

# A STUDY OF NESTING CANADA GEESE AT CONDIE NATURE REFUGE, SASKATCHEWAN, IN 1979.

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A study of Canada geese nesting at the Condie Nature Refuge northwest of Regina, was conducted during May and June 1978 to determine the number and locations of nests, the hatching success, and the survival of goslings.<sup>1</sup> In that study 25 nests containing 126 eggs were found in 11 locations. At least 79 (62.6%) eggs hatched but only 42 goslings were known to have survived to June 12, a success rate (based on the number of eggs laid) of only 35.7%.

The study was continued in 1979 to provide further observations on nesting and gosling production over an extended time period and to provide comparative information from a second breeding season.

## Methods

The survey was conducted from 20 April to 10 July. Nests were located by searching the area on foot and observing islands from shore with binoculars. After the reservoir was free of ice (May 14) a canoe was used to investigate island nesting areas more thoroughly.

Gosling counts began on May 23 when young birds were first sighted. Counts were made by searching the reservoir by canoe and upland on foot. Counts were usually made at mid-morning (1000), the same time as the nest surveys, but one count (8 June) was conducted at 0800.

## Results

### 1. NEST SURVEY

Table 1 summarizes the results of the nest survey. As the table shows, 21 nests containing 117 eggs (average 5.6 eggs per clutch) were located. The 18 (85.7%) successful nests hatched 85 (72.6%) eggs. Figure 1 shows the approximate locations of the nests.

Island "A" in the waterfowl sanctuary supported 3 nests containing a total of 16 eggs. One nest of 5 eggs was abandoned but the others hatched 6 eggs. The island vegetation consisted mainly of willow (*Salix* sp.) and rose (*Rosa* sp.) with little ground cover at the beginning of the survey but later the growth of grasses and leafing-out of bushes provided good concealment for the nests. The substrate was dry.

Roosting Island "B" is small, has banked edges and little vegetation cover. It supported one nest containing 5 eggs of which only 2 hatched.

Peninsula "D", an open area with rocky soil vegetated with willow and dock (*Rumex* sp.), contained one nest of 11 eggs of which 7 hatched.

Five of 6 eggs hatched in a nest located near the tree plantation on the north shore of the reservoir. Elsewhere on the north shore in areas of grass 3 nests contained a total of 17 eggs, all of which hatched.

Table 1. SUMMARY OF CANADA GOOSE NEST LOCATIONS, EGG PRODUCTION, CLUTCH SIZES, NESTING SUCCESS AND HATCHING SUCCESS AT CONDIE NATURE REFUGE, SUMMER OF 1979.

<i>Location</i>	<i>Number of nests</i>	<i>Number of eggs</i>	<i>Average number of eggs per clutch</i>	<i>Number of eggs hatched</i>	<i>% nests successful (hatched at least 1 egg)</i>	<i>% eggs hatched</i>
Island A	3	16	5.3	6	66.6	37.5
Island B	1	5	5.0	2	100	40.0
Peninsula C	—	—	—	—	—	—
Peninsula D	1	11	11.0	7	100	63.6
Picnic Area (Plantation)	1	6	6.0	5	100	83.8
Creek	3	16	5.3	16	100	100
Mainland—S. shore	8	44	5.5	32	87.5	72.7
Mainland—N. shore	3	17	5.6	17	100	100
Outside Refuge W. of headquarters	1	2	2.0	0	0	0
Total	21	117	5.6	85	85.7	72.6

Eight nests containing a total of 44 eggs were located in grassy areas on the high banks of the reservoir's south shore. Thirty-two eggs (72.7%) were hatched in 7 of these nests. The eighth nest was probably destroyed as there were no eggs or shells in the vicinity of the nest.

Three nests were located along the creek south-west of the reservoir. All 16 eggs hatched in these nests.

Outside of the refuge, west of the staff headquarters, one nest of 2 eggs was found. This nest was unsuccessful probably due to predation.

The first eggs (10) were hatched between 18 and 22 May and hatching appeared to peak between 25 and 30 May when 46 eggs were hatched. Only 12 eggs hatched after 4 June.

## 2. GOSLING COUNTS

The number of goslings seen was as follows: 23 May, 7; 25 May, 4; 30 May, 38; 4 June, 0; 8 June, 39; 11 June, 45;

26 June, 52; 3 July, 50; and 10 July, 35. The counts are believed to be an accurate record of gosling production as care was taken to avoid recounting broods.

Very young broods were observed in the shoreline vegetation of the sanctuary but as the young matured the majority were observed in the lure crop area (see Figure 1). Broods were also seen on lawns southwest of the staff headquarters and occasionally in a dugout on the north side of No. 11 highway.

Based on the highest gosling count (52 birds; 26 June) 44.4% (52/117) of eggs laid produced goslings. The comparison between number of eggs known to have hatched (85) and highest gosling count indicates an early mortality of about 39% of hatchlings.

Gosling counts were discontinued after 10 July because the high mobility of the maturing goslings made it impossible to obtain accurate counts.

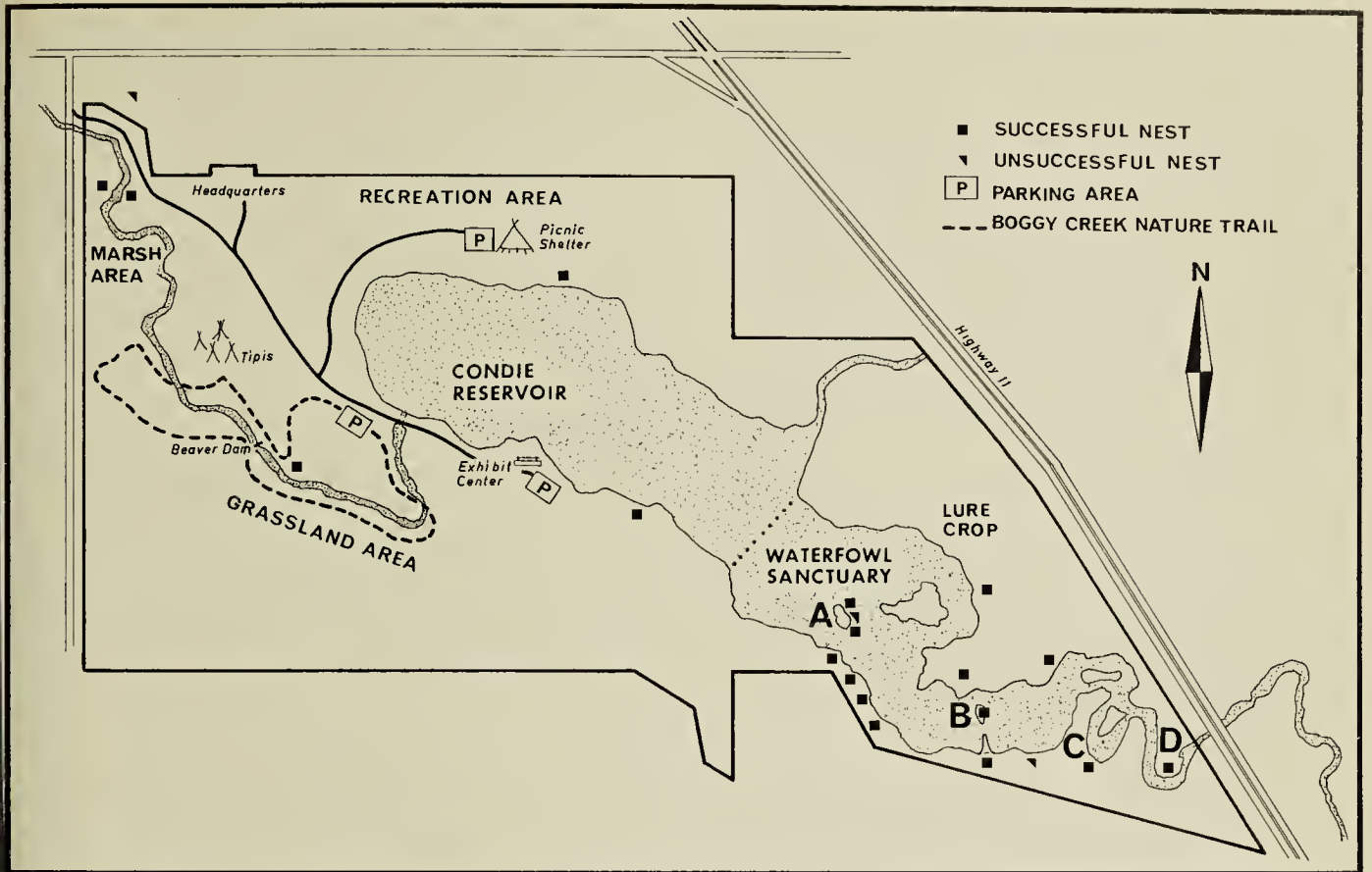


Figure 1. Map of Condie Nature Refuge.

## Discussion

The 1979 nesting season was delayed because snow and ice were still present until mid-May but the overall success rate of nests and gosling production appears similar to that of 1978.

As noted in the previous report of goose nesting at the Condie Nature Refuge the area offers a diversity of good nesting sites and brood rearing areas.<sup>1</sup>

Islands, usually preferred nesting areas, were the least successful nest sites in both 1978 and 1979. Island "A" supported eight nests containing 37 eggs in 1978 but only 10 eggs were hatched from the two successful nests at this location. It was concluded that crowding and interactions among pairs had led to the poor nesting success. In 1979 there were only three nests on the island possibly because of lingering

snow-cover. However, the success of two of these three nests is a relative improvement over 1978 (66.6% compared to 25%) as is the success ratio of eggs (37.5% hatched in 1979 compared to 27% in 1978). The greater success rate in 1979 may have resulted from the reduced nesting density. Island "B" held one nest in 1979 which successfully hatched two of five eggs (40%) as compared to two nests hatching a total of at least two eggs in 1978. This island is small, open, and slowly falling into the reservoir. The poor substrate may contribute to the poor hatching success at this site.

Mainland nesting sites were more productive with the north shore and creek areas being the most successful. North shore nests were well spaced in short grass and close to water while those along the creek banks were in grass and "weedy" vegetation. Two nests on the creek were in view of each other but separated by the creek. The

six nests in these areas successfully hatched 100% of their eggs. The south shore was also highly productive with eight well spaced nests located on the high banks. The sites provided good visibility for the geese with adequate vegetation to conceal the nests and to provide a buffer between nesting pairs. One nest was destroyed at this location but the overall hatching success, 72.7%, was good.

The picnic area on the north shore had only one nest which hatched five of six eggs (83.8%) as compared to two nests which hatched seven of eight eggs (87.5%) in 1978. The single nest was located in a tree plantation on a bank above the water.

Peninsula C was too wet for nesting in 1979; four nests were present in the area in 1978, two of which were successful.

Peninsula D was also less productive in 1979 as it held only one nest which hatched seven of 11 eggs (63.6%). In 1978 the area had supported two nests which hatched all of 10 eggs.

The production of goslings increased slightly over 1978. In 1979, 117 eggs produced 52 goslings, a success rate of 44.4%, as compared to 1978 in which 126 eggs produced about 45 goslings, a success rate of only 35.7%. The early loss of hatchlings appears about equal in the two years; 39% (52 goslings from 85 hatched eggs) in 1979 as compared to 43% (45 goslings from 79 hatched eggs) in 1978.

### Summary and Conclusions

In spite of the late spring, Canada Geese at the Condie Nature Refuge had good nesting success in 1979. There



*Canada Geese in nest*

Gary W. Seib



*Canada Goose with young*

*Gary W. Seib*

were fewer nests in 1979 than in 1978 but the average clutch size, percentage of successful nests, and percentage of eggs hatched were higher than in 1978 and consequently the number of goslings produced increased slightly. The nesting and hatching success at Condie in 1979 compares favourably with other prairie nesting areas.<sup>1</sup>

The shoreline areas of the waterfowl sanctuary appear to be the most important nesting areas while the islands, due to their substrate and small size, produce few successful nests. If interpretive and recreational development

at Condie are at any time expanded to include such a facility as a perimeter trail, access to the shoreline areas should be restricted during the April-to-June nesting period.

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<sup>1</sup>MARSHALL, A. 1979. A study of nesting Canada Geese at Condie Nature Refuge, Saskatchewan. *Blue Jay* 37(3):158-162.