

Canadian Wildlife Service
Arctic Ecology Map Series
Critical Wildlife areas

Descriptive report

Herschel Island

HERSCHEL
(Sheet #N.W. 68/144)

The mapped area of the Herschel sheet encompasses some 22,500 square miles. Approximately one third of the area consists of the marine area of the Beaufort Sea and Mackenzie Bay.

The sheet is characterized by four major ecological regions which includes the tundra of the coastal plains bordering the Beaufort Sea, a small portion of the Mackenzie Delta on the western edge of the sheet, the inland mountain ranges on the central portion and the northern half of the Old Crow Flats to the south.

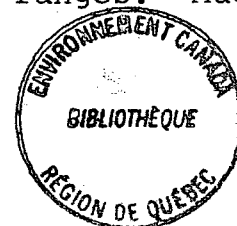
The mountainous areas are drained by several major river systems with deep valleys. These river systems are important caribou migration routes and contain important anadromous fishes.

The area within this map sheet is largely unsettled and does not contain any major communities.

This sheet contains extremely important populations of a wide range of wildlife species. Barren-Ground Grizzly Bears are common along all of the river systems of the map sheet. Particularly important areas are the valleys of the Blow, Babbage and Firth Rivers. Important waterfowl areas occur along the coast and in the Old Crow Flats. Dall Sheep are found in the British and Richardson Mountain ranges. Much

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of the sheet contains important ranges and migratory routes for the Porcupine Caribou Herd, part of an international herd which occupies ranges at various times in both Alaska and Canada.

Wolves and Wolverines are common throughout most of the map sheet while Muskrats are an important fur species in both the Old Crow Flats and the Mackenzie Delta. The map sheet contains large populations of anadromous and marine fishes including Arctic Char, Herring, Whitefish and Capelin.

The northwest corner of the British Mountains, including the valley of the Firth River, has been proposed as an International Wildlife Reserve, which would be contiguous with the Alaska Wildlife Reserve. This area contains park-like terrain, which includes limestone minarets and a very large Aufeis Field (Firth River - perennial ancient ice), and has been described as unique in Canada.

The following is the descriptive text for units mapped on this sheet.

| UNIT NUMBER | DESCRIPTION |
|-------------|--|
| 1 | The marine area of Amundsen Gulf, Herschel Island and the entire shore of the coast contains large concentrations of Capelin. This species was unknown to the area prior to 1959. On the basis of inshore trolling off the Tuktoyaktuk Peninsula, biomass of marine fishes has been determined as 10,000 pounds per square mile. Beyond two miles offshore, productivity falls to approximately 3,000 pounds of biomass per square mile. Similar data are expected for Mackenzie Bay, where major ground fishes occur in shallow areas within the ten fathom contour. (Hunter) |
| 2 | This unit is a staging and pupping area for Beluga Whales. Numbers in the thousands have been observed in this area until late August. Pupping takes place in late June. (Lambert) |
| 3 | This unit is an important fall staging area for a total population of 30,000 waterfowl. The major species which make up this total are Lesser Snow Geese, Pacific Black Brant and White-fronted Geese. Some molting flocks utilize this area during the summer as well. (Barry) |
| 4 | The entire Mackenzie Delta estuary which extends onto the Port Brabant sheet to the east is a summer pupping area for Beluga Whales. Estuaries in general are important pupping areas in the Arctic. Beluga populations generally move through this unit during the summer. (Sergeant) |
| 5 | This unit consists of the small portion of the Mackenzie Delta which occurs on this sheet. The Mackenzie Delta is an important migratory route and spawning area for anadromous fishes of which Arctic Char and Whitefish are the principal species. Spawning generally takes place far up the river channels since the lower reaches are too turbid for spawning. Whitefish spawn in lakes in and adjacent to the Delta. |

| UNIT NUMBER | DESCRIPTION |
|------------------|---|
| 5 (continued) | <p>The Delta contains approximately one million acres of water with a standing crop (all species) of approximately 30 pounds per acre. For all species of anadromous fishes, the total standing crop for the entire Delta is in the order of 25 to 30 million pounds.* At an expected 10% annual increment the suggested harvest rate is 2½ to 3 pounds per acre. (Hunter)</p> <p>The Peel Channel along the west side of the river, is one of the important Char routes and spawning areas. (Hunter) Char utilize the West Channel of the Mackenzie for migration en route to upstream spawning areas. (Barry)</p> |
| 6 | <p>This unit is a major fall staging area for waterfowl from September 1st to freeze-up approximately October 10th. Populations include 100,000 Snow Geese, 25,000 Pacific Black Brant and 10,000 White-Fronted Geese. These populations move westward from this area towards and around the northern coast of Alaska. The dotted extension of this unit indicates stopping places for these populations en route to Alaska. (Barry)</p> |
| 7 | <p>This unit is a critical Whistling Swan breeding and molting area occupied from May 25th to September 1st. The population consists of 300 nesting pairs and approximately 1,000 non-breeding molting birds. (Barry, Stevens)</p> |
| 8 | <p>This unit is considered important for Muskoxen because of the continued presence of animals (1-6) that have wandered in from the Alaska transplant of 48 animals at Barter Island. This area is probably vital to the re-establishment of Muskoxen on the Alaska-Yukon Arctic Slope. (Hawley)</p> |

* Exclusive of Marine Herring and Capelin.

UNIT NUMBER

DESCRIPTION

9 This unit is summer range for segments of the Porcupine Barren-Ground Caribou Herd portions of which continue onto the North Slope of Alaska. (Stevens, Lambert, Belous, Hawley, et al.)

Some calving probably occurs along the major river valleys in the Richardson Mountains en route to this area. Migration occurs through the Old Crow Flats and major river valleys to the coastal plains. Many of the same routes are utilized in the return migration in mid-August. This is an extremely large herd. Two sub-herds of 15,000± were seen between the Blow and Babbage Rivers in 1966-67. (Lambert)

Year to year use of this area is variable, and often constitutes a round trip migration corridor between the Canadian wintering grounds and Alaska. (Hawley)

The unit delineates summer range for the Porcupine Herd during July and August. Some calving takes place inland in June. (Stevens)

10 The unit boundary designates the most important river areas for anadromous fishes on the map sheet. The two primary anadromous species are Arctic Char and Lake Herring. Small populations of Whitefish and Inconnu also occur. Some fresh water species occur in coastal "lagoons" such as occur at Shingle Point and King Point Harbour. These "lagoons" are influenced by the large fresh water flow from the Mackenzie River. All streams within the unit support anadromous fish populations. The standing crop of coastal fresh water and anadromous fishes is in the order of 80,000 to 100,000 pounds. The annual increment to the population is in the order of 10%. Up to 12,000 pounds of Arctic Char have been harvested from a standing crop of 35,000 to 40,000 pounds for the coastal areas of this sheet. In general the maximum size of Char on this sheet is three pounds. Spawning occurs upstream in the river systems in clear deep pools, however, little is known about inland spawning areas.

UNIT NUMBER

DESCRIPTION

10
(continued)

Silted lower reaches of rivers and braided stream channels are not important for spawning.

Ptarmigan Bay contains specimens of the little known class Pogonophera. With the exception of one location in Russia, this is the only known location in the world where shallow water forms of this species are found. (Hunter)

Grayling are abundant in rivers flowing into the Beaufort Sea. (Lambert)

Big Fish River and Little Fish Creek on the eastern portion of this unit are known as an important source of "trout" which run up these rivers each fall. (Hawley)

11 Barren-Ground Grizzly Bears are abundant along the Blow River, which is also one of the migration routes for the Porcupine Caribou Herd. (Belous)

12 These are major migration routes, for the Porcupine Caribou herd. These routes are primarily utilized during August and September by herds en route to wintering areas to the south. (Stevens, Boxer, Belous, Lambert, et al.)

13 The Dall Sheep in the area north of the Rat Pass in the Richardson Mountains seem to be increasing in population despite increased non-selective hunting by residents of the area. In 1964, the population was considered to be about 58 animals from records kept by geologists who flew helicopters extensively throughout the summer. In 1969, over 100 animals were estimated by hunters in one day although they were unable to get exact counts of all groups observed from the ground. No objective, comprehensive surveys or studies have been made of sheep in the area so range and numbers have not been documented. However, superficial information indicates this population is discrete and separate from the sheep

UNIT NUMBER

DESCRIPTION

13
(continued)

south of Rat Pass although no physical barrier excludes their mingling. Harvests from the area are not well documented but kills of from 6 to 50 per year have been recorded.

Grizzly Bears are encountered in this area and appear to be quite numerous. Geologists working the area extensively remarked that they saw more bears (80+) than sheep (58 known to be different). (Hawley)

14

This unit is a critical breeding area for Peregrine Falcons, which have been seen frequently on the Old Crow River and Johnson Creek drainages encompassed by this unit. Numerous birds were seen in 1964. (Youngman)
This unit is duplicated on the Peel River map sheet.

15

The Old Crow Flats is a critical area for several wildlife species. Thousands of ducks nest in this unit from May 25th to August 15th. Approximately 100 White-Fronted Geese nest, and an additional 800 molt in the area during the same period. No molting Swans have been observed in the area. (Barry)

Pacific Black Brant nest in the Flats. (Harrington)
Harrington concurs with the data provided by Barry. The following are waterfowl population data from Barry (1958):

| | |
|---------------------|--------|
| Whistling Swans | 200 |
| Canada Geese | 100 |
| White-Fronted Geese | 1,400 |
| Mallard | 1,500 |
| Pintail | 37,000 |
| Scaup | 38,000 |
| Canvasback | 6,000 |
| Scoter | 64,000 |

The Old Crow Flats is a main migration route for the Porcupine Herd and also contains numerous Moose and Muskrats. In addition, it is one of the most important breeding areas for Canvasback Ducks in North America. The entire area should be considered critical for wildlife. (Barry)

UNIT NUMBER

DESCRIPTION

15
(continued)

The Old Crow Flats are a secondary wintering range for segments of the Porcupine Caribou Herd. The Porcupine River crossings have been hunted for centuries and are of historical importance as part of the Old Crow Indian culture. (Belous)

The Old Crow Flats are the principal Muskrat area of the Yukon Territory and are vital to the economy of the local inhabitants. Muskrats provide almost all of the cash income for the Old Crow Indians, and food for people and dogs in the spring. Populations are variable as with all known Muskrat populations. Population densities are low, since the bulk of the habitat consists of shallow, relatively unproductive lakes. Productive marshes are lacking. As a result the habitat is probably more sensitive to disturbance by man, or by Muskrats alone, and coupled with low primary productivity, results in drastic and rapid population fluctuations.

This unit supports a relatively dense population of Moose year round. Few census or density figures are available, however the wintering population is probably larger than the summer population as a result of migration into the area. During the winter, flights over the area showed densities of about one-half to two Moose per mile of flight line.

The Old Crow Flats and vicinity frequently winter several thousand Caribou of the Porcupine Herd. The occurrence is erratic and numbers are variable. Reports from Old Crow are not very useful since the people need not travel long distances for Caribou during the winter and reports do not necessarily reflect the numbers of animals over the entire range.

The Old Crow Flats constitutes the main migration route for Caribou of the Porcupine Herd. Generally, in spring, the animals tend to funnel into a relatively narrow migration corridor from a much more extensive wintering area to the south.

UNIT NUMBER

DESCRIPTION

15
(continued)

The animals wintering to the west move generally eastward and pass east of Old Crow River, while those as far as the east side of the Richardson Mountains may veer just as far to the west.

Generally the eastern segment migrates up the Bell River but may cross directly to the vicinity of Big and Little Fish Rivers, or swing over to the Driftwood River to reach the Arctic Slope at the Blow River. Caribou have been reported regularly migrating through all parts of this unit. The fall migration appears to be influenced by the coastal barrier so that the migration is more uniform and contained. However, it is still quite variable. The main routes off the Arctic Slope are at the Blow River Pass and the headwaters of Fish River. In the Big and Little Fish Rivers, concentrations of 10-20,000+ animals have been reported frequently in recent years. That area is often occupied for a month or more (August to October) before migration continues down the Bell River or across the Rat River on the east side of the Richardson Mountains. (Hawley)

16

This unit contains the most northerly population of Dall Sheep in Canada. They probably number a few hundred animals, and appear to be a separate group from the sheep in the Richardson Mountains. However, there is little information available on their abundance, range and movements. (Hawley, Pearson)

17

Grizzly Bear are abundant along the Firth River valley and Caribou from the Porcupine Herd are summer transients (Belous). Dall Sheep occur along the mountain slopes adjacent to the valley, and Arctic Grayling and Arctic Char occur up the Firth River as far as Muskeg Creek. (Barry)

UNIT NUMBER

DESCRIPTION

- 18 This unit is a critical calving area for that segment of the Porcupine Caribou Herd which calves in Canada. However, the bulk of calving of this herd occurs in Alaska. (Belous, Pearson) This herd may number in the order of 50,000 animals. (Belous, Hawley)
The most critical time of use is during the calving period (the last week in May and the first week in June). (Hawley, Belous)
- Calving localities apparently vary annually and this unit is subject to revision as further data become available. The Malcolm-Firth River plains are presently considered the most important areas. (Hawley)
Corroborative data from Boxer and Lambert.
- The area encompassed by this unit is also important for Grizzly Bear. Reports of numerous, unusually large, "different" bears are continually received from prospectors and hunters. Grizzly ranges are not sharply delimited and they are common to abundant throughout the British and Richardson Mountains. Annual sightings reported total 100± within the unit, and these are considered to be separate sightings. (Hawley)
- 19 This unit is a sea duck staging area. No further data are available. (Barry)

REFERENCES

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T. W. Barry
V. D. Hawley
A. M. Pearson (Canadian Wildlife Service)
W. E. Stevens

R. Belous

D. Boxer Northwest Territories, Game Branch

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J. Lambert Carleton University

C. R. Harington
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