ATLANTIC MIGRATORY BIRD TECHNICAL COMMITTEE

Position Paper Number 2

The Black Duck in Atlantic Canada

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I OBJECTIVE

To enhance and maintain Black Duck populations in the Atlantic Provinces of Canada. Within this broad objective narrower aims can be categorized:

i To identify and maintain critical areas of breeding, staging and wintering habitat.

ii To establish and maintain optimum population levels consistent with habitat carrying capacity and other overriding demands of society.

iii To maintain opportunities for hunting consistent with maintaining the Black Duck population and to ensure opportunities for non-consumptive use of Black Ducks.

In the following three sections aspects of Black Duck biology are examined which relate to the above objectives.

II HABITAT

i Human impact on wetlands

In prehistoric times, as today, Black Ducks bred throughout the Atlantic Provinces with the exception of that part of Labrador above the tree line. In the more northerly parts of their range they may have a lower breeding success as short summers may prevent renesting and successful brood rearing. The relative success of birds breeding on the coast and birds breeding inland has not certainly been determined, but the extent of inland habitat so far exceeds that of coastal habitat that the former, even though Black Duck may breed there in greater density, produces fewer ducks.

The French settled in the Maritimes about 1605, and set about diking vast areas of salt marsh. By 1755 they had diked approximately 25,000 ha. Although the bulk of this marshland was not important waterfowl breeding habitat, the upper reaches of the estuaries must have produced a significant number of Black Ducks. This is evidenced by production on marshes in the upper reaches of existing estuaries. The most significant effect of this drainage on Black Ducks has been in the loss of staging and wintering habitat, but since the third decade of this century the amount of salt marsh has actually been increasing as diked lands are neglected and have begun to revert to their original status.

Public subsidy of wetland reclamation programmes for agriculture has been continuous from 1841 to 1976 and it now extends to inland fresh water breeding areas as well as to the Saint John, Shubenacadie and other such floodplains. Those programmes encourage the further destruction of Black Duck breeding habitat in what we believe to be the most productive areas of the Maritimes. Furthermore, hydro-electric projects exist or are planned on many rivers in the Maritimes and are already affecting vast areas in Labrador and Newfoundland. Such projects almost invariably result in a reduction of waterfowl breeding habitat.

In spite of these significant adverse influences on breeding, staging and wintering areas the bulk of the Black Duck habitat in the Atlantic Provinces still exists.

There have been some notable intentional and some unintentional programs which have benefitted Black Ducks.

Ducks Unlimited has developed 7,225 ha of habitat for breeding waterfowl in the Maritime Provinces. In Prince Edward Island some

causeways have produced excellent breeding marshes and farm pond subsidies have, to a degree, offset the adverse effects of drainage subsidies. However, there is an economic limit to the amount of breeding habitat that can be created, and in Prince Edward Island that limit has already been approached.

ii Wintering Habitat

Black Ducks winter in estuaries and coastal marshes. Lack of suitable wintering habitat appears to be one of the limiting factors to some population segments of this species. Winter habitat is being reduced annually along the Atlantic coast, particularly in the United States. Salt marshes now threatened by large tidal power proposals which, if constructed, may have an adverse influence on marshes from Nova Scotia and New Brunswick to Massachusetts. The extent of impact of tidal power projects on salt marshes in this region has not, so far, been accurately predicted.

There are many uncertainties concerning the future of Black Duck wintering habitat both in the Atlantic Provinces and in the Atlantic coastal states. It will be necessary, however, to reduce habitat losses if Black Duck and other waterfowl populations are to be sustained at current levels. The bulk of the responsibility for maintaining the status of Black Duck populations associated with the Atlantic Provinces lies in the United States. Still Canadian wintering areas must be jealously guarded since this wintering segment is totally a Canadian resource.

Since birds migrate from Nova Scotia in some years after January 15, and since no serious winter die-offs have occurred, it is difficult to

assess the Atlantic Provinces winter carrying capacity. It is probably greater than present populations of wintering Black Ducks but a continuing programme of midwinter inventories will help assess this.

In the Atlantic Provinces Black Duck wintering areas can be protected by acquisition, lease or legislation as can and must the United States wintering areas, if the objectives of this paper are to be met.

iii Breeding Habitat

It is difficult to show that significant increases in Black Duck breeding populations have occurred as a result of waterfowl habitat developments. Certainly the breeding success and density of several species of waterfowl are increased locally on managed areas as compared to areas of natural marsh which have a lower fertility. Although of significance locally, the extent of those habitat improvement schemes is not sufficient to have any large effect on the total number of Black Ducks produced each year in the Atlantic Flyway.

III POPULATIONS

i Distribution

The Black Duck breeds in a wide variety of wetland types including beaver flowages, rivers, lakes, farm ponds, coastal marshes and estuaries. Inaccessibility, low and uneven population densities as well as the diversity of habitat types used by Black Ducks has made it impossible to determine annual production throughout the Atlantic Provinces. With the manpower and funding presently available, management decisions have,

therefore, been based primarily upon harvest data adjusted by banding and winter inventory data.

Our incomplete data suggest declines in wintering populations of Black Ducks in the Atlantic Provinces. Significant declines in numbers of Black Ducks wintering along the eastern seaboard in the United States may be due to losses of wintering habitat, mainly salt marshes.

In midwinter a small number of Black Ducks occur along the south and west coasts of Newfoundland, but most are to be found along the north and south shores of the eastern two-thirds of Prince Edward Island, the southwestern shore of New Brunswick, and the southwestern and southeastern shores of Nova Scotia.

ii Inventories

An improved annual Black Duck inventory is required to evaluate Atlantic Flyway population status. These counts are most appropriately conducted during January when birds are concentrated and can be most easily counted. With regard to the Atlantic Provinces wintering populations, more complete counts over several years are needed to clearly determine not only the total wintering population, but also the effect of such variables as weather and hunting pressure on numbers and distribution.

In addition to the present, mainly preseason banding effort, an increased winter banding effort is required to evaluate survival rates and additional preseason banding is needed in Labrador and Newfoundland to more clearly describe movement patterns of those local populations.

So little effort has been expended on systematic Black Duck work that we have only slight evidence to indicate that the Black Duck breeding

population in the Atlantic Provinces has decreased, except in local areas where habitat losses have occurred. However, in order to make recommendations for harvest with foresight, it is desirable to have annual estimates of breeding success and of breeding population size. It may also be necessary in future to make more precise regulations for specific population segments or harvest areas within the Atlantic Provinces. For this we require the development of reliable techniques for measuring breeding population trends for various habitats and/or regions. The application of these yet to be developed techniques to the continental population may be a necessity in the future.

iii Hybridization with Mallards

The genetic relationship between Mallards and Black Ducks has been the subject of considerable debate. Black Ducks and Mallards hybridize regularly and the hybrids hybridize among themselves. The behavior of the two species and their hybrids is practically identical.

Encroachment of the Mallard into the Atlantic Provinces thus far has not been appreciable, though in the interests of reducing the amount of hybridization it is desirable to discourage releases of Mallards in the Atlantic Provinces.

IV INTERACTION WITH MAN

i Hunting

The size of the Black Duck harvest is determined by the numbers of hunters and the availability of the birds. In recent years, the numbers

of hunters in the Atlantic Provinces has increased from 33,579 in 1967 to 61,093 in 1975. The harvest of Black Ducks has increased from 67,100 to 128,000 in the same period. Although there is little evidence to suggest a decline in the Atlantic Provinces breeding population as a whole, we cannot assume that harvest levels may be increased indefinitely. We must be prepared to adjust regulations to get an optimum harvest. At this time a subjective estimate of maximum sustainable harvest might be in the neighbourhood of 125,000.

Canadian Wildlife Service harvest surveys indicate that approximately 110,000 and 128,000 Black Ducks were harvested in the Atlantic Provinces in 1974 and 1975 respectively. Banding data indicate that probably more than 60 per cent of those birds were produced in the Atlantic Provinces.

Significant numbers of birds shot in the Maritime Provinces are produced in Newfoundland and Labrador. Unfortunately, banding data from those areas are not sufficient to define migratory movements exactly. Banding efforts have been made in Labrador in the late 1940's and again in the 1960's. Interestingly, very few of those birds were recovered in Newfoundland, though the Maritime Provinces contributed substantial numbers of recoveries. Very few of the Newfoundland produced birds winter on the Island, and the greater part of hunting mortality of those birds occurs in the Maritimes and the United States.

Returns from preseason banding on the south shore of Nova Scotia suggests that young birds are relatively sedentary and that either they do not migrate out of Nova Scotia in significant numbers or that they do not move until after the close of the hunting season in the United States. Prince Edward Island young show this same pattern of migration. Flying

birds of the year banded (preseason) in those areas seem to exhibit similar characteristics to those banded locally as flightless young, but those flying birds include unknown numbers of young from other areas.

Recoveries from Saint John River and Nova Scotia - New Brunswick border area bandings suggest a strong tendency toward migration as well as a relatively high local recovery rate.

Adult female Black Ducks have strong homing tendencies toward both breeding and wintering areas; males do not exhibit strong homing tendencies. Adult Black Ducks are much less vulnerable to hunters than are young birds and those adults make up an experienced breeding nucleus. Young female Black Ducks appear to return to the area where they learned to fly in order to breed the following spring.

ii Sanctuaries

During spring and fall migration Black Ducks congregate on suitable coastal and inland marshes throughout the Atlantic Provinces and sanctuaries or areas closed to hunting are provided for waterfowl at many of those concentration points. Valid concern might be generated (due to a potential disease hazard) against the practice of concentrating birds, however, the concentrations are not high compared with other areas in their range, and such practices often result in increased harvests of Black Ducks. Furthermore, the proportion of experienced adults harvested in such situations is low. The importance of traditional congregation points cannot be over-emphasized and extreme caution should be exercised with reference to industrial or housing developments which might degrade any of those staging habitats.

iii Crop Depredation

Black Ducks have been influenced to a degree by agricultural activities and the birds have adapted some new traditions related to the unnatural availability of cereal grains in the farming areas. Crop damage as a result of Black Duck feeding is minimal and though their use of stubble fields in Nova Scotia and Prince Edward Island is increasing, it is not expected to become a problem.

RECOMMENDATIONS

i Habitat

Critical breeding, staging and wintering areas must be identified and protected. The United States, wherein Black Duck wintering habitat is being destroyed more rapidly than in Canada, must be encouraged in its efforts to preserve such habitat.

ii Populations

An adequate annual mid-winter Black Duck inventory should be conducted. Breeding population densities should be monitored in a variety of habitat types in each area of harvest and in order to supplement information obtained in harvest surveys a banding program needs to be organized that will include breeding concentrations in Newfoundland and Labrador. This banding programme should be consistent with the seasonal and quota requirements of the Atlantic Flyway Council banding policy and with the statistical requirements of the Canadian Wildlife Service Biometrics Section.

iii Interactions with Man

If possible the present harvest rates should be maintained; but in case the need for a reduction becomes obvious, methods of organizing such a policy should be developed. Adult females should receive the greatest protection. In the solution of the "Black Duck Problem" federal and provincial co-operation in efforts to monitor harvest and populations is essential.