

**DRAFT WILDLIFE DISTURBANCE AVOIDANCE PLAN
ARTICLE 416**

BLUE LAKE PROJECT (FERC No. 2230) EXPANSION

Prepared by:

City and Borough of Sitka Electric Department

July, 2012

1.0 INTRODUCTION AND BACKGROUND

The City and Borough of Sitka, Alaska ("City") owns and operates the Blue Lake Hydroelectric Project (FERC No. 2230) near Sitka. Due to unforeseen electrical load growth in the City, the City and Borough of Sitka Electric Department has proposed to raise the dam and construct other project features which will increase annual energy output at the Project. Actions to accomplish this new construction are called the Blue Lake Project Expansion ("Expansion").

The new Project license was issued by the Federal Energy Regulatory Commission (FERC) in 2007 and will require amendment in order for the proposed construction and operation to take place. As part of the amendment process it is expected that both FERC and reviewing state and federal resource agencies will include environmental and other conditions which the City must meet.

1.1 Need for This Plan

This Draft Wildlife Disturbance Avoidance Plan (Plan) has been developed in response to Article 416 of the Order Issuing Amendment for the Expansion (FERC 2012). Article 416 specifies that:

Within 90 days of the issuance of this order, the licensee shall file with the Commission, for approval, a Wildlife Disturbance Avoidance Plan. This Plan shall describe measures taken to minimize wildlife disturbance, primarily through accommodations in seasonal and daily work scheduling.

The licensee shall prepare the plan after consultation with the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the Alaska Department of Fish and Game.

The licensee shall allow a minimum of 30 days for the agencies to comment and make recommendations to the plan. The licensee shall include with the plan documentation of agency consultation, copies of agency comments and recommendations on the plan, and specific descriptions of how the agencies' comments are accommodated by the licensee's plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the proposed plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

1.2 Plan Goals

This Plan was prepared by the City for the following goals:

- to identify potential areas and activities which might disturb wildlife during both project construction and long-term operation; and
- identify species of concern and establish necessary measures to protect these species from disturbance.

Also included in this plan are inspections to be performed during construction operations to evaluate plan effectiveness. This Plan covers all Project lands and facilities within the Project boundary, except the Sitka transmission line that is not involved with construction activities.

1.3 Consultation

The City will distribute this draft plan for review by a group of Stakeholders thought most likely to have an interest in its conditions. The City will address all review comments in the final plan. Changes to this plan may also need to be made as contractors and their proposed activities and timing schedules are finalized.

2.0 POTENTIAL DISTURBANCE AREAS AND ACTIVITIES

In this plan we evaluate potential wildlife disturbances in five separate areas (Figures 1 and 4):

- 1) Blue Lake burn area;
- 2) Dam and intake area;
- 3) Blue Lake road;
- 4) Fish Valve Unit area
- 5) Surge Chamber; and
- 6) Powerhouse area.

Note that, after identification of the noise or activity disturbance radius of the various wildlife species, the areas of potential wildlife disturbance may not be within the Project Boundary. This is because a primary cause of disturbance could be noise and visual effects which are audible and visible for various distances from the source of the disturbance.

2.1 Blue Lake Burn Area

Although timber will be left standing in most of the Blue Lake Creek Valley, up to 18 acres of timber will be cut to clear a burn area for timber debris (Figure 1) (City 2012). Disturbance in this area would be from logging, heavy equipment, and burning of timber and debris. There will be 2 floating booms with hanging screens to contain debris in this area (Figure 3). These activities are planned for April and May of 2014-2016 (Figure 2). It is expected that debris management to a smaller degree will be required in the reservoir for 5-10 years after the reservoir is filled.

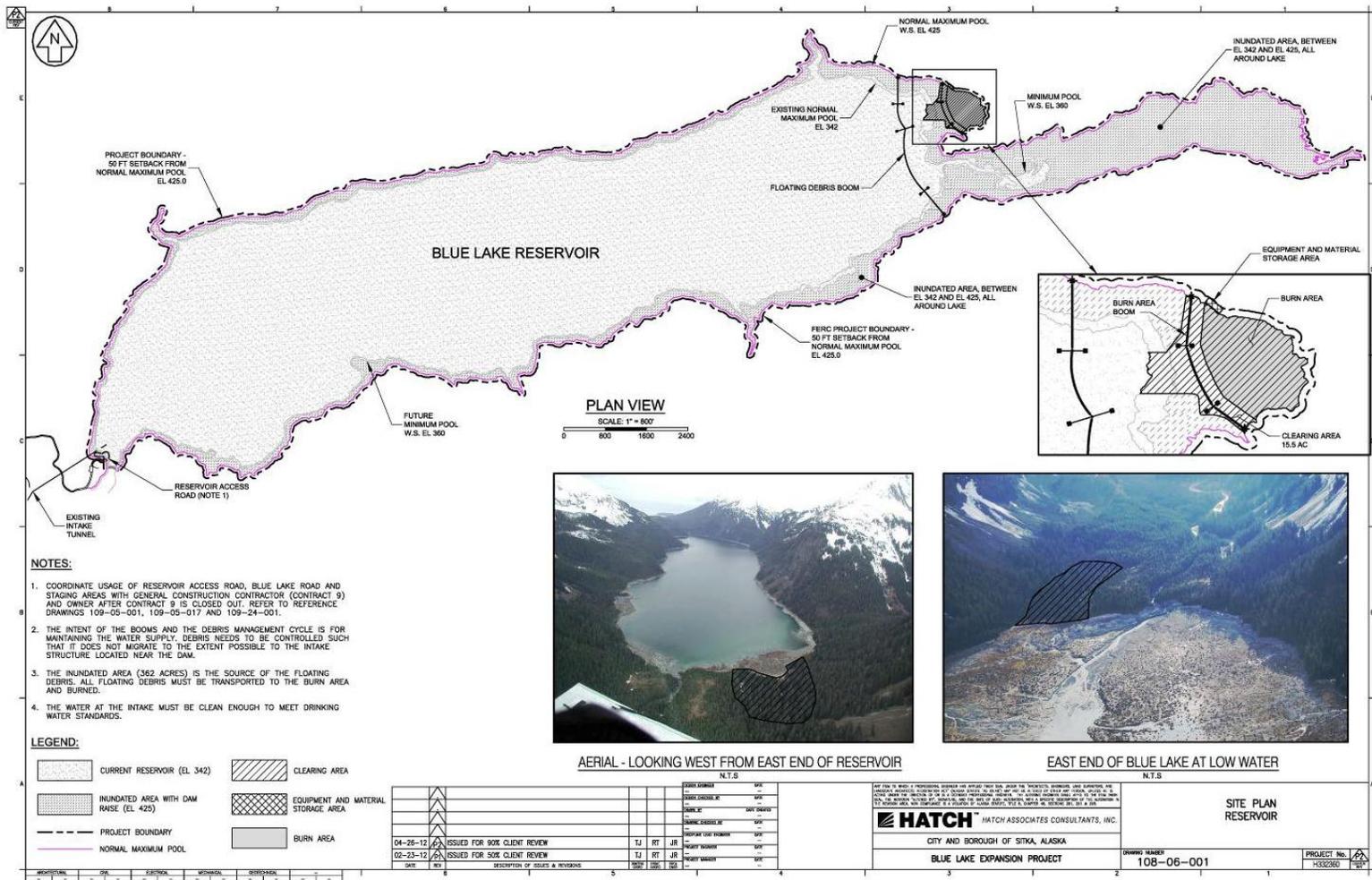


Figure 1. Blue Lake Creek Burn Area (City 2012).

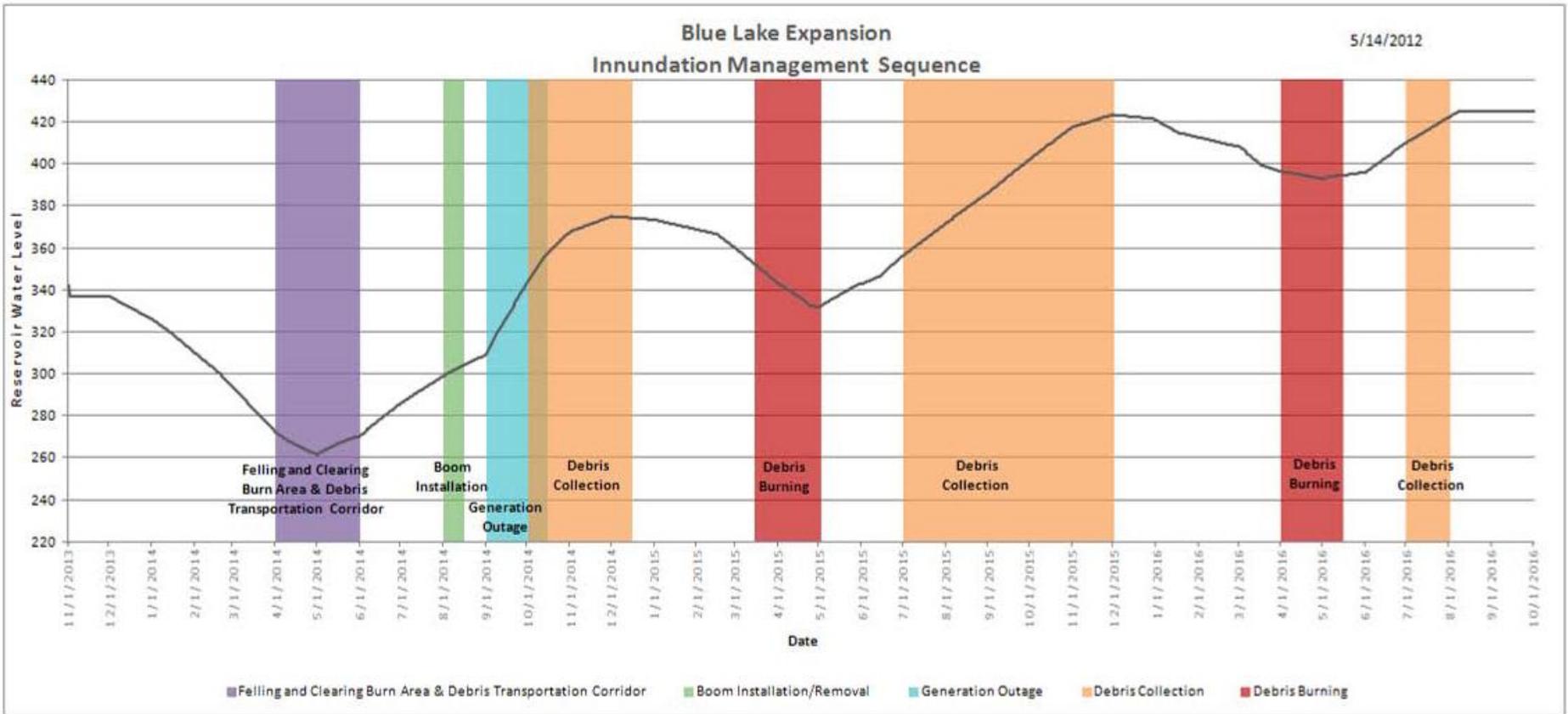


Figure 2. Inundation and Debris Management Schedule (City 2012).

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Figure 3. Debris Screen

2.2 Dam and Intake Area

The areas of the dam and intake area will involve blasting, heavy equipment operation and significant human activity for this project (Figure 4). Specific activities include excavation of an intake portal and intake tunnel, excavation on the left and right dam abutments. Construction of the dam extension, left abutment thrust block and cut off wall, plunge pool scour wall, drainage tunnel, and intake structure. A helicopter may be utilized for access to the dam site on a very limited basis. The helicopter access path does not cross the recorded goat location areas. Activities will be conducted all year round during 2013 and 2014 .

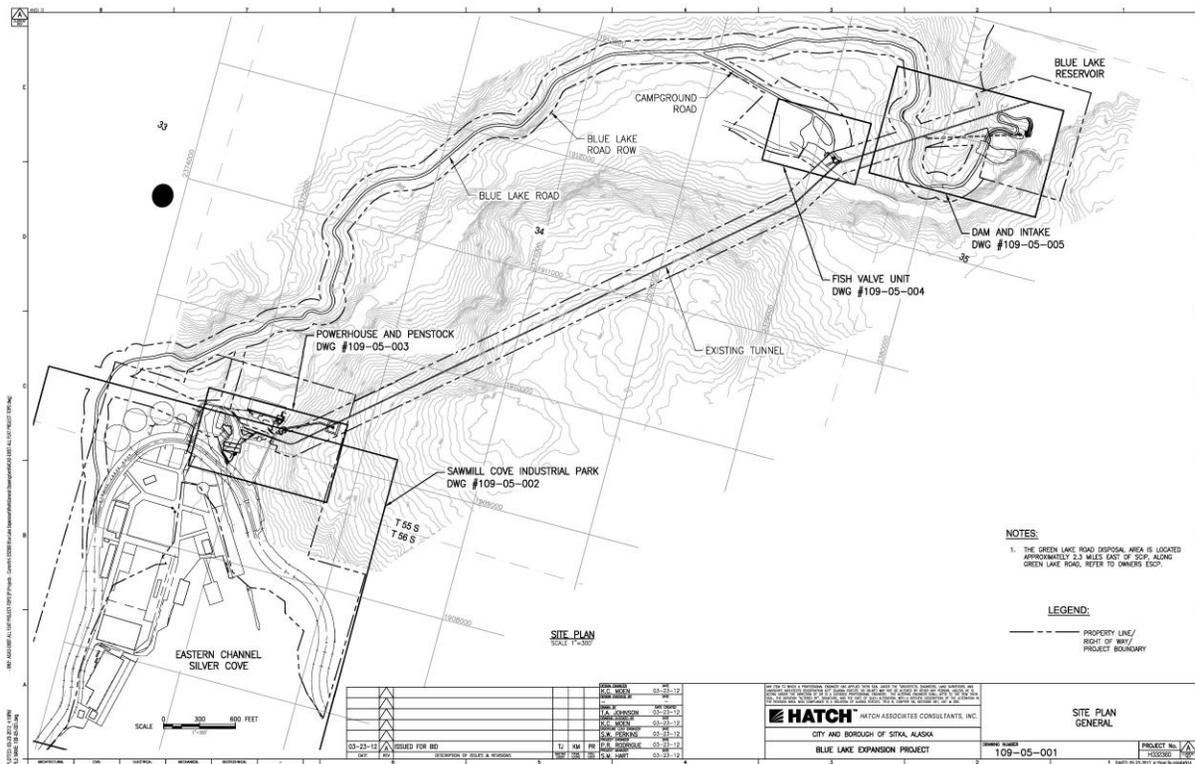


Figure 4. Map Showing Locations for Powerhouse, Road, FVU, and Dam/Intake (City 2012).

2.3 Blue Lake Road

Construction activities along the Blue Lake road include increasing the grade of the road near the dam site, The work will involve heavy equipment operation and daily worker traffic to and from the dam and intake area and fish valve unit.

2.4 Fish Valve Unit (FVU)

Lower levels of activity will occur in the area of the FVU including movement of construction equipment including rock processing equipments. Disturbances would likely include heavy equipment operations and human activity.

2.5 Powerhouse and Surge Chamber Areas

There will be significant activity in the powerhouse area to install new utility pipelines, penstock, surge chamber adit, powerhouse access road and powerhouse. The work will include blasting, excavation and construction. A helicopter will be utilized for access to the surge chamber on a limited basis. This work will be conducted all year around during 2013 and 2014.

3.0 POTENTIALLY-DISTURBED WILDLIFE RESOURCES

Baseline information about temporal and spatial use by wildlife species in the project area has been gathered (Bovee 2006, 2010) and a Draft Wildlife Monitoring Plan was developed (City 2011b). Species of concern include:

- Raptors
- Mountain goat
- Brown bear
- Waterfowl and Shorebirds

Appendix 1 is an overview of the species of concern with corresponding potential disturbance areas, key concerns, time periods, and protection measures.

3.1 Raptors

Raptor species that may be present in the project area include (* indicates known occurrence):

- northern goshawk,
- bald eagle*,
- red-tailed hawk*,
- western screech owl*,
- northern saw-whet owl*, and
- northern pygmy owl*.

Surveys will continue for these species as outlined in the Wildlife Monitoring Plan (City 2011b) and maps showing survey locations and any nest locations will be updated and be made available to the contractor and agencies. The only active raptor nest found to date was in 2011, which was a red-tailed hawk nest located in the cliff area adjacent to the north falls.

3.2 Mountain Goat

Potential disturbance of mountain goats by project activities are limited to 2 disturbance areas (dam and intake area and Blue Lake burn area) during winter and spring. During the summer and fall months, goats move to alpine areas and should not be affected by construction activities.

The main concern of disturbance for goats is when they are within 1.6 km (1 mile) from blasting and other associated noise in the dam and intake area during the winter and spring (December 1 through May 1). Radio telemetry data show goats just outside this distance during this time period (Figure 5).

Field observations and radio telemetry will be used to monitor goats, especially during these time periods, to ensure there are no adverse impacts. These observations can be compared to construction related noises to better understand any effects to goats.

Activities in the Blue Lake burn area, such as logging, heavy machinery, and fires, may disturb late wintering goats and spring kidding, which may occur within the suggested 1.6 km (1 mile) buffer distance (Figure 5). Finally, one major factor affecting goat distribution is snow depth (i.e. deeper snow will cause them to use lower elevations later into the spring). This will influence the timing and location of potential disturbances to goats and may influence construction scheduling.

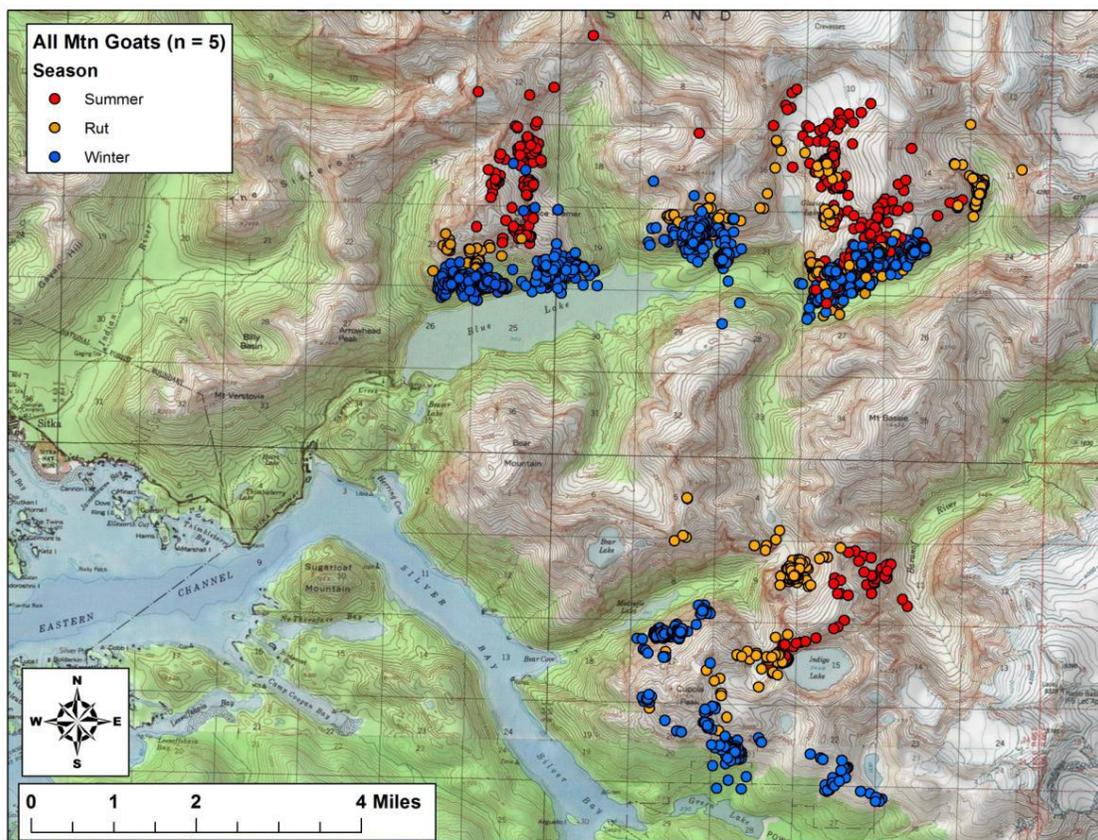


Figure 5. GPS locations of 5 mountain goats , September 7, 2010 - April 26, 2011, color coded by season, in central Baranof Island (ADFG unpublished data).

3.3 Brown Bear

Brown bears have been observed in all of the potential disturbance areas, with the greatest concentration being along the lower reaches of Sawmill Creek during the late summer and fall salmon spawning, including the area of the powerhouse construction. One of the main concerns for brown bears is the possible increase in bear/human interactions. In response to this concern, a Bear Safety Plan was developed (City 2011a). In addition, the City and ADF&G will work cooperatively to collar and monitor 2 bears in the project area, which will assist in monitoring this concern.

There will likely be disturbance to bears feeding along the lower reaches of Sawmill Creek from construction work in the powerhouse area. Field observations and radio telemetry data will help monitor this situation, however, some bears will inevitably change their feeding behavior (i.e. feed more at night or during breaks in construction) or move to other areas.

3.4 Waterfowl and Shorebirds

The disturbance area that may affect waterfowl and shorebirds is the Blue Lake burn area. Mallards, spotted sandpipers, and mew gulls have been observed there during inventory and monitoring studies (Bovee 2006, 2010). It is likely that the early season start of activities (Figure 2) will deter birds from nesting in this area.

Appendix 1. Species of Concern by Potential Disturbance Area, including Key Concerns, Time Period and Protection Measures.

Species of Concern	Potential Disturbance Area					Key Concerns	Time Period	Protection Measures
	BLB A	Dam	Road	FVU	PH			
Raptors	x	x	x	x	x	Nesting birds	Spring, summer	Survey and monitor areas for nesting activity; Consult agencies for mitigation steps if nest is present within 0.8 km (0.5 mi) of project activity.
Mountain Goat	x	x				Wintering animals, kidding, avalanche triggering	Winter, spring	Field observations and radio telemetry used to monitor goat responses to potential disturbances
Brown Bear	x	x	x	x	x	Bear/human interactions; disturbance during salmon spawning feeding	Summer, fall	Bear safety plan; field observations and radio telemetry used to minimize disturbances
Waterfowl and Shorebirds	x					Nesting birds	Spring	Survey and monitor areas for nesting activity.

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