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Experimental Gull Control:

Ile Aux Canes, Southern Grey Islands 1989

R. Ian Goudie
1 November 1989
Revised: 1 March 1990

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CANADIAN WILDLIFE SERVICE
ATLANTIC REGION

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Introduction

The gull management plan for the Canadian Wildlife Service, Atlantic Region, 1989 set the stage for localized control of gulls where significant impacts to more specialized migratory birds were evident. Productivity of eider ducks (Somateria mollissima) is seriously reduced through predation by Larus spp. gulls. In Newfoundland, depredation of eggs and young of eiders is of serious concern because eider breeding numbers are at low levels compared to historic numbers. Gull populations have increased dramatically over the past century, and impact of predation on eiders is most severe. A study on Ile Aux Canes, S. Grey Island in 1986 indicated only about 35% of the eggs hatched successfully (Goudie, CWS internal rep.)

In 1989, the Canadian Wildlife Service initiated an experimental control of Herring Gulls (L. argentatus) and Great Black-backed Gulls (L. marinus) on Ile Aux Canes (Green Island near southern Green Island. This colony of approximately 400 nesting pairs of eiders is the largest in insular Newfoundland.

Objectives of the study were:

1. To assess effectiveness of gull toxicant 1339 in removing resident breeding gulls.
2. Determine hatching success of eiders in the absence of resident breeding gulls.
3. Study the rate of immigration and recolonization of the site by other gulls.
4. Monitor growth of the eider colony following gull removal.

Methods

Initially, necessary permits to undertake an experimental gull cull using gull toxicant 1339 were obtained from Agriculture Canada, Newfoundland Department of Environment and Canadian Wildlife Service.

Under the guidance of Thomas Goettel, gull control specialist of the United States Fish and Wildlife Service, the Gull Toxicant 1339 was prepared as baits by dissolving 6g of active ingredient in 454g of melted margarine. The mixture was allowed to cool, and was then liberally spread on sliced bread (~15g per slice). Each slice with toxic margarine was covered with a plain slice to form a "sandwich" which was cut into 9 equal cubes. Baits were stored in freezers or coolers in dark plastic bags for future use.

Baits were delivered by hand with 2 to 3 baits per gull nest per treatment. We attempted 2 treatments within 48 hours. Gull corpses were, for the most part left at the site of death. Twenty-six eider duck nests were monitored for hatching success following the cull of breeding gulls. We assessed hatching success by comparing hatched eggs, as evidenced by intact membranes, to initial clutch size for designated nests. These data were compared to 'control' data collected in 1986. In an effort to reduce observer effects, we covered all encountered eider clutches with nest down.

Results

(i) Gull Mortality

Timing of baitings and observed corpses are presented in Table 1. Only the west side, i.e., 494 nests, were successfully rebaited about 38 hr. following the first baiting. We ran short of bait supplies as a result of basing number of probable gull nests on our 1986 estimate of 385.

We noted that the bulk of mortality occurred between 24 hr. and 48 hr. after ingestion. Consequently monitoring results had to be adjusted for the east side and rebaiting of west side because data were collected 36 hr. and 24 hr., respectively, after baiting. Inclement weather prevented further assessment of gull mortality on Ile aux Canes (Table 1).

Table 1. Timing of baitings and census of gull corpses at Ile Aux Caines. S. Grey Is. 8-10 June 1989.

Date	Time	No. of bait treatments	Gull Corpses HG	Gull Corpses GBBG	Comments
8 June 89	1700-2000	563 (west side)	-	-	
9 June 89	1100-1500 (~20 hr.)	485 (east side)	2(1 incapacitated		obs. 6 regurgitated baits
10 June 89	0915-1050 (~38 hr.)	494 (west side rebaits)	113	13	most corpses at nest site but ~5 obs. in adj. water ~8 regurgitated baits obs.
			78	5	corpses at roost site on S. Grey Is. proper
11 June 89	0900-0900 (~36 hr.)	w. side	78	16	
		e. side	102	70	
Total		1048 with w. side only rebaited (494 rebaits)	373	104	
Adjusted Total[1/]			710	200	

1/ Corpse count adjusted by (- 60%) for further deaths after 36 hr. for the east side and by 50% of 494 rebaits on the west side.

(ii) Eider nesting success

A total of 403 eider nests were censused on Ile aux Canes from 8-11 June 1989.

Our visitations to the island were of greater frequency and duration than is usually undertaken for eider nest censuses. We were aware of an apparent high rate of nest depredation by gulls during baitings due to our presence despite precautions of covering clutches with nest down. Initial results of the removal of the estimated 910 gulls appeared promising because monitored nests experienced a 92% hatching success (Table 2) in comparison to only 35% reported for the same site in 1986 (Goudie 1986, C.W.S. Int. Rep.).

We noted that 2 of 7 unaccounted eggs were addled and the remaining 5 were assumed to be the results of gull depredation.

Discussion:

Control of predators in efforts to increase populations of game species or specialized wildlife is a controversial subject. In the Newfoundland area, Herring Gulls and Greater Black-backed Gulls have increased exponentially over the present century, enhanced through the availability of food in the form of fish wastes, garbage and other by-products of human society. During the same time, Common Eider Duck populations have reached historical low levels, largely because of over-exploitation and

Table 2. Nesting success[1] of eider ducks following gull removals at Ile aux Canes, S. Grey Island 1989

Initial clutch size 11 June 1989	# of eggs hatched 8 July 1989	Other
4	3	
4	4	
5	5	
4	3	
4	4	
4	3	
3	2	
3	3	
4	4	
4	3	
4	4	
3	3	
5	4	
6	6	
2	2	
3	2	
4	3	
2	2	
4	3	
2	2	
3	3	
6	4	
5	3	2 addled
2	1	
4	1	
5	3	
87	80	

[1] Note that impacts of 10 June 1989 rebaits not into effect at time of initial nest assessment.

persecution by man, but are starting to recover. High rates of predation on eggs and ducklings by large gulls can limit the rate of growth and recovery of eider populations (Mendelhall and Milne, 1985). Gull control at strategic local eider colonies in coastal Newfoundland is favored as a management tool to improve stocks there (Newfoundland and Labrador Eider Management Plan, 1990).

There is considerable debate as to the real effects of gulls on eider versus enhanced predator efficiency in the presence of man, i.e., "observer effects." For example, Gotmark and Ahlund 1984, demonstrated a 10% higher rate of egg predation on islands disturbed more frequently by man although this was not supported statistically. Ahlund and Gotmark 1989 determined that successful depredation of eider ducklings increased up to 300% in the presence of motor boat activity within 100 m of creches. In general, it seems logical to expect increase rates of predation when human disturbance is significant.

Our field observations indicated that a greater proportion of clutches were destroyed following our activity on colonies than was evident on our first arrival. Repeated visits would have greater impact in the short term. Enhanced gull predation following human disturbance is due to hen eiders temporarily leaving the nest site which normally is guarded and incubated continually for the 26 day incubation period except for short

absences to drink and preen (Palmer 1976). Gulls return almost immediately following disturbance whereas eider hens may remain offshore for an hour or more. Exposed clutches are very vulnerable to depredation although a covering of nest down can reduce such effects.

Coastal areas used by eider ducks in Newfoundland are used extensively by seasonal inshore fishermen. Disturbance to eider colonies is often considerable and difficult or impossible to monitor and control. Human disturbance may be regarded as part of the environment within which eider ducks must breed. Measures to reduce egg predation by providing nest shelters appears to be working well but there are no apparent alternatives to reducing depredation of eider ducklings.

Our underestimate of the population of breeding gulls on Ile aux Canes influenced a less than effective treatment of nests with poison baits, i.e., the east side could not be rebaited. Ideally nests should be treated at 48 hrs intervals yearly. This should continue over a 2-3 year period (T. Goettel, Pers. Comm.) to ensure a 90% or greater removal of breeding gulls. At least one more year of experimental gull removal will be necessary to ensure the successful completion of the Ile aux Canes study. This project resulted in the removal of approximately 40% of the breeding populations, assuming all mortalities were breeding adults. In the short term, gull control measures may effect a

low rate of productivity in breeding eiders because of observer disturbance. However, longer term increase in productivity should vastly outweigh this drawback. Earlier treatments for Ile aux Canes prior to eider clutch initiation are recommended for 1990.

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