135°0'0"W 134°0'0"W 133°0'0"W 132°0'0"W 131°0'0"W

60°0'0"N 59°0'0"N 58°0'0"N

Yukon Territory
British Columbia

Area of missing data

Area of missing data

Area of missing data

Area of missing data

Atlin Park

Overview of the Taku River Tlingit Habitat Suitability Models

The Taku River Tlingit First Nation (TRTFN) have developed habitat suitability models for important wildlife species, to provide strategic level information about where important habitats are distributed across their Territory, and inform management and planning efforts. For the planning work being undertaken through the Framework Agreement, the TRTFN and BC will utilize habitat suitability models being jointly developed, which will incorporate the foundational work of the habitat modeling efforts undertaken by the TRTFN.

As all modeling efforts, the TRTFN's ability to model the seasonal habitat of focal species habitat is limited by knowledge of seasonal habitat use patterns, the likely variability in those patterns across the Territory and between years, and the availability of applicable environmental data for the region. The traditional and indigenous ecological knowledge (TIEK) of the Taku River Tlingit, as well as local ecological knowledge, provided key information on the distribution, ecology, and habitat use patterns of each species. The TIEK information was corroborated and supplemented using other existing information on each species, including research and other modeling efforts in similar regions. By combining TIEK and local knowledge with scientific research information, the TRTFN habitat models represent a powerful combination of these two forms of ecological knowledge. In addition, the TRTFN obtained a limited set of radio-telemetry locations spanning between five and nine months, collected by the BC government in a three-plus year radio-telemetry project, and was used to provide some model validation.

The habitat models uses standardized spatial data that are available through the BC government, including the BC Forest Cover data and Biogeoclimatic Ecosystem Classification for vegetation information; BC Terrain Resource Information Mapping database (TRIM, 1:20,000) for roads and topography, the BC Watershed Atlas (1:50,000) was the source for data related to rivers and streams, and the Fisheries Information Summary System (FISS) was used to complement TIEK in determining salmonid species distributions and spawning areas.

Thinhorn Sheep in the Taku River Tlingit Territory

The TRTFN Territory supports both subspecies of thinhorn sheep: Stone's sheep (*Ovis dalli stonei*) and Dall sheep (*Ovis dalli dalli*), as well as Fannin sheep, a type of Stone's sheep showing a wide diversity of color variations. Fannin sheep are found only in this region of BC and extending north into the Yukon Territory. TRTFN and local community members have expressed concern about sheep populations in region, due to population declines over the last few decades. Stone sheep are patchily distributed in suitable habitats from the southeastern portion of the Territory, and to the north. Dall's sheep (blue-listed) are found in the northwestern portion of the Territory, representing the southwestern extent of Dall's sheep distribution, which is primarily within the Yukon and Alaska.

Traditional and indigenous ecological knowledge, as well as local knowledge document that thinhorn sheep are patchily distributed in the Territory. The conditions that limit the suitability of habitat for sheep include factors that cannot currently be captured in the habitat model (e.g., snow depth), and so we limited the model to regions known to historically or presently support thinhorn sheep populations, based on information obtained in TIEK and local ecological knowledge interviews.

Winter and Spring Sheep Habitat

The TRTFN TIEK describes sheep as found in steep, rocky and rugged mountainous areas with adjacent open, rolling hillsides. The TIEK describe sheep security habitat as including steep, rocky slopes. We adopted slope definitions used in other sheep modeling efforts to define these habitat characteristics in the habitat model. Sheep primarily eat grasses, with some use of shrubby plants. While foraging, sheep remain close to cliffs and rocks for security, and move into these habitats if alarmed. A diversity of habitats within proximity of suitable security habitat may be utilized for forage, including open brush, grassland and other unforested habitats, which we developed model queries to capture.

During winter and spring, sheep select habitats with low snow, while requiring the close proximity of steep, rocky areas for security. Winter and spring habitats include high elevation, wind-blown areas; south-facing or warm aspect, steep areas or lower elevation areas below snow or at tree-line. Lambing habitats are limited to those steeper slopes that provide security. Several interviewees spoke of the importance of mineral licks to sheep.

Atlin-Taku Planning Area: Thinhorn Sheep Winter Habitat Suitability Model

Jointly Developed by TRTFN and the Province of British Columbia

Map Key

Habitat suitability
- Low
- Moderate
- High

- Taku River Tlingit territory
- Atlin-Taku planning area
- Taku River drainage divide
- Protected areas

Roads
- Paved or main roads
- Gravel or secondary roads
- Unimproved roads
- Rivers
- Lakes

0 2.5 5 10 Kms

Projection: BC Albers equal area conic
Datum: North American Datum of 1983
Data sources: TRTFN, BC WLAP, GeoGratis

TAKU RIVER TLINGIT FIRST NATION