performance Tracking form.	Ongoing
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> With the ECC, develop and implement a plan to either re-divert Kackley Springs flows or otherwise maintain them in a configuration favorable to aquatic resources. 	2009	Update as needed.	Future actions only
Agricultural Uses	Not applicable.			

Table 4. (cont'd) Implementation Schedule for the Grace-Cove Site Plan.

<i>COVE PLANT PARCEL</i>	Corrective Action	Timeframe	Post- Implementation Monitoring Schedule	Completed?
Public Access	<ul style="list-style-type: none"> Complete the property delineation. 	Summer 2005	Annual inspection.	Partially complete in 2005; finish with Gilbert acquisition. Scheduled—Spring 2006
	<ul style="list-style-type: none"> Ensure fence and fence post condition. 	Spring 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Maintain the existing road. 	Ongoing	Annual inspection.	Ongoing
Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures throughout the parcel, including specifically the rock spoil piles on river bank. 	Ongoing	See the Performance Tracking form.	Ongoing
	<ul style="list-style-type: none"> Complete Cove bypass fence project. 	Summer 2006	Annual inspection.	Ongoing
	<ul style="list-style-type: none"> Ensure Cove bypass fence condition. 	Summer 2006	Annual inspection.	Ongoing.
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Implement Cove bypass fencing to protect area from grazing impacts. 	Fall 2005	Annual inspection..	In conjunction with Cove Bypass fence plan; scheduled—2006
Agricultural Uses	<ul style="list-style-type: none"> Update the parcel's grazing lease agreement. 	Spring 2006	Update as needed; monitor seasonally per lease/monitoring plan.	In process
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Spring 2006	Annual inspection.	
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Spring 2006	Update as needed.	Ongoing
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Monthly	See the Performance Tracking form.	Ongoing

4. MONITORING

A central component of the LMP is monitoring the implementation, maintenance, and performance of management programs at each Project Development. Accordingly, monitoring is a key element of this Site Plan, and a structured plan for monitoring is outlined below. Two types of monitoring are included in the plan, compliance monitoring and performance tracking. The former addresses implementation and maintenance of the management actions specified in this Site Plan. The latter focuses on achieving the on-the-ground objectives (i.e., Desired Future Conditions; Section 1.3) of the management actions. As stipulated in the LMP, monitoring results will be included in annual reports to the FERC. Preparation of these annual reports will: (1) help PacifiCorp determine whether Site Plans should be adapted to observed, changing conditions over time, and (2) help prioritize management actions each year.

4.1 COMPLIANCE MONITORING

4.1.1 GENERAL COMPLIANCE

Compliance monitoring provides a mechanism to track implementation of the Site Plan. This aspect of monitoring is relatively straightforward. It consists of annual review of the year's progress in implementing the management or corrective actions comprised by the Site Plan, in accordance with the schedule described in Section 3.7. A compliance tracking form for each parcel is provided in Appendix C. The forms list the management actions and the timing of each, followed by a "yes/no" response blank and a "comment" blank. If a management action remains incomplete, the comment will specify the reason(s). This information will subsequently be considered by PacifiCorp, the ECC, and/or the FERC, as appropriate, providing a basis for revision of the Site Plan and/or implementation and monitoring schedules. Compliance monitoring will generally be completed by PacifiCorp personnel or contractors with the exception of forage utilization, as discussed below, where lessees also provide some monitoring input.

4.1.2 FORAGE UTILIZATION

Forage utilization is defined as the proportion of current year's total aboveground plant production that is consumed or trampled by grazing animals. It is based on key forage plant species rather than the entire plant community. It is a management tool rather than a management objective. While it is not an indicator of range condition and trend, it can be a useful variable to consider when interpreting condition and trend information. Various approaches have been developed to assess forage utilization, ranging from very basic ocular assessments of residual forage to complex methodologies involving clipping and weighing of forage plots. Selection of an appropriate approach is based primarily on the need being addressed and the resources available.

This Site Plan provides guidance for establishing forage utilization thresholds that will dictate when livestock are moved from one pasture to another within a leased parcel or removed from the parcel altogether (see Sections 3.1.4, 3.3.4, and 3.6.4). Pasture shifts will be part of day-to-day management and as such will be the responsibility of the grazing lessees. Therefore the lessees

will be charged with monitoring of utilization, subject to spot checks by PacifiCorp or contract personnel.

The approach to monitoring forage utilization selected for this application is relatively simple, based on ocular assessment of the amount of forage vegetation removed, but its accuracy depends to a large degree on the observer’s familiarity with the site. These factors make it well suited to this purpose. The method was described in a paper titled “Can I Monitor My Rangeland Effectively and Quickly,” by Jeff Mosely, Associate Professor and Extension Range Management Specialist, Montana State University (undated).

The method calls for identification of the key forage species in a given pasture then ongoing assessment of the amount of material removed from these species by grazing or trampling, in terms of both the percentage of individual plants that are grazed and the percentage of material removed from grazed plants. This assessment is based on the five-level classification of forage utilization described in Table 5.

Table 5. Levels of forage utilization.		
Use Class	Average Utilization of Individual Plants	Description
None	0%	No plants grazed.
Light	1-30%	Less than half of the plants receive 70% use, most plants ungrazed (0% use). Only the best forage plants grazed.
Moderate	31-60%	Most plants receive 70% use, a few plants at 10-30% use, and a few plants ungrazed (0% use).
Heavy	61-80%	Almost all plants receive 70% use or more, and very few, if any, ungrazed (0% use).
Severe	>81%	All plants grazed. Almost all plants receive 90% use.

Following identification of the key forage species for each pasture in the three grazing leases, the average ungrazed height of each species will be estimated based on the classifications shown in Table 5. This estimate is provided as an aid to assessing percent utilization, recognizing that (1) forage plant biomass is not linearly related to plant height, and (2) average plant height can vary substantially from season to season. This key species information will be recorded on forms provided in Appendix B and monthly utilization reports will be required from the lessee.

Estimation of utilization of individual plants is based on ocular assessment of grazed plants, so season-long observation of the pasture increases accuracy. The Mosley paper provides illustrations of various levels of utilization under uniform grazing (all of the plant grazed to a uniform level) and uneven grazing (only part of the plant grazed). These illustrations are included in Appendix B.

Planning area grazing lessees will be trained in this method, including field practice. Efforts will be made to involve the PacifiCorp or contract personnel who will be responsible for spot checking utilization in the planning area in the lessee training. This will help insure consistent assessments.

Assessment of forage utilization by the lessees will be ongoing through the grazing season. Utilization records per se will not be maintained by the lessees, but dates of pasture shifts, as well as the dates livestock are turned out onto the parcel and taken off, will be recorded. PacifiCorp or contract personnel will spot check utilization levels in the field repeatedly during the grazing season, and the results will be recorded on the compliance monitoring form discussed above (Section 4.1.1).

4.2 PERFORMANCE TRACKING

Performance tracking provides a means of assessing whether management actions, once implemented as documented by compliance monitoring, are achieving the goals and objectives of the Site Plan. Performance tracking assists Project personnel in assessing progress toward desired conditions for a given resource (Section 1.3), compliance with License requirements and LMP guidelines (Section 2.2 and Appendix A), and revising the parcel-specific implementation plans employing an adaptive approach to managing the planning area parcels.

Given the diversity of environmental conflicts discussed in Section 2.3 and summarized in Section 2.4, and the number of associated Desired Future Conditions, guidelines, and standards included in the LMP, a huge number of performance monitoring methodologies could potentially be developed. These could span significant ranges in terms of scope, objectivity, technical sophistication, cost, and time demand. The appropriate methodology for this application is broad in scope (i.e., is applicable to a number of environmental conflicts), objective, and relatively low in technical sophistication, cost, and time demand. Otherwise, performance tracking would be impractical and would likely not be effectively implemented. Based on these criteria, performance tracking will comprise the following steps:

- An initial site assessment of each parcel, completed in the first year of plan implementation, specifically focusing on the environmental conflicts identified through this planning exercise. A tracking form specific to each parcel, listing the conflicts summarized in Table 3, has been developed and is included in Appendix D. The tracking “data” will be text description of specific on-site conditions relative to the listed conflict. PacifiCorp or contract personnel will complete the initial site assessments.
- As part of the initial assessment photo points will be established, and reference photographs taken, where photo interpretation will effectively aid in tracking progress toward achieving the desired future condition (e.g., along the pipeline route on the Mansfield parcel, where visual, noxious weed, and erosion concerns are noted and addressed in this plan). The tracking form in Appendix D indicates where photo plots will be established. They will be located using a GPS and marked on the ground to allow replication. Guidance on the reference photograph methodology is provided in Appendix E.
- All or most of the information needed to complete the assessment forms was recorded in the course of this site planning exercise. This information will be transferred to the

appropriate forms. On-site work during the first year of implementation will consist primarily of review of the completed forms, establishment of the photo points, and taking the initial round of photos.

- The site assessments, including photographs, will be repeated periodically. The 5-year interval indicated by LMP for monitoring wetlands and riparian areas in the Conservation Lands management category will serve as the framework unless PacifiCorp or the ECC request a shorter interval for a given conflict, parcel, or site.
- This Site Plan, supported by the initial round of tracking forms and reference photos, will constitute the reporting of the initial site assessment. The results of subsequent assessments, each 5 years unless this schedule is altered, will be documented in the annual monitoring report submitted to the ECC and the FERC, at the 5-year intervals. These reports will summarize progress toward conflict resolution, identify any conflicts or sites where Site Plan management actions are not achieving adequate progress, and suggest revisions to pertinent management actions. The implementation schedule and tracking forms will be modified accordingly, establishing a new baseline for subsequent performance tracking.

This methodology will be consistent with adaptive management strategy upon which this plan, the LMP, and the RTSP are based. It will also be practical, cost effective, and appropriate to the task at hand. The combination of tracking form data and repeated reference photographs will allow for key issues such as weed control, condition and trend of vegetation on grazing leases, ecological health of wetlands and riparian areas, and condition of developed recreational sites to be effectively tracked.

5. APPENDICES

- A. Land Management Plan Land Use Standards
- B. Forage Utilization Monitoring Information
- C. Compliance Monitoring Form
- D. Performance Tracking Form
- E. Reference Photograph Guidance

APPENDIX A: LAND MANAGEMENT PLAN LAND USE STANDARDS

Table 1.1. Specific Land Use Standards for Lands in the PROJECT OPERATIONS Land Management Classification.

Issue	Land Use Standards
Public Access	<ul style="list-style-type: none"> • Public access is prohibited by way of security fencing and/or signage. These areas will be managed in a manner that is consistent with the public health and safety, and Project security needs (Public Safety Plan). • No overnight camping is permitted on PacifiCorp land. • Motorized vehicles are permitted only on existing roads. Project personnel may occasionally need to access off-road areas to conduct O&M activities (e.g., hydro operations, reclamation measures, weed control, seeding, monitoring, etc.). • PacifiCorp will coordinate with local law enforcement agencies on trespass enforcement.
Vegetation Management	<ul style="list-style-type: none"> • “Clearance” zones will be maintained around all electrical generation equipment (transformers, switchyards, powerhouse, etc.) • Noxious weeds will be controlled annually. Pesticide application will conform to Federal and state regulations and product labels. PacifiCorp will protect against surface or groundwater contamination.
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> • Retention of riparian and wetland habitat is encouraged but not required due to need for maintaining safe Project operations. • Vegetation along river shorelines will be retained in a natural state to the extent possible.
Agricultural Uses	<ul style="list-style-type: none"> • Regular agricultural use is not permitted. Fencing will be maintained to exclude livestock if an agricultural lease is located adjacent to Project facilities. • In some cases, PacifiCorp may allow short-term controlled livestock grazing within selected areas to achieve desired vegetation conditions.

Table 1.2. Specific Land Use Standards for Lands in the DEVELOPED RECREATION LAND Management Classification.

Issue	Land Use Standards
Public Access	<ul style="list-style-type: none"> • Developed Recreation areas are open to public access. Use of established structures (picnic tables, boat ramps, campfire rings, etc.) will be encouraged. • Signage will be used to prohibit campfires, vegetation removal, and site hardening beyond the boundaries of the recreation site. Managed trails are allowed to extend beyond the recreation site. • Motorized vehicle use is restricted to established roads. • PacifiCorp will coordinate with local law enforcement agencies on visitor management and enforcement issues at developed recreation sites.
Vegetation Management	<ul style="list-style-type: none"> • Vegetation within the sites will be maintained for aesthetics and public safety, including hazard tree removal. • In areas where active public recreation does not occur, native vegetation will be retained to the extent possible. • Noxious weeds will be controlled annually. PacifiCorp will protect against surface and groundwater contamination. • Developed recreation sites and the adjacent lands will be monitored annually for environmental damage (e.g. erosion, vegetation removal, etc.). • Significantly damaged sites will be restored via stabilization and/or revegetation using approved native or non-invasive non-native plant species.
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> • Retention of riparian and wetland habitat is encouraged but is not required. Vegetation along river shorelines will be maintained to the extent possible. • Recreation structures that are too close to the shoreline will be relocated to other locations within the site if possible.
Agricultural Uses	<ul style="list-style-type: none"> • Agricultural use is not permitted. • Fencing will be maintained to exclude livestock if an agricultural lease is adjacent to Developed Recreation land management classification.

Table 1.3. Specific Land Use Standards for Lands in the CONSERVATION Land Management Classification.

Issue	Land Use Standards
Public Access	<ul style="list-style-type: none"> • Motorized vehicle use is prohibited off existing roads. • Dispersed camping is prohibited. Any newly discovered campsites will be removed and appropriate measures taken to correct damage and prevent future use. • Pedestrian and equestrian trails are allowed and may be hardened if needed. • In areas where a Conservation land management classification occurs adjacent to developed or dispersed recreation areas, signage will be installed at the boundary prohibiting fire rings, vegetation removal, and site hardening within the Conservation land management classification.
Vegetation Management	<ul style="list-style-type: none"> • Vegetation management will be limited to restoration of damaged sites. • Restoration projects will utilize approved native or non-invasive non-native plant species. • Mechanical, biological, and appropriate chemical methods will be emphasized for control of noxious weeds to minimize impacts to water quality. • Roads within or immediately adjacent to Conservation land management classifications will be maintained in a manner that is consistent with maintaining wetland and riparian vegetation.
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> • Springs and wetlands within the Conservation land management classifications that are currently used for agricultural purposes (through diversions and ditches) will continue to be utilized for irrigation, but will be managed to maintain or improve water quality. • PacifiCorp will monitor wetlands and riparian areas within Conservation land management classifications at least once every 5 years to determine if additional protection measures or vegetation management actions are necessary.
Agricultural Uses	<ul style="list-style-type: none"> • Grazing and farming are generally not permitted in Conservation land management classifications. The only exception is that controlled, short-term grazing may be considered as a management tool to achieve desired vegetation conditions. Grazing would only occur in Conservation land management classification within the FERC Project boundary after consultation with the ECC. Such grazing would adhere to standardized criteria (Natural Resources Conservation Service [NRCS] and other accepted sources) and monitoring. • Fencing will be maintained to exclude livestock where necessary. • Watering access points along the river may only be installed if off-river water sources (using existing irrigation diversions) cannot be used in adjacent lease areas.

Table 1.3. (cont'd) Specific Land Use Standards for Lands in the CONSERVATION Land Management Classification.

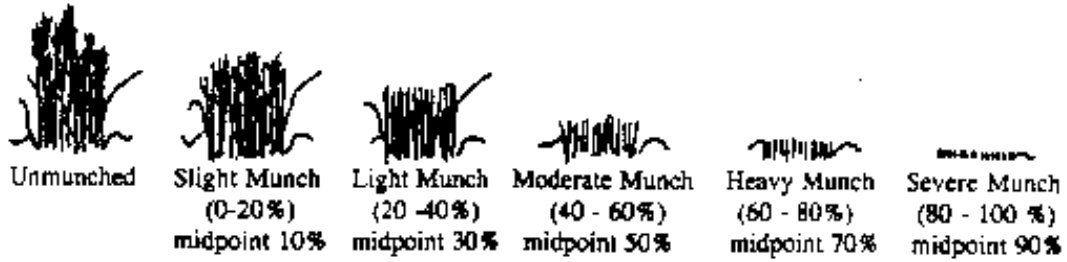
Issue	Land Use Standards
Agricultural Uses (cont'd)	<ul style="list-style-type: none"> • Existing agricultural irrigation systems that emanate within or cross Conservation land management classifications can continue to function under existing water rights. Diversion of water will only be conducted during the growing season. Future easement requests will require Best Management Practices (BMPs) by irrigation system owners. • PacifiCorp will explore options for terminating water diversions that are no longer necessary for agricultural purposes. If terminated, water will be returned to the Bear River via natural drainageways (restored if necessary).

Table 1.4. Specific Land Use Standards for Lands in the POTENTIAL AGRICULTURAL LEASE AREAS Land Management Classification.

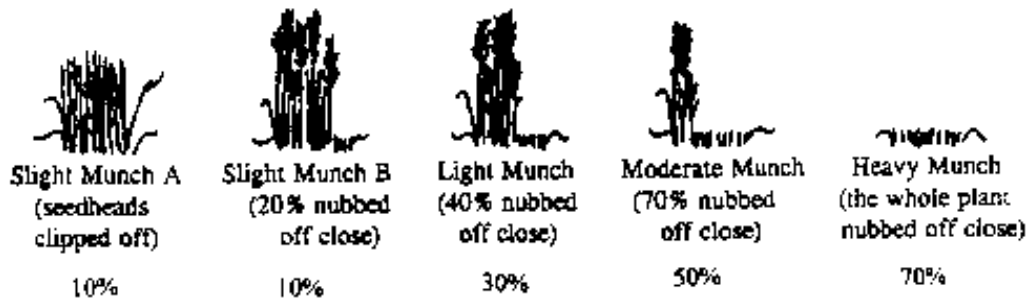
Issue	Land Use Standards
Public Access	<ul style="list-style-type: none"> • Motorized vehicle use is restricted to designated roads except as permitted for lessee-operated farm implements used to conduct agricultural activities. • Dispersed camping is prohibited. Non-motorized recreation use, such as hunting, hiking, fishing, etc., is permitted. • Improvements that enhance dispersed recreation use (other than camping), such as foot trails, signs, trash receptacles, portable toilets, and gravel parking areas, are permitted to minimize environmental damage. • PacifiCorp will periodically update methods used to manage public access if monitoring indicates ongoing impacts.
Vegetation Management	<ul style="list-style-type: none"> • Noxious weeds will be controlled annually. • Vegetation management will be limited to restoration of damaged sites. • Restoration projects will utilize native plant species, where possible or practical.
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> • Ditches within agricultural lease areas that are currently used for agricultural purposes will continue to be utilized for irrigation, but will be managed to maintain good water quality and to reduce impacts to nearby wetlands. • PacifiCorp will monitor wetland and riparian areas within agricultural lease areas to determine if additional protection measures or vegetation management actions are necessary.
Agricultural Uses	<ul style="list-style-type: none"> • Grazing and farming leases will utilize updated lease conditions that specify the maintenance of fencing, noxious weed control, protection of adjacent conservation buffers, and adherence to all environmental regulations. • Appropriate stocking rates will be determined for each agricultural lease area and will dictate appropriate animal-units (AU) to meet forage-animal balance and work toward “Desired Future Conditions.” • Subleasing of leased land will not be permitted. • Off-river watering sources will be maintained within the lease area, where possible, utilizing water from existing diversion, ditches, and pipes. A minimum of 12 gallons per day per head is required (Idaho Department of Water Resources [IDWR] Water Law Handbook).

APPENDIX B: FORAGE UTILIZATION MONITORING INFORMATION

Guide for “even” utilization:



Guide for “uneven” utilization:



Figures taken from McKinney, 1997, Rangelands, 19:4-7.

Forage Utilization Monitoring - Baseline Data

Inspection Date: June 1, 2006

Sant Parcel

East Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Quackgrass	16" (not in seed)		The site also included sedge, cheat grass, sagebrush, juniper, phlox, Great Basin wildrye, white top, limited foxtail barley, and some thistle. Cattle (14 head) were turned into the pasture on 5/31/06. The site is quite dry due to lack of spring moisture. Some of the thistle have been sprayed. Signs of rodents throughout the pasture. Water is flowing across the northern edge of the pasture and is being used for livestock watering.
Kentucky bluegrass	12"		
Intermediate wheatgrass	14" (not in seed)		
Western wheatgrass	12"		

West Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Quackgrass	9"		The site also included crested wheatgrass, sedge, cheatgrass, sagebrush, juniper, whitetop, and Russian olive. Signs of rodents throughout the pasture. The lower west side was undergrazed last season due to abundant vegetative dry matter. Water flowing from north to south through the center of the pasture. Pasture not grazed yet.
Kentucky bluegrass	5"		
Western wheatgrass	10"		
Intermediate wheatgrass	12"		

Penstock Parcel

Penstock Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Quackgrass	12"		The site also included western wheatgrass, sedge, crested wheatgrass, tall wheatgrass, sagebrush, juniper, Russian olive, service berry, cattails, whitetop, Canada thistle, and cocklebur. Signs of rodents throughout pasture. Upper water source surfaces in the rocks and is unaffected by livestock. Lower water source from spring box not protected from livestock. Little damage to spring box noted. Pasture not grazed yet.
Intermediate wheatgrass	12"		
Kentucky bluegrass	14"		

Dugway Parcel

Dugway Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Quackgrass	16"		The site also included tall wheatgrass, sedge, and Great Basin wildrye. The site has been grazed with utilization ranging from 45% on the north end to 60% on the south end. The permittee is scheduled to irrigate by sprinkler in the next few weeks. Water source for livestock is provided by a small channel on the south end. Due to the new fence, limited damage has occurred to the riparian.
Intermediate wheatgrass	12"		
Kentucky bluegrass	14"		

Cove Plant Parcel

North Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Kentucky bluegrass	6"		The site also included Great Basin wildrye, sedge, cheatgrass, and sagebrush. The site has been grazed to 60% due to trespass grazing and to the lack of a western fence. The permittee can not access the site due to the spillway.
Western wheatgrass	7"		

Corral Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Quackgrass	14"		The site also included Great Basin wildrye, sedge, cheatgrass, and sagebrush. The pasture was grazed first this season by 6 yearling calves. The lower areas in the pasture are being irrigated by sprinkler.
Kentucky bluegrass	10"		

Cove Penstock Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Kentucky bluegrass	10"		The site also included Great Basin wildrye, sedge, cheatgrass, and sagebrush. Six yearling calves were put in the pasture on 5/31/06. The pasture is the fourth to be grazed this season by 6 yearling calves. The lower areas in the pasture are being irrigated by sprinkler.
Orchardgrass	20"		

Housing Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Kentucky bluegrass	4" by home site; 12" elsewhere.		The site also included Canada thistle, dandelion, and cheatgrass. The pasture was grazed third this season by 6 yearling calves. The utilization of the pasture averaged 55%. The pasture is being irrigated by sprinklers,

Meadow Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Kentucky bluegrass	8"		The site also included orchardgrass, sedge, and Canada thistle. The sedge portion of the pasture receives minimal grazing due to the poor quality of the forage. Much of the sedge portion was burned early this spring by the neighbor to the south.
Quackgrass	14"		

Bench Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):
Kentucky bluegrass	12"		The site also included Great Basin wildrye, cheatgrass, sedge, and sagebrush. The pasture was grazed second this season by 6 yearling calves.
Quackgrass	16"		

Annual Pasture Monitoring Forms

Inspection Date:

Sant Parcel

East Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

West Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Penstock Parcel

Penstock Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Dugway Parcel

Dugway Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Cove Plant Parcel

North Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Corral Pasture

Corral Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Cove Penstock Pasture

Cove Penstock Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Housing Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Meadow Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

Bench Pasture			
Forage Species	Average Ungrazed Height	Average Utilization & Use Classification (ref. Table 2 in J. Mosely paper)	Notes (other species present and other important factors):

APPENDIX C: COMPLIANCE MONITORING FORM

Sant Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> • Fence the parking area's east side and install a cattle gate or guard. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> • Sign the Black Canyon Take-out and the parking area with: (1) a recreational rules sign; (2) a "Part 8" sign; (3) a "Benefits of Hydro Power" sign; (4) a "Stop" sign; (5) a "No Fires" sign; (6) a "Speed Limit 10 mph" sign; and, a "Pack It In, Pack It Out" sign according to the RTSP, Appendix C. 	Spring 2006	YES / NO	
		Monthly Inspections	YES / NO	
	<ul style="list-style-type: none"> • Maintain the parking area and maintain the roadway according to RTSP standards, p. 29. 	Ongoing	YES / NO	
	<ul style="list-style-type: none"> • Ensure portable toilet is placed next to "Handicapped Parking" sign. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> • Maintain the portable toilet. 	Biweekly	YES / NO	
	<ul style="list-style-type: none"> • Remove debris and litter from the parking area and the gravel boat take-out area. 	Weekly	YES / NO	

	<ul style="list-style-type: none"> Destroy existing fire rings near the Black Canyon parking area and the boat take-out; rehabilitate these areas. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Maintain boat take-out area at Black Canyon recreation site (RTSP, p. 29). 	Ongoing	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Complete the property boundary delineation on the east and south ends. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition for all boundaries. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Submit summary report of implementation of RTSP and the FERC Form 80. 	Summer 2011	YES / NO	
6-year Intervals		YES / NO		
Vegetation Management	<ul style="list-style-type: none"> Revise the weed control contract to include backpack spraying and other appropriate techniques on areas away from roads and operating facilities. (Note: this action would affect all planning area parcels.). 	Spring 2006/Revise as needed	YES / NO	
	<ul style="list-style-type: none"> Annual or biannual backpack spraying throughout the parcel only after other mechanical or biological 	Spring 2006	YES / NO	

	control options have been evaluated.	Biannual Rx/Monitoring	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Fence the riparian system, extending the west parking area boundary along the river (Figure 2.). 	Spring 2006	YES / NO	
		Annual Inspection	YES / NO	
Agricultural Uses	<ul style="list-style-type: none"> Update the grazing lease agreement. 	Fall 2006	YES / NO	
		Update as needed	YES / NO	
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Spring 2006	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Train lessees on forage utilization monitoring. 	Fall 2006	YES / NO	
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Fall 2006	YES / NO	
		Monthly	YES / NO	
	<ul style="list-style-type: none"> Reconstruct north/south interior fence to allow a two-pasture grazing system within the parcel. 	Fall 2005	YES / NO	

	<ul style="list-style-type: none"> • Ensure interior fence and fence post condition. 	Annual Inspection	YES / NO	
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Mansfield Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> • Post the west boundary with property delineation markers. 	Summer 2005	YES / NO	
	<ul style="list-style-type: none"> • Determine whether north and south boundary fences are complete and accurately placed, and address any discrepancies noted. • Ensure fence and fence post condition on all boundaries. • Maintain existing pedestrian bridge. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> • Secure the southern access gate to prohibit future vehicle travel without PacifiCorp approval. If maintenance is required on the conveyance pipe, written notice will be required of the owners describing the type of work prior to access being permitted. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
Vegetation Management	<ul style="list-style-type: none"> • Rehabilitate the water conveyance line by completing the following measures: 	Fall 2005/Spring 2006	YES / NO	

	<p>1. Remove discarded, steel pipeline segments and other debris from the parcel.</p> <p>2. Repair the side cuts and drainage pathways along the 12-inch pipeline corridor. Feather or taper the edges and cover with available topsoil. During the repair process, place topsoil on the surface to enhance revegetation efforts.</p> <p>3. Revegetate the entire area with native vegetation (weed free, native seed mixture) to reduce the visual impact of a linear feature.</p>	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Spot treat weed species along the pipeline corridor with herbicide to control weeds. Care should be taken to avoid spraying new broadleaf or shrubby vegetation intended for the corridor. 	Spring 2005	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
	<ul style="list-style-type: none"> Biannual backpack herbicide applications will be necessary to control weeds throughout the parcel and to encourage complete site recovery. 	Spring 2006	YES/NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
	<ul style="list-style-type: none"> Intensive backpack spraying weed control along 0.3 stretch of river integrated with mechanical and biological control measures. 	Spring 2006	YES/NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Investigate piped diversion to determine if spring flow could be returned to Bear River. 	Spring 2005	YES / NO	Note: Determined to be infeasible to return flow to river.

Agricultural Uses	Not Applicable.			
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Penstock Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> Confirm boundary alignment and post the west boundary with ownership signs. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries 	Annual Inspection	YES / NO	
Vegetation Management	<ul style="list-style-type: none"> Spray herbicides along the penstock access roads to manage weeds. 	Spring 2005	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
	<ul style="list-style-type: none"> Construct water bars every 200 feet on the access 	Fall 2005	YES / NO	

	roads made from soil with a 2 to 8 degree outslope to divert water flow.	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Utilize short duration (10 days) grazing as an additional control for weedy annual grasses. 	Ongoing	YES / NO	
		Biannual or Annual Rx/Monitoring	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Ensure spring boxes and the downstream wetlands are protected. 	Fall 2006	YES / NO	
		Annual Inspection	YES / NO	
Agricultural Uses	<ul style="list-style-type: none"> Include the parcel in the grazing lease agreement for the Sant and Dugway parcels. 	Spring 2006	YES / NO	
		Update as needed	YES / NO	
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Spring 2006	YES / NO	
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Spring 2006	YES / NO	
		Monthly	YES / NO	

Cove Forebay West Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> Complete the property delineation and boundary fence and post indicating ownership. 	Summer 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries. 	Annual Inspection	YES / NO	
Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures along the riparian area and in localized, internal areas. 	Spring 2006	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
	<ul style="list-style-type: none"> Revise the monitoring plan for weeds and revegetation efforts following Cove decommissioning activities. 	Fall 2006	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Revise the monitoring plan for wetland and riparian areas following Cove decommissioning activities. 	Fall 2006	YES / NO	
Agricultural Uses	Not Applicable.			

Dugway Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> Fence pasture throughout. 	Spring 2006	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition. 	Annual inspection.	YES / NO	
Vegetation Management	<ul style="list-style-type: none"> Control localized weed infestations with herbicide applications and other appropriate techniques. 	Spring 2006	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Fence the channel currently used as the cattle water source and develop a water trough in the northeast corner of the parcel. 	Fall 2006	YES / NO	
		Annual inspection.	YES / NO	
Agricultural Uses	<ul style="list-style-type: none"> Include the parcel in the grazing lease agreement that includes the Sant and Penstock parcels. 	Fall 2006	YES / NO	
		Update as needed	YES / NO	

	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Annual inspection.	YES / NO	
	<ul style="list-style-type: none"> Train lessee on forage utilization monitoring. 	Fall 2006	YES / NO	
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Fall 2006	YES / NO	
		Monthly	YES / NO	

Kackley Springs Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> Confirm that the boundary delineation and fencing are complete and accurate. 	Fall 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition on all boundaries. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Maintain the existing road. 	Ongoing	YES / NO	
		Annual Inspection	YES / NO	

Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures throughout the parcel 	Ongoing	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
Wetland and Riparian Habitat Management	<ul style="list-style-type: none"> Develop and implement a plan to either re-divert Kackley Springs flows or otherwise maintain them in a configuration favorable to aquatic resources. 	2009	YES / NO	
Agricultural Uses	Not Applicable.			

Cove Plant Parcel Compliance Monitoring				
Date:		Technician:		
Issue	Corrective Action	Timeframe	Completed?	Comments
Public Access	<ul style="list-style-type: none"> Complete the property delineation. 	Summer 2005	YES / NO	
		Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Ensure fence and fence post condition. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Maintain the existing road. 	Ongoing	YES / NO	
		Annual Inspection	YES / NO	
Vegetation Management	<ul style="list-style-type: none"> Undertake appropriate weed control measures throughout the parcel, including specifically the rock spoil piles on river bank. 	Ongoing	YES / NO	
		Semiannual or Annual Rx/Monitoring	YES / NO	
	<ul style="list-style-type: none"> Complete Cove bypass fence project. 	Fall 2006	YES / NO	
	<ul style="list-style-type: none"> Ensure Cove bypass fence condition. 	Annual Inspection	YES / NO	
Wetland and	<ul style="list-style-type: none"> Implement Cove bypass fencing to protect riparian 	Fall 2005	YES / NO	

Riparian Habitat Management	area from grazing impacts.	Annual Inspection	YES / NO	
Agricultural Uses	<ul style="list-style-type: none"> Update the parcel's grazing lease agreement. 	Fall 2006	YES / NO	
		Update as needed	YES / NO	
	<ul style="list-style-type: none"> Conduct annual pre-grazing forage height assessment. 	Annual Inspection	YES / NO	
	<ul style="list-style-type: none"> Train lessees on forage utilization monitoring. 	Fall 2006	YES / NO	
	<ul style="list-style-type: none"> The lessee must submit forage utilization monitoring reports as required by the lease agreement. 	Fall 2006	YES / NO	
		Monthly	YES / NO	

Wildlife Observations

Date:

Technician:

Observation and location:

APPENDIX D: PERFORMANCE TRACKING FORM

Sant Parcel Performance Tracking Date: _____ Technician: _____ Initial Performance Tracking: 05/29/2006 <input type="checkbox"/> Check if DFCs have been reviewed.					
Issue	Desired Future Condition	Performance Tracking	GPS/ Photo Pt.	YES/NO	Comments
Public Access	PA1 - Viable recreational uses are maintained and/or improved. (also PA2, PA5, PA6, PA7, VM1, WR1, WR2, and AU3.)	Are desired recreation activities occurring without discernable adverse environmental impacts? <ul style="list-style-type: none"> • <i>Are recreation opportunities, rules, and boating and fishing access at the Black Canyon take-out evident?</i> • <i>Is litter/debris at the Black Canyon take-out evident?</i> • <i>Is the portable toilet at the parking area properly located and maintained?</i> 	SP1	YES NO	
	PA2 - Disturbed lands are improved to restore healthy vegetated communities. (also VM1, WR1, and WR3.)	Is there noticeable improvement in riparian habitat since fire ring rehabilitation and sign placement? <ul style="list-style-type: none"> • <i>Have firerings been removed and rehabilitated?</i> • <i>Is trampled vegetation in the area recovering?</i> • <i>Is there any new fire activity in the vicinity of Black Canyon take-out?</i> 	SP2	YES NO	
Wetland and Riparian Habitat Management	WR2 - Riparian zones, wetlands and aquatic resources are healthy and are properly functioning. (also PA2, PA7, VM1, VM2, WR1, AU3, and AU4.)	Since implementation of the Site Plan, is the wet meadow habitat stable or increasing? <ul style="list-style-type: none"> • <i>Is there evidence of livestock use (e.g. manure, trampling, or trails)?</i> 	SP3	YES NO	
			SP4	YES NO	

Mansfield Parcel Performance Tracking					
Date:		Technician:		Initial Performance Tracking: 05/29/2006	
<input type="checkbox"/> Check if DFCs have been reviewed.					
Issue	Desired Future Condition	Performance Tracking	GPS/ Photo Pt.	YES/NO	Comments
Vegetation Management	VM2 - The extent of undesirable or weedy vegetation is reduced and treatments are scheduled as necessary. (also PA2, PA7, VM2, VM3, and WR2.)	Are weeds and other undesirable species decreasing?	MP1	YES NO	
Wetland and Riparian Habitat Management	WR2 - Riparian zones, wetlands, and aquatic resources are healthy and are properly functioning. (also PA2 and VM1.)	Are riparian species, especially shrub and woody species, increasing around the footbridge?	MP2	YES NO	

Penstock Parcel Performance Tracking					
Date:		Technician:		Initial Performance Tracking: 05/29/2006	
<input type="checkbox"/> Check if DFCs have been reviewed.					
Issue	Desired Future Condition	Performance Tracking	GPS/ Photo Pt.	YES/NO	Comments
Wetland and Riparian Habitat Management	WR1 - Wetland and riparian resources, spring complexes and the river shoreline are buffered and protected. (also PA2, PA7, VM1, VM2, WR2, WR3, AU3, and AU4.)	Are the wetland/spring box areas healthy and properly functioning? • <i>Is there evidence of livestock use (e.g. manure, trampling, or trails)?</i>	No PP	YES NO	

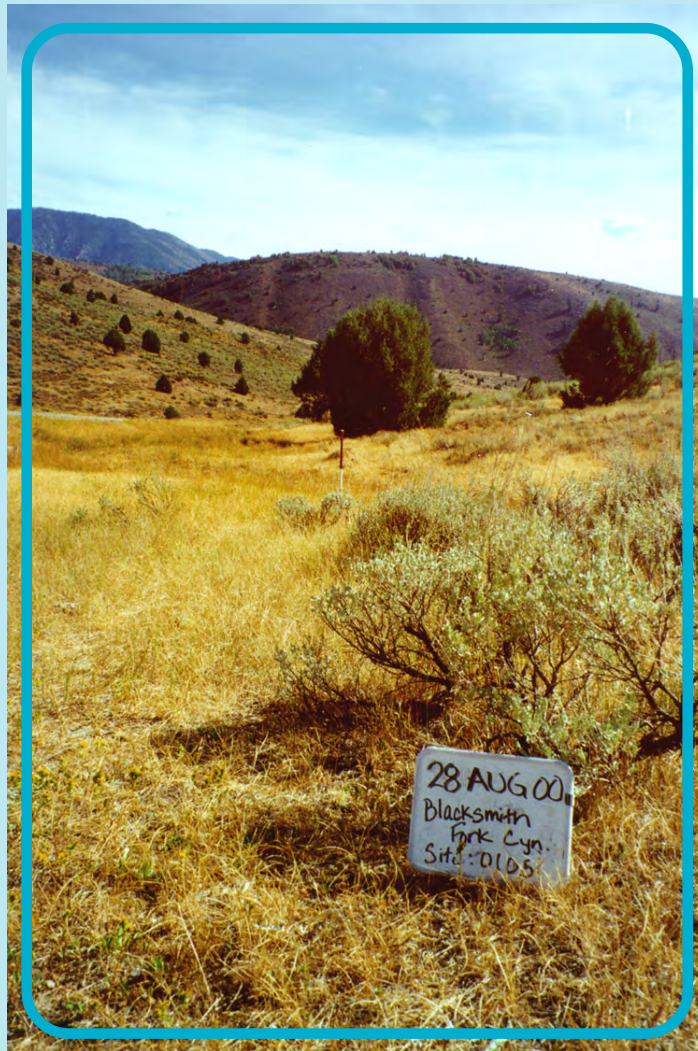
Kackley Springs Parcel Performance Tracking					
Date:		Technician:		Initial Performance Tracking: 05/29/2006 <input type="checkbox"/>	
Check if DFCs have been reviewed.					
Issue	Desired Future Condition	Performance Tracking	GPS/ Photo Pt.	YES/NO	Comments
Wetland and Riparian Habitat Management	VM2 - The extent of undesirable or weedy vegetation is reduced and treatments are scheduled as necessary. (also PA2, PA7, VM2, VM3, and WR2.)	Are weeds and other undesirable species decreasing?	KSP1	YES NO	

Cove Plant Parcel Performance Tracking					
Date:		Technician:		Initial Performance Tracking: 05/29/2006 <input type="checkbox"/>	
Check if DFCs have been reviewed.					
Issue	Desired Future Condition	Performance Tracking	GPS/ Photo Pt.	YES/NO	Comments
Wetland and Riparian Habitat Management	WR1 - Wetland and riparian resources, spring complexes and the river shoreline are buffered and protected. (also PA7, VM1, AU3, and AU4.)	Since implementation of the Site Plan, are shrub/woody species increasing?	CPP1	YES NO	
			CPP2	YES NO	

APPENDIX E: REFERENCE PHOTOGRAPH GUIDANCE

(See Appen_E.pdf attachment.)

Repeat Photography Monitoring Made Easy



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UtahState
UNIVERSITY
EXTENSION

March 2001



NR504

Photo Monitoring Made Easy

How often have you said or heard, "This area looks so much better than it was back...." The problem occurs when other people are not sure they can believe what they hear. They may still see problems and wonder to themselves how truly interested managers are in solving them. In addition, for those who have not been around to see improvements, the slow rate at which nature changes can make it seem that managers are doing nothing.

So what can you do? You've heard it for years - MONITOR! Rather than making your life more difficult, good monitoring can actually simplify it. Since most of us remember only the very best and very worst, our memories often fail us when it comes to gradual changes over longer periods of time. With the data collected and stored, you no longer have to rely on your memory. Your data are also more useful than your memory in describing what you saw, and is more readily accessible to interested public or managers who may follow you. Your data can provide you with concrete proof of successes and help you identify management strategies that did or did not work. Aldo Leopold once said "If you learn to read the land, I have no fear what you will do to the land." Your monitoring data can demonstrate how you read the land, reducing others' fear of what you might do.

Professional land managers have used monitoring as the basis for making decisions as varied as livestock movement to wildlife harvest rates and for determinations of water quality and ecosystem health. The Society for Range Management has defined monitoring as the orderly collection, analysis and interpretation of data to evaluate progress toward stated goals (1989). The amount of time and expertise this implies scares many people away. However, it is really not that complicated. At the most basic level monitoring is defined as "to watch, observe or check on for a specific purpose" (Webster 1983). All you are required to do is to look, to pay attention to what is happening and to record your observations in some way.

There are many monitoring techniques. Here we will discuss one of the simplest, cheapest and quickest methods -- Repeat Photography. By following the easy steps outlined here, you will collect data and record your interpretations over time to provide proof of change and management efforts. We will cover how to correctly take a photo, how to file it to ensure you can find it and know what it means, and how to record observations and interpretations of the monitoring site.

Step 1: Get the Equipment

Your equipment must include:

- 1) Camera
- 2) Film
- 3) Photo Board
- 4) Reference pole
- 5) Evaluation forms
- 6) Notebook

Camera: There are numerous cameras on the market and any will work. The instamatic cameras are easy to use and very cheap in the short run. If you use a more advanced 35-mm camera, most now have an option to put the date right on the picture. The same is true for the newer digital cameras. If you have a computer system, digital photos may prove to be the least expensive over time.

Film: Use color print film. Typically 100 or 200 speed film works best in outdoor, sunny settings.

Photo Board: Placing as much information in the picture as possible eases record keeping in the future. Your photo board will appear in every picture you take so that you can be sure the photo includes the date and location of the monitoring site. Your photo board can be an inexpensive white board, or a clipboard with a plastic sheet, or even just a sheet of blank paper. All will allow you to write the appropriate information, take the picture and then move on to the next site.

Reference Pole: Your reference pole gives a sense of scale in your photograph. It allows you and others to see changes in the vegetation height and structure over time. Your reference pole should be 1 meter long. A piece of PVC pipe works well. Paint the bottom half red. Duct tape wrapped in the middle makes a good dividing line. The two colors are an important part of making it easy to estimate vegetation height. Some people also attach a stake to the bottom of the pole so it is easier to stick into the ground.

Evaluation Forms: This form is the place you will put your printed photo and your evaluations of the site from your visit. A form with printed questions or observation requests can jog your memory to ensure you collect the same information every time.

Notebook: With one place to store your photos and your evaluation sheets, you'll have quicker access to your information in the future. Using a notebook also makes it easier to carry photos from the past year into the field with you so you can be sure you're repeating photos at the same locations every time. A three ring binder works well. We suggest attaching your photos to your evaluation sheets (see the last page for an example).



Equipment Needed.

Step 2: Choose a Location

Your photo monitoring will be most useful if you select “Key Areas” to monitor. A key area is representative of the area you are managing and acts as an indicator of changes that may be taking place. The greater the variety in your terrain, the larger the number of key areas you will need to properly represent the area being monitored. Keep these guidelines in mind when selecting your photo monitoring location:

1. Choose a spot you will have time to visit and monitor.

Pick areas that are high priority for your operation and add others over time.

2. Be sure that the area is representative of a larger area.

Choosing areas where livestock congregate (watering points or fence lines) or where livestock never graze will give you important comparisons. However, these areas may not adequately represent the larger area and how your management affects it over time.

3. Select enough key areas to adequately represent the area you manage.

An advantage of having more than one key area is that it ensures small local events, such as fires or floods, do not misrepresent conditions in the larger area.

4. Comparison photo stations in grazed and ungrazed areas can help you evaluate the effects of grazing.

Be sure that the sites are similar in soils, topography and precipitation.

If you would like more information on how to pick key areas, see Bureau of Land Management, 1996, Sampling Vegetation Attributes, Interagency Technical Reference BLM/RS/ST-96/002.

Step 3: Take the Picture

The type of camera, film and lens are not as important as how you take the picture. Every picture you take should include the following, in order of importance:

- 1) Landmark
- 2) Photo Board
- 3) Reference Pole

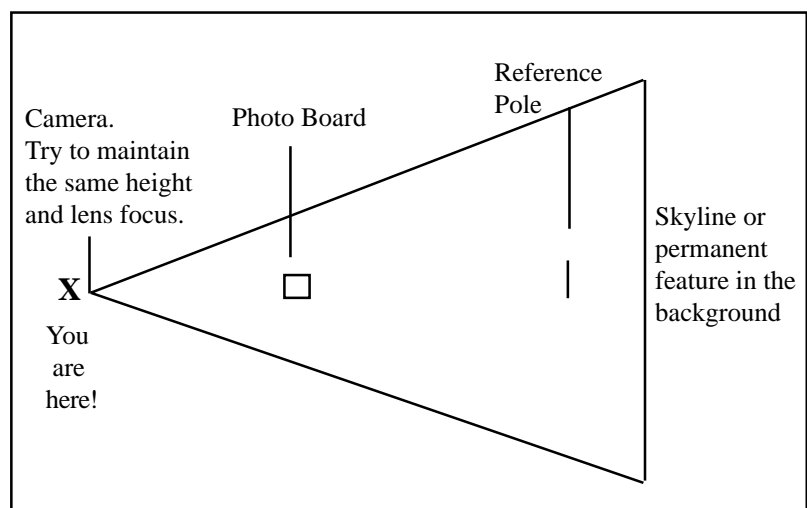
Figures 1 - 3 show examples of monitoring photographs that range from useful to not useful.

Landmark: A distinctive, permanent landmark is critical if you or others after you are going to

find the photo point in the future. Repeating your photo at the same site on an ongoing basis allows you to use the photo to analyze and demonstrate what your management has done. By going to the same point every year, you also cannot be accused of simply picking points to your advantage.

As you look through your camera's viewfinder check to be sure the frame includes a skyline. It can be particularly difficult to include a skyline when you are photographing a riparian area. Are there rock outcrops, mountain slopes, or other geologic features that will remain the same over long periods of time? Adjust your site until you are sure that your photo will include a landmark that you can find again and again. This will also help others to know they are looking at the same site.

Photo Board: After writing the date and the location of the monitoring site on your photo board, place it in the foreground of your picture. Check through your viewfinder again. Is the board legible? Be sure the sun's glare will not prevent you from reading the information on the board once the photo has been printed. With the photo board visible, check to see that your landmarks are also still in the frame.

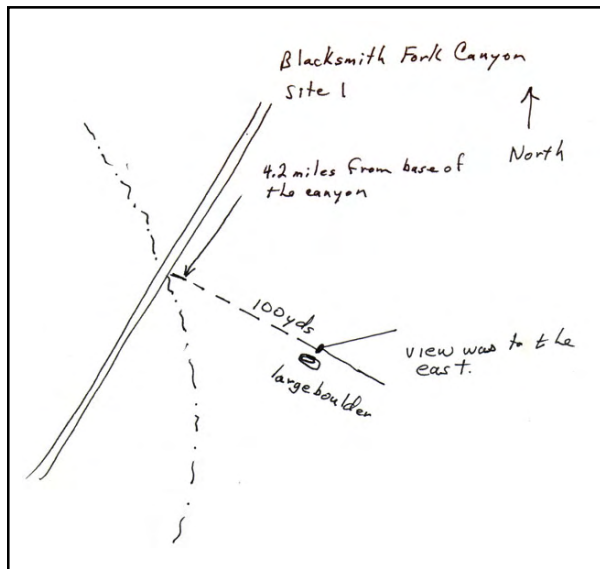


Setting up the Picture

Reference Pole: To make it easier to interpret the picture in the future, the reference pole should be placed the same distance from the point of origin every time. Because your photo board is in the photo's foreground, it can easily be used as the point of origin. Fifty feet from the point of origin is most commonly used to locate the reference pole. In many areas, such as a riparian area, willows can fill in over time making the pole difficult to see, so it might have to be moved forward over time. If the pole is moved, be sure to note this as part of your site observations.

With the reference pole in place, look through your viewfinder one more time. If you can see your landmark, the words on your photo board and the reference pole you're ready to shoot.

Step 4: Record Your Site Evaluation



Site Map Example

Take out your evaluation forms and write down your interpretation. It does not need to be a long academic write up; just a few words about what you see happening.

For example:

"Sagebrush seedlings are starting to show. I should start thinking about reburning this area in the next 5 years or so!"

"Grasses are becoming more dominant. I will try to adjust season of use to an early part of year to get the sedges back."

"Sagebrush has increased and grass cover is declining. I am seeing lots of bare ground and worry about future erosion."

In some cases you might want to install a post or pin at the site to help you be sure you take the photo from the same point each time.

To help you remember each location, include a map to the site on your first evaluation form. See the last page for an example of an evaluation form you

Step 5: Store the Picture and Data

The finishing steps include getting your photos developed and placing them in your notebook along with the evaluation sheets. This is the simplest method, though some people actually use computer systems to store data and photos. Please don't use the storage method used by most folks in a hurry, the standard "it's in the cab of my truck somewhere" filing system shown here.



Typical filing system used by many managers

Step 6: Repeat the Process

Once you've set up your key areas and have taken your first photos and recorded your observations and evaluations, don't stop. Do this every year. Take photos at about the same time of year. After all, what can you really tell about a site if one photo was taken in the spring and the next year's was taken in the fall? Try to use the same camera lens, film type and shutter speed each time.

General Recommendations

To make the most of your repeat photography monitoring, be sure it includes the following:

1. A good photo with:
 - Skyline or permanent features for easy relocation
 - Reference pole placed the same distance from the origin point
 - Photo board with date and location written on it
2. Written notes concerning the use and events on the site.
3. Your interpretation of the management effects on the site.
4. A storage system for your photos and notes.
5. Repetition of the process over time.



Dry Valley 1940, Bureau of Land Management photo



1998, Earl Hindley photo

Use of Historic Photos

Old family albums, historic records at the courthouse, and even the library are additional sources for photos you can use to tell a story about your the management of your area. Look for old photos that have some identifiable feature, maybe from a family picnic, or a round-up. By finding that location today, and putting yourself in the same location as the original photographer, you can take a picture that will show conditions today. The examples shown here are from "A Photographic History of Vegetation and stream Channel Changes in San Juan County, Utah" by Hindley, Bowns et al.

Figure 1. Four examples of photographs that have everything needed for monitoring changes. They each have the date, location, a reference pole, and some type of permanent feature that can be recognized. Note how the background skyline makes it easier to find these sites in the future.



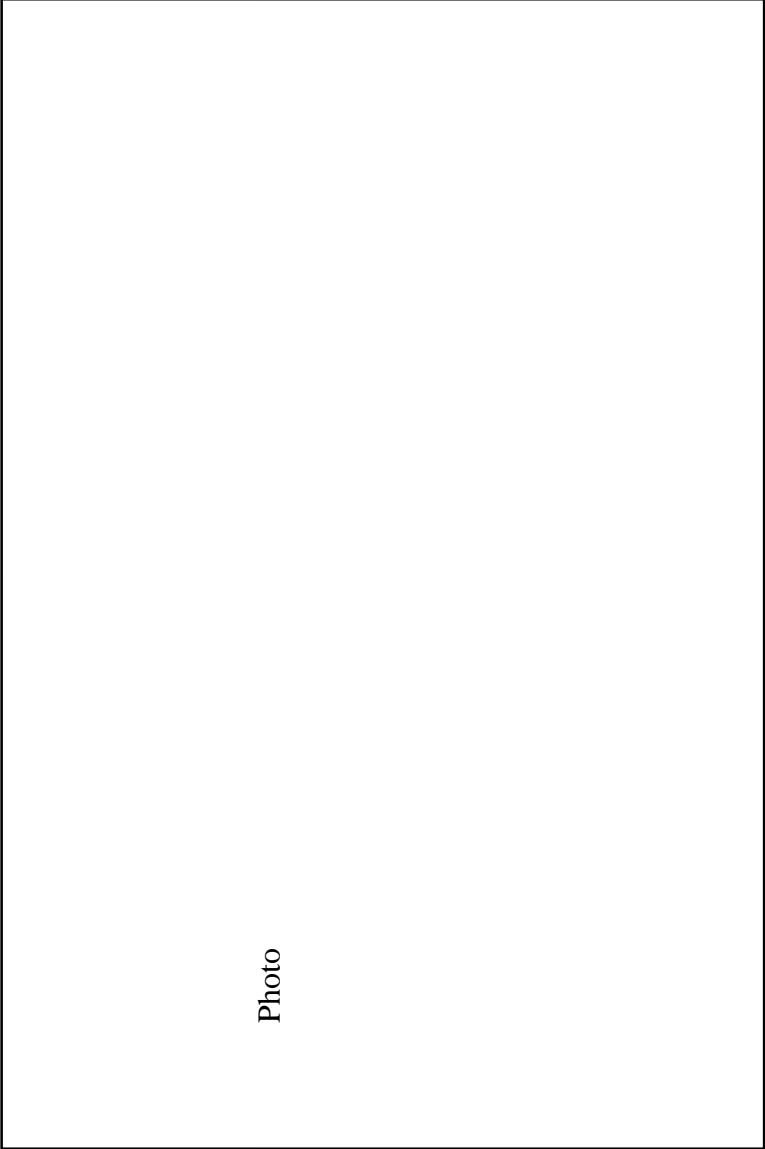


Figure 2. These photographs are less useful. All have the date, location and reference pole which make them very useful for monitoring. However, because there is no permanent feature or a distinguishable skyline, it will be difficult, or impossible to relocate them.



Figure 3. These photographs are the least useful for monitoring. They are nice landscape pictures but do not contain the date, location or a reference pole. These are very difficult to use for monitoring, and then only by the person who took the original photo. To make them more usable, they should be attached to a sheet with the date and location. A map of how to find the site would be valuable as well.

Evaluation Sheet



Photo

Date:

Location:

Map to the site —

What happened in last year? (grazing, type of animal, wildlife, burn, management action etc.)

What are management impacts since the previous photo?

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