

## **EXECUTIVE SUMMARY**

The Dehcho and Tlicho First Nations, the federal and territorial governments and non-governmental organizations are partners in the Edézhíe candidate protected area initiative through the NWT Protected Areas Strategy (PAS). The Canadian Wildlife Service (CWS), working in cooperation with the Edézhíe Working Group, is overseeing the ecological assessment of the Edézhíe candidate protected area as described in Step 5 of the PAS. This ecological assessment requires a detailed inventory of key ecological components of the Edézhíe candidate protected area. This information is required to determine species diversity and distribution to ensure that the candidate area captures the full range of successional stages, wildlife habitat, self-sustaining land and water systems, and sensitive/rare species. In this way, the candidate area's contribution to the conservation of these components and processes at a regional scale can be assessed. Such an understanding would also form a cornerstone of future management planning for the area.

The Edézhíe candidate protected area is dominated by the Horn Plateau, which rises to 850 metres (m) above sea level, and 450 m above the surrounding plain. The plateau consists of a flat morainal plain, with sporadic areas of hummocky, ridged or rolling moraine and organic deposits (Aylsworth *et al.* 2002). Below the surficial material, is a cap of uneroded Cretaceous sandstone and shale, approximately 450 m thick, lying on Devonian shale which forms much of the near-surface bedrock across the study area. North of the plateau, is a relatively flat, low lying morainal plain consisting of till, non-sorted silt, sand and clay extensively covered by organic deposits of peat and muck. South of the plateau, the land is gently sloping southward to the Mackenzie River. The major surficial material consists of glaciolacustrine and lacustrine deposits composed of silt, sand and clay, in many places overlain by discontinuous veneer of organic deposits locally overlain by sand. Sediments have been laid down in glacial lakes, which temporarily occupied the Mackenzie Valley at the end of the ice age (Aylsworth *et al.* 2002).

The Horn Plateau is a mosaic of mature spruce forest and a number of burns which have occurred over the last 35 years. The lowlands surrounding the Horn Plateau are covered by a mosaic of conifer dominated forest of varying age, old burns, and wetlands. The study area includes almost the entire Horn Plateau ecoregion within the Taiga Plains ecozone, but also includes a small portion of the Hay River Lowlands and the Great Slave Lake Plain ecoregion and is drained by four watersheds, the Willowlake, the Horn, and Rabbitskin Rivers, and a small part of the Martin/Trail river system.

This ecological assessment was conducted during 11-21 June 2002, 5-18 June 2003 and 27-30 June 2003. Plant community descriptions were based on Landsat TM imagery obtained from the Government of the Northwest Territories, Department of Environment and Natural Resources (ENR) (formerly Department of Resources Wildlife and Economic Development (RWED)). Initial planning and survey design was based on their classification of the image. However, once in the field some accuracy problems became apparent and the classification was modified by sub-dividing some classes and adding some new classes for a total of 20 plant communities. Over 1,800 plant observations were documented during the 2002 and 2003 field studies, representing 192 species and 45 families of vascular plants. Six plant families accounted for over 50% of the species total (Families Cyperaceae, Salicaceae, Ericaceae, Rosaceae, Betulaceae and Gramineae).

A survey of the literature indicated that there are 2 species of amphibian, 24 species of fish, 197 species of bird, and 36 species of mammal occurring within the Edézhíé candidate protected area. In this study, one species of amphibian and likely a second (northern leopard frog), 126 species of bird and 15 species of mammal were recorded. For birds, a wide range of waterfowl, waterbirds and raptors (including two 'species at risk') were observed as well as forest birds (primarily songbirds). Quantitative survey data enabled a characterization of the forest bird community on a habitat basis. Eighty-one (81) bird species were recorded during an ornithological reconnaissance at Mills Lake, an important wetland in Edézhíé. This information augments a separate CWS report on the importance of Mills Lake as a staging wetland for a range of migratory waterfowl, which is included in this report (Appendix H). For mammals, three 'species at risk' were observed: boreal woodland caribou, wood bison, and wolverine. Numerous sightings were made of the first two species and calving was documented for boreal

woodland caribou. In addition, late winter distribution of woodland caribou, wood bison and moose in 2002 and 2003 was documented through aerial surveys conducted by the Department of Environment and Natural Resources.

The ecological significance of the Edézhíe candidate protected area includes a number of factors:

1. It supports several ‘species at risk’, as listed by the Committee on the Status of Endangered Wildlife in Canada. These species are both resident in the area on a year round basis or occur there as migrants. Boreal woodland caribou and wood bison (COSEWIC listed ‘threatened’) occur in Edézhíe at all time of the year and evidence of calving in the area was observed for both species. Wolverine are also year round residents (COSEWIC listed ‘special concern’). The Peregrine Falcon ‘(threatened’) and the Short-eared Owl (‘special concern’) occur in Edézhíe as migrants, and the latter species may breed there.
2. The Edézhíe candidate protected area contains three International Biological Program Sites (Mills Lake, Horn Plateau, Horn River). These sites were identified because of their characteristic geomorphology, rare or ‘at risk’ flora and fauna, and important wildlife habitat.
3. Mills Lake is a wetland the Canadian Wildlife Service considers as a “key migratory bird terrestrial habitat site” in the NWT. Mills Lake commonly supports over 1% of the national populations of a number of migratory bird populations including the Lesser Snow Goose (Western Arctic population), Greater White-fronted Goose, and Tundra Swan.
4. The Edézhíe candidate area provides the source waters for three important drainages in the Dehcho Region -- the Willowlake, Horn and Rabbitskin Rivers. These drainages are of great importance to the subsistence economies and culture of a number of Dene communities around Edézhíe.
5. The Edézhíe candidate area contains almost the entire Horn Plateau ecoregion (77%) and a portion of the Hay River Lowlands (5.6%) and the Great Slave Lake Plain (4.8%) ecoregions. Owing to its elevation, the Horn Plateau is similar to the sub-arctic forest transition zone hundreds of kilometers to the north. Consequently, it has floral and faunal characteristics more typical of higher latitudes. Furthermore, Edézhíe contains all successional stages of vegetation expected in the boreal forest at that latitude ranging

from early successional shrublands to mature coniferous forest to old, lichen dominant forest. Within this mosaic are more temporally stable communities such as wetlands and open, graminoid dominant plant associations.