The Atlantic Brant and Eelgrass (Zostera Marina) in James Bay, a preliminary report.

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I. Atlantic Brant in James Bay

The migration of Atlantic brant (Branta bernicla hrota) through James Bay remains largely unstudied. Earlier workers in the region suggested a northwest to southeast movement of the brant through James Bay in fall, and the reverse for spring, with concentrations off northwest and southeast Akimiski Island, Strutton Islands, and in the protected bay on the east shore of Charlton Island (Smith, 1943).

A. Bourget and S. Curtis of the Canadian Wildlife Service and H. Lumsden of the Ontario Ministry of Natural Resources encountered brant at the above locations in the fall of 1972, as well as at other locations on both sides of James Bay. Figures one and two indicate concentrations of brant encountered during coastal surveys in the fall of 1972. Survey flights on October 4 and 12 were specifically flown to assess brant numbers thus sightings were not incidental to snow goose censusing. As in 1971 (Lumsden, 1971)

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Figure one

Sightings of brant, Fall 1972.

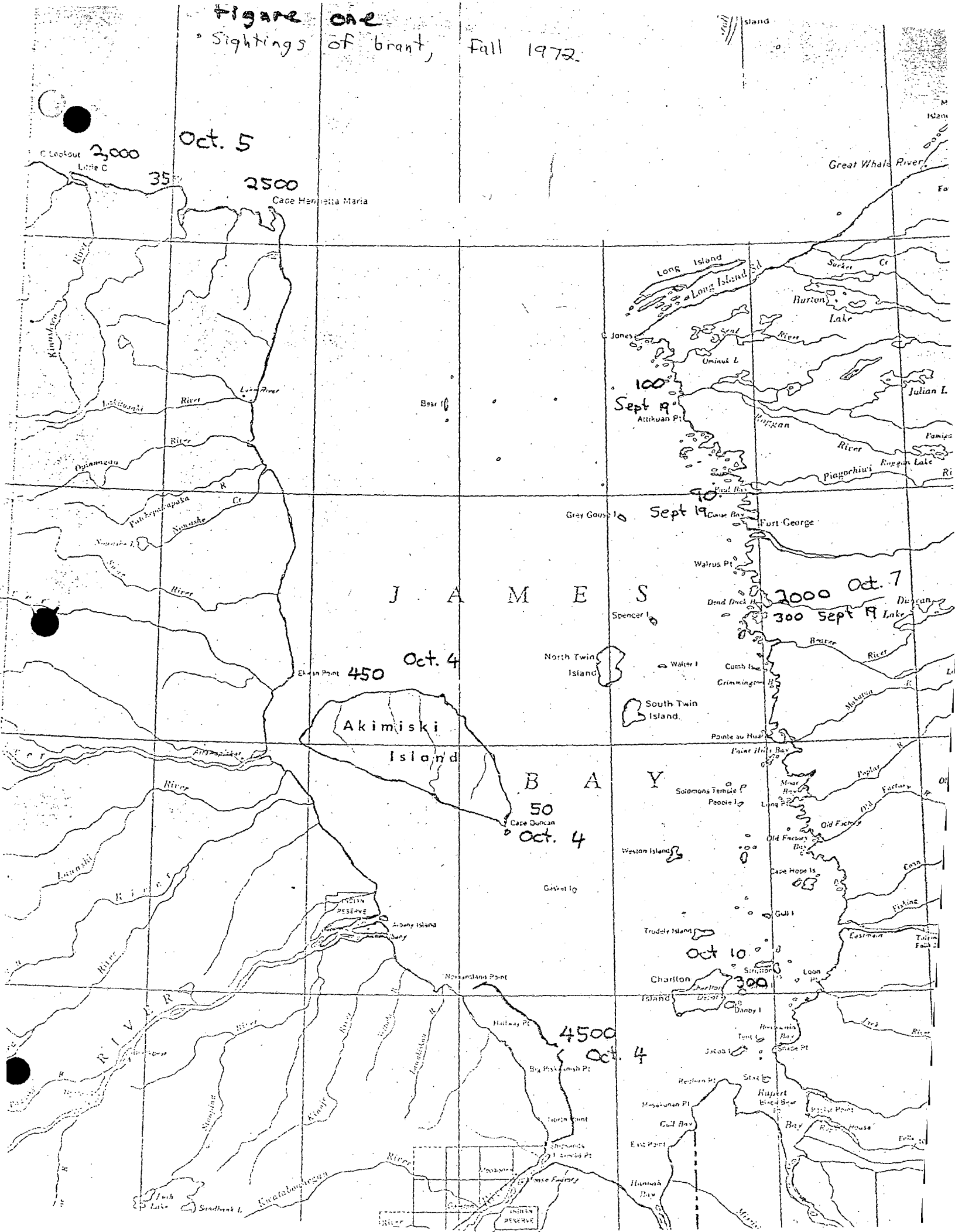
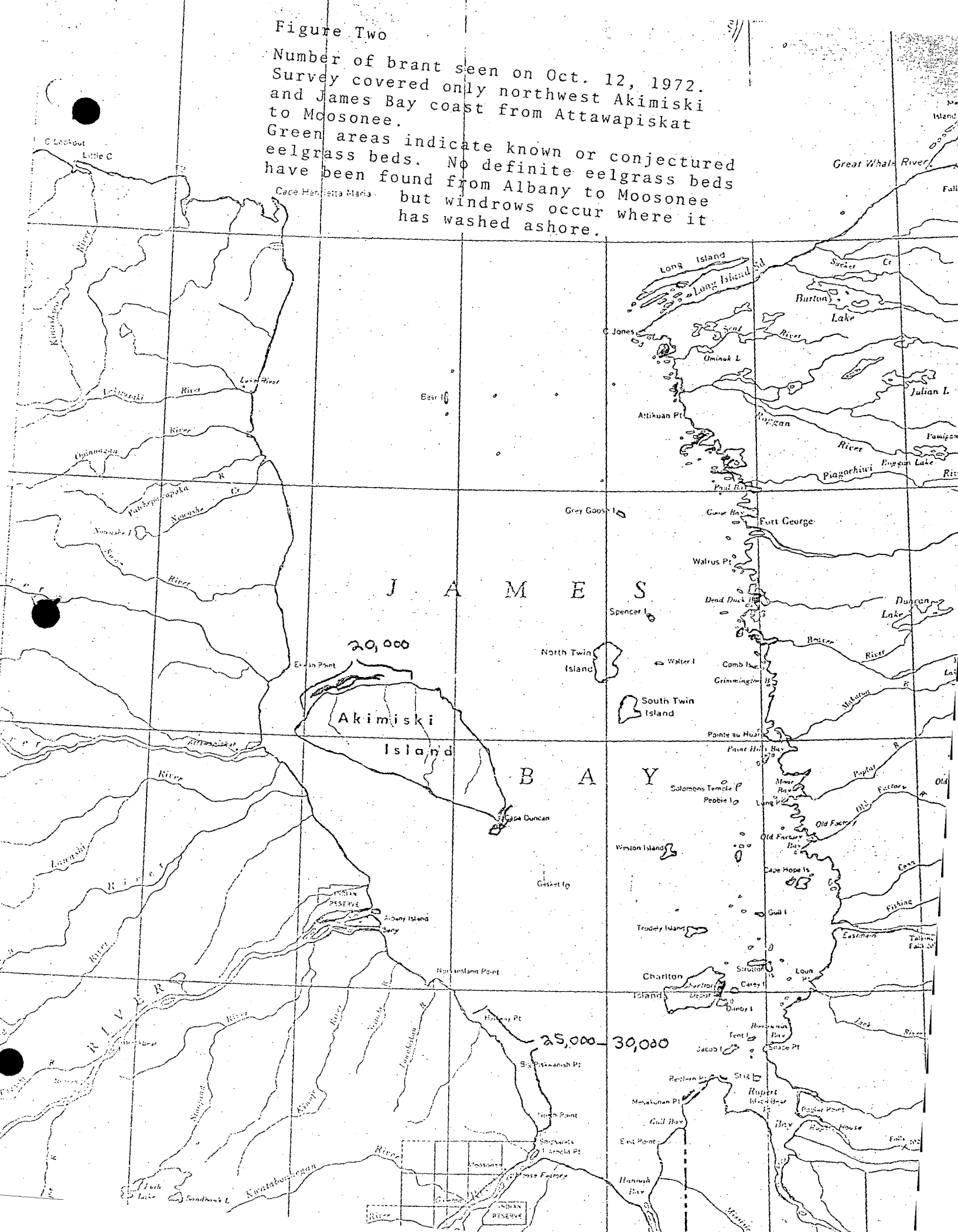


Figure Two

Number of brant seen on Oct. 12, 1972. Survey covered only northwest Akimiski and James Bay coast from Attawapiskat to Moosonee.

Green areas indicate known or conjectured eelgrass beds. No definite eelgrass beds have been found from Albany to Moosonee but windrows occur where it has washed ashore.



largest concentration of Brants were found along the Northwest end of Akimiski Island and off Pisquanish Pt. and North Bluff Shoal.

On May 18, 1972 a total of 250 brants were seen at the southern end of James Bay, mostly near the mouth of the Moose, Harricanaw and Missisicabi rivers. Lumsden (pers. comm.) says that in late May brant are often seen migrating low over the water of such rivers as the Fort George, Eastmain, Ruperts, Broadback, Nottaway, Missisicabi, Harricanaw and occasionally the Moose. This has been frequently referred to by earlier observers in James Bay and suggests the brants utilize the rivers from the east and southeast as aids in navigation.

Brant numbers are difficult to estimate because of their dark colour, small size, tendency to fly in rather tightly bunched flocks, and their evasiveness with respect to aircraft. They often flush at great distances from the aircraft and in some cases considerable time was spent searching for, and chasing, flocks that one of the observers had noticed at a distance.

In 1972, as in past years, brant seen along the Ontario coast of James Bay were off the tips of the points or, if not near the points, off shore beyond the low tide line. Their tendency to stay off shore probably accounts

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for the low numbers killed by hunters.

Hunting records from organized fall goose hunting camps along James Bay show that very few Brant are killed. Salisbury (1972) has reported that in the period from August 1971 to August 1972 Indians at Fort George killed an estimated 918 brants (328 killed by Indians in interviewed sample). This seems on the high side when compared with other reports of brant hunting and may be due to a misunderstanding as to species identification. (For example, in explaining his tabulated data Salisbury states that he has lumped snow geese and blue geese with Canada geese under the heading "geese" and yet there is a listing of 2240 "wavies" killed). If 1000 odd brant are harvested by Fort George Indians alone, it underscores our need for more data regarding this species in James Bay.

The winter counts of brant off the New Jersey coast indicate a steady decline in numbers over the past three years. In addition, the counts for the winter 1972-1973 show only about one juvenile bird per 1000 adults. The summer of 1972 was a disastrous one for most arctic breeding waterfowl species, especially for brant. Surveys of James Bay, primarily aimed at recording the numbers and distribution of brant, are planned by the Canadian Wildlife Service for late May - early June 1973. Potential hydro impact on this threatened species must be evaluated in advance and prevented.

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II. Eelgrass, Zostera marina, a major food source for Atlantic Brant.

Eelgrass, Zostera marina, is a very important food for brant, and is also heavily utilized by Canada geese. The distribution of eelgrass in James Bay is largely unknown but it seems to be chiefly confined to various bays on the Quebec coast, and to Charlton and Akimiski islands (figure two). McRoy (1970), has reported that it is found in lagoons, bays, and estuaries where the dilution effect is low. Silt laden river water has a strong dilution effect in Rupert Bay and along the Ontario coast from East Point to Attawapiskat.

Smith (1943) reported finding eelgrass in the clear and quite saline waters of the east coast of James Bay, and that none was found on the south coast west of Mesakonan point. Smith (1944) stated that on the west coast eelgrass is apparently confined to the southeastern tip of Akimiski Island and along north Akimiski. From these two centers of distribution drift collects from North Point to the Swan River. The large concentration of brant in the Pisquamish and North Point areas are apparently feeding largely on this drifted eelgrass.

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A good deal of eelgrass was found drifted ashore and floating on the water near Pisquamish Point on Oct. 12, 1972.

While geese along the coast may be directly affected by the proposed Quebec hydro project, there are also possibilities for subtle effects of far ranging consequence. Temperature or salinity changes may directly affect the growth and survival of eelgrass or may indirectly affect this food base (and hence the waterfowl) through the increase of some parasite or disease. The evidence is strong to suggest that eelgrass suffered considerable destruction in the 1930's from the myxomycete Labyrinthula sp. (Renn, 1936). In addition, as dilution increases (due to increased output from the La Grande river) eelgrass will undoubtedly suffer. As eelgrass forms an important part of the base for many food chains this would indeed disrupt the ecology of the area.

It is recommended that the Department of Environment investigate the distribution of eelgrass in James Bay, particularly along the Quebec coast near Fort George. This could perhaps best be accomplished by means of aerial infrared photography in late August or early September.

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