

## 17. THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONSERVATION CONCERN

### 17.1 Introduction

A review of existing information was conducted to determine whether any threatened or endangered bird and mammal species occur in Pebble Project study areas in the Bristol Bay drainages (Figure 1-4 in Chapter 1), to derive a list of the vertebrate species of conservation concern that have been found in the region, and to summarize what is currently known about the conservation status of those species. This work focused on bird and mammal species of conservation concern and did not address other high-profile wildlife species (e.g., caribou, bears, moose) that are of concern for subsistence, sport hunting, or ecological reasons, but are not of conservation concern in this part of Alaska. Similarly, another high-profile and federally protected species (Bald Eagle) was not addressed because in Alaska Bald Eagles are abundant and are not considered of conservation concern. In addition to the work on vertebrate species, an analysis of the potential for a set of rare vascular plant species to occur in the Bristol Bay drainages was conducted.

Researchers conducted two activities: a review of data from field surveys and a literature review. Field survey data from 2004 through 2008 (the surveys are summarized in Chapter 16) were reviewed for species-occurrence information. The literature review was used to assess which species are currently listed as threatened or endangered or of conservation concern and to summarize information on why each of those species is of concern.

To determine which rare vascular plant taxa could potentially occur in the Bristol Bay drainages, researchers requested information from the Alaska Natural Heritage Program on those species that have state rankings that indicate rarity (S1, S2, S1S2, or S2S3) and that have been collected in the region. The potential for these species to actually occur in the region was assessed by evaluating the known ranges of the plants, their habitat associations, and the habitats available in the Pebble Project study areas in the Bristol Bay drainages.

### 17.2 Results and Discussion

No threatened or endangered species listed under the Endangered Species Act or any candidate or proposed species for the Endangered Species Act, is known to occur in the Bristol Bay drainages study areas. Similarly, no species listed as endangered by the State of Alaska is known to occur in the study areas.

Twenty-two bird species that were recorded in one or both of the Bristol Bay drainages study areas are considered of conservation concern for Alaska. These species were listed as being of concern by at least two of 10 statewide or national-level management agencies or nongovernmental organizations that address bird conservation issues in the state. These species are Trumpeter Swan, Surf Scoter, Black Scoter, Long-tailed Duck, Red-throated Loon,

Golden Eagle, Gyrfalcon, Peregrine Falcon, American Golden-Plover, Lesser Yellowlegs, Whimbrel, Hudsonian Godwit, Solitary Sandpiper, Surfbird, Short-billed Dowitcher, Arctic Tern, Black-backed Woodpecker, Olive-sided Flycatcher, Gray-cheeked Thrush, Varied Thrush, Blackpoll Warbler, and Rusty Blackbird. Of these 22 species, 21 are of concern primarily because population declines have been documented or are strongly suspected, either in Alaska or in breeding or wintering areas outside the state. These species also are of concern for a variety of additional reasons, which, depending on the species, can include the following issues:

- Sensitivity to disturbance and contaminants.
- Vulnerability to habitat loss and alteration during the breeding, migration, and wintering periods, but especially during migration and on the wintering grounds, which are often outside Alaska.
- Susceptibility to hunting pressure, fisheries bycatch, or heavy natural mortality during migration.
- Naturally small population sizes.
- Restricted breeding and/or wintering ranges.

Two mammals species recorded or expected to occur in the Bristol Bay drainages study areas are of conservation concern for Alaska. One of these, a marine mammal species—the harbor seal, is resident year-round in Iliamna Lake. Harbor seals typically are found in marine waters, but they have also been known to enter freshwater rivers and lakes occasionally (Chapter 16, Section 16.8). The presence of the species in freshwater in Iliamna Lake has been known since the late 19th century (Nelson and True, 1887). Harbor seals are not listed by the National Marine Fisheries Service under the Endangered Species Act and populations in Alaska are not considered to be depleted (NMFS, 2010), but like all marine mammals, they are protected under the Marine Mammal Protection Act. Suspected declines in the Bering Sea population of harbor seals (Angliss and Outlaw, 2007) presumably influenced the decisions of two management agencies to designate the harbor seal as a species of conservation concern (ADF&G, 1998; BLM, 2005).

The other mammal species of conservation concern is a terrestrial small mammal, the Alaska tiny shrew, which may occur in the Bristol Bay drainages study areas. The occurrence of this recently described species in the study areas has not been confirmed. The tiny shrew is listed as of conservation concern by the Alaska Natural Heritage Program (AKNHP, 2008). The Alaska Natural Heritage Program classified this shrew as vulnerable in the state (ranking S3), presumably because of its apparent rarity and uncertain conservation status. This ranking warrants further scrutiny, however, as more information becomes available, especially in view of the species' cryptic nature, the possibility of misidentification, the difficulty of capture, and the shrew's widespread distribution, as documented by inventory work in various parts of the state in the decade since the species was described.

The wood frog, which has been recorded in the mine study area (Chapter 16, Section 16.12) and may occur in the transportation-corridor study area as well, is considered of conservation concern in Alaska (ADF&G, 2006). The wood frog is the only species of amphibian that occurs in Alaska north of the southeastern panhandle of the state (Hodge, 1976). In

developed areas in eastern Cook Inlet, the species was found to be abundant and widespread (Gotthardt, 2004). Nevertheless, the species is considered of conservation concern in Alaska, as are amphibians worldwide, because of widespread population declines in all groups of amphibians (McCallum, 2007).

Based on data compiled through 2006 (AKNHP, 2006), 16 rare vascular plant taxa with state rankings that indicate rarity (S1, S2, S1S2, or S2S3) were determined to have some potential to occur in the Bristol Bay drainages study areas. These species are: *Arabis lemmonii*, *Botrychium alaskense*, *Botrychium multifidum*, *Botrychium virginianum*, *Carex heleonastes*, *Catabrosa aquatica*, *Ceratophyllum demersum*, *Draba lonchocarpa* var. *vestita*, *Eleocharis quinqueflora*, *Eriophorum viridicarinatum*, *Geum aleppicum* var. *strictum*, *Myriophyllum farwellii*, *Potentilla drummondii*, *Primula tschuktschorum*, *Saxifraga adscendens* ssp. *oregonensis*, and *Smelowskia pyriformis*. The conclusion that these species could potentially occur in the Bristol Bay drainages region is based on the existence of known collections of these taxa within a broad region surrounding and including the Pebble Project study areas and the availability of suitable habitats in those study areas. Of these 16 rare taxa, six are listed as critically imperiled in Alaska (S1 or S1S2 ranks). These six taxa, however, are ranked as secure globally; they are considered S1 or S1S2 primarily because there are few collection records and/or small populations of these species in Alaska. The remaining 10 taxa are listed as imperiled in Alaska (S2 or S2S3 ranks). Among these 10 taxa, three species (*Botrychium alaskense*, *Primula tschuktschorum*, and *Smelowskia pyriformis*) also are listed as globally imperiled (G2 or G2G3 ranks), primarily because there are few collection records and/or small populations of these species worldwide. All three of these species are endemic to Alaska.

### 17.3 References

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