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Re-Establishment of the Giant Canada Goose in Iowa¹RICHARD A. BISHOP² and RONALD G. HOWING³

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SYNOPSIS: Giant Canada geese (*Branta canadensis maxima*) were common nesters in Iowa before 1900 but were exterminated through overexploitation about that time. Recent efforts by the Iowa Conservation Commission to re-establish these birds have

been successful. By providing protection and nesting areas this flock has been increased from a few pair in 1964 to 800-1,000 birds in 1970. The birds have adapted to the surrounding habitat and established a migration tradition. The goal is to increase the flock to 7,000 birds.

INDEX DESCRIPTORS: Canada geese, Ingham Lake, flock establishment, nesting, mortality rates, hunting, public use.

Giant Canada geese (*Branta canadensis maxima*) were common nesters in Iowa in early times (Hanson, 1965), but overexploitation exterminated most wild nesting populations of Canada geese about 1900.

The ever increasing demand for Canada geese by both the hunter and the general public has generated a response in conservation agencies throughout the Mississippi Flyway. Many states have been working diligently to increase certain flocks of Canada geese that are providing shooting for their hunters. Also several states have embarked upon home-grown flocks of the giant Canada goose with striking success. Free-flying Canada geese have been successfully re-established in Missouri, Ohio, Wisconsin and other states (Dill and Lee, 1970). These flocks are providing additional birds for the hunter while fulfilling a demand by the general public to see these magnificent birds. This paper reports an attempt in Iowa to re-establish the giant Canada.

PROCEDURE

Sixteen adult pairs of pinioned *maximas* were bought in 1964 from private goose raisers in Minnesota and South Dakota. These geese were probably progeny of Canada geese that originally nested in Iowa, Minnesota, and South Dakota. They were kept captive in an enclosure at Ingham Lake in Emmet County. Most of the young raised during the years 1964-66 were pinioned to build up the captive breeding flock.

Elevated artificial nesting structures and man-made dirt islands were constructed in the Ingham Lake breeding pen. Elevated structures were installed on marshes in the vicinity of Ingham Lake for use by free-flying geese. In many states with Canada goose projects, predation has been a serious limiting factor. By providing safe man-made nesting sites in the breeding pen, it was hoped that the young geese raised there would be imprinted and would select safe nesting sites in the wild.

Before 1967 many of the free-flying young and adults were harvested by sportsmen hunting around the periphery

¹ This project was conducted as part of a research program on waterfowl in the Wildlife Section of the State Conservation Commission. Funds were provided from hunting and fishing license fees.

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of the small refuge. The flock was barely maintaining its numbers because of this high local harvest. In 1967 a Canada goose refuge, 120 square miles in size, was established around the Ingham Lake breeding pen by closing parts of Emmet and Palo Alto counties to Canada goose hunting. With adequate protection from hunting, all young Canada geese raised at Ingham Lake since 1967 have been released as free-fliers.

Young wing-clipped Canada geese bought from goose raisers in northwest Iowa during the period 1967-69 were used as a call flock at the Red Rock Refuge east of Des Moines, and then brought to Ingham Lake by December each year. Canada geese from Red Rock, numbering 153 in 1968, 66 in 1969, and 128 in 1970, were allowed free-flight when they moulted as yearlings to supplement geese raised at Ingham Lake.

RESULTS

Breeding and Production from the Ingham Lake Captive Flock

The results of 7 years of nesting activity from the captive flock at Ingham Lake are summarized in Table 1. Most of the geese nested on the islands, platforms or in barrels. Many of the ground nests were destroyed by raccoon or skunk until 1970. During 1970 the area around the goose pen was intensively trapped to reduce predation of ground nests. No ground nests were destroyed by predators during 1970. However, abandonment of ground nests was high during 1970 due to overcrowding and territorial conflicts between geese. Nest abandonment was lower on the elevated nesting sites where it appeared that the geese were able to defend a smaller territory and possibly felt more secure.

Dogs broke into the goose pen twice before nesting during 1969 and killed several breeding pairs of captive geese. Nesting activity was curtailed in 1969 because of this unfortunate incident.

Mortality of Young Released as Free-fliers

Hunting does not appear to be limiting the re-establishment of nesting flocks in northwest Iowa. Only 11 recoveries were reported from 183 Canada geese banded in the period 1967-69. Mortality rates for these birds until 1970 were very low, indicating that most young remained with the family group within the goose refuge until most hunting seasons were over. In past years they have left northwest Iowa in December and have experienced very light gunning pressure. A few birds taken as 2-year-old birds (all males) have been scattered through neighboring states with no clear cut pattern.

TABLE 1. INGHAM LAKE CAPTIVE CANADA GOOSE FLOCK BREEDING AND PRODUCTION DATA, 1964-70¹

Year	Number Nests	Average Clutch	Percent Successful	Number Eggs	Percent Hatched	Average Brood Size	Goslings Raised	Number Goslings Banded
1964	—	—	—	—	—	3.4 ²	24 ²	—
1965	12	—	—	—	—	—	17 ²	—
1966	21	—	—	—	—	—	60 ²	—
1967	19	—	68	—	—	4.1 ²	54 ²	52
1968	26	5.1 ³	69	96 ³	82 ³	4.2 ⁴	79 ⁴	83
1969	22	—	—	—	—	—	52 ²	48
1970	52	5.3	71	274	52	3.9 ⁴	144 ⁴	101
Totals	152	5.2	70	—	60	4.0	430	284

— Complete data not available.

¹ Data from flightless adults held in 24.3 acre pen.

² Based on brood counts.

³ Eggs from 19 of the 26 nests—number of eggs from 7 nests unknown.

⁴ Based on eggs counted that hatched from successful nests.

As more birds are produced, an earlier migration and higher mortality rates are expected. Preliminary analysis of 1970 band returns shows 54 recoveries; however, recoveries will continue to be turned in throughout the year. Of these, 54% were first year recoveries. A total of 264 young geese were banded in 1970 giving an 11.7% direct recovery rate the first year. Correcting these data for reporting rate (approximately 50%) gives a first year direct recovery rate of at least 23.4%. Additional returns will increase the recovery rate. This recovery rate is comparable to rates experienced by immatures of the Eastern Prairie Population of Canada geese (Vaught and Kirsch, 1966). If mortality rates do not increase greatly over what was experienced in 1970, the population should continue to increase.

Establishment of Breeding Free-flying Geese in Northwest Iowa

A summary of observations of free-flying breeding Canada geese in northwest Iowa is presented in Table 2. Breeding Canada geese were occasionally observed in the wild before 1966. However, it is believed that most of these geese escaped from local goose raisers.

It appears that most geese are selecting relatively safe nesting sites (Table 2). Muskrat huts, when available, appear to be the best nesting sites. Barrels appear to be next best with islands, ditch banks, basket nests and others ranking in that order. Approximately 75% of the nesting is occurring within 5 miles of the Ingham Lake breeding pen. The geese have pioneered surrounding marshes and private

TABLE 2. REPRODUCTIVE DATA ON THE FREE-FLYING INGHAM LAKE FLOCK, 1966-70^{1, 2}

Year	Number Nests	Site of Nests	Average Clutch	Percent Successful	Number Eggs	Percent Hatched	Average Brood Size	Estimated Number Goslings
1966	1	M. Hut	6.0	100	6	100	6.0 ³	63
1967	2	M. Hut	—	100	—	—	5.0 ³	12 ³
1968	3	M. Hut	—	100	—	—	5.0 ³	15 ³
1968	4	Unknown	—	—	—	—	5.0 ³	20 ³
1969	2	Basket	5.5	100	11	100	5.5 ⁴	11 ⁴
1969	4	Barrel	5.7	100	23	73	4.2 ⁴	17 ⁴
1969	3	M. Hut	5.0	60	15	60	4.5 ⁴	9 ⁴
1969	1	Ground	5.0	100	5	100	5.0 ⁴	5 ⁴
1969	2	Unknown	—	—	—	—	5.0 ³	10 ³
1970	10	Basket	5.0	60	50	56	4.8 ⁴	28 ⁴
1970	7	Barrel	5.6	100	39	100	5.6 ⁴	39 ⁴
1970	11	M. Hut	5.4	91	59	90	5.3 ⁴	53 ⁴
1969	1	Ground	2.0	100	2	100	2.0 ⁴	2 ⁴
1970	3	Ditch Bank	3.7	66	11	82	4.5 ⁴	9 ⁴
1970	1	Duck Blind	6.0	100	6	100	6.0 ⁴	6 ⁴
1970	4	Island	3.2	75	13	70	3.0 ⁴	9 ⁴
1970	4	Unknown	—	—	—	—	4.0 ³	16 ³
Total	63	—	5.0	76 ¹	240 ¹	81 ¹	4.7	267

— Complete data not available.

¹ Data from observed nests only.

² All young were left in the wild as free-fliers.

³ Based on brood counts.

⁴ Based on eggs counted that hatched from successful nests.

small sloughs indicating their ability to utilize available habitat. This ability was one aspect known to be very important to the success of enlarging the flock.

Another obstacle envisioned was the lack of migrational behavior. If the flock failed to migrate, considerable problems could arise. However, the birds did develop a migration desire and established a fall migration, but the pattern has not been determined.

DISCUSSION

The Ingham Lake goose flock has only recently increased to the population level capable of providing some birds for shooting plus expanding nesting activities over adjacent marshes and private sloughs. This project has met with much interest and public support which gives considerable justification for the project on aesthetic values alone.

Because of the hunting aspect and increased demand by the general public to see these birds re-established as common nesting birds, plans have been made to expand this project to establish these birds as a prominent species. In order to increase the population, additional key refuges are needed to maintain a breeding nucleus. These birds are quite vulnerable to the gun on their natal areas and thus must be given adequate protection. It is believed that two additional refuge areas and breeding flocks (one in the Spirit Lake area at Kettleon Hogsback, and one near Ruthven on

Smith's Slough) will provide protection for sufficient birds to maintain a population level high enough to utilize the surrounding habitat. These three refuges will triangulate the biggest portion of the marsh country in northwest Iowa. An additional flock may be established at Rice Lake near Lake Mills at a later date. It is planned that the overall adult flock will be built to about 7,000 birds of which about 3,000 would be adult breeders producing an annual crop in excess of 2,000 goslings. Results of nesting indicate that the giant geese can and will successfully pioneer new areas and rear young. At this point, production is not considered to be a problem.

The ultimate success of this management endeavor will depend on mortality rates. If the three refuge areas are large enough to protect a sizable portion of the flock and the birds do not undergo excessive harvest outside Iowa, the population should increase to the desired level.

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