
RESULTS OF SNOW GOOSE SURVEYS AND A PILOT STUDY TO BAND SNOW GEESE NEAR PT. LAY, KASEGALUK LAGOON, ALASKA

FINAL FIELD REPORT

Prepared for

ConocoPhillips Alaska, Inc.

P.O. Box 100360

Anchorage, AK 99510-0360

by

Robert J. Ritchie

and

John Rose

ABR, Inc.—Environmental Research & Services

P.O. Box 80410

Fairbanks, AK 99708-0410

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INTRODUCTION

Increasing numbers of Snow Geese in northern Alaska are fairly recent phenomena (see Ritchie et al. 2000, Ritchie et al. 2008). Colonies have been known to occur on a number of river deltas for decades (e.g., Ikpikpuk River, Kukpowruk River; Ritchie et al. 2000), but in recent history have grown substantially only in the last decade. Because in some Arctic areas an overabundance of Snow Geese has caused extensive damage to habitats used by geese and other wildlife (e.g., Batt 1997), closer monitoring of Snow Goose populations on the North Slope of Alaska is important, as is monitoring of the impacts of this much larger population of local Snow Geese on coastal habitats and other bird species.

Colony visits, brood-rearing surveys, and banding of Snow Geese all have contributed to past monitoring efforts in sites along the Arctic Coast between Kasegaluk Lagoon and Prudhoe Bay (e.g., Johnson 2000, Noel et al. 2001, Ritchie et al. 2008). Much of the recent monitoring

efforts have focused primarily on sites east of Barrow, and these investigations have revealed substantial increases in local population of Snow Geese on the Ikpikpuk River, as well as substantial growth in small colonies on the Colville River delta and in the Howe Island colony on the Sagavanirktok River delta. Less effort has been made to monitor a long-known colony, west of Barrow on Kukpowruk River delta near Point Lay, within Kasegaluk Lagoon, but recent observations suggested that this colony may have grown more than an order of magnitude since monitoring began there in 1992 (R. Suydam, NSB, pers. comm.; Ritchie et al. 2000). In 2008, CPAI provided support for additional monitoring efforts of the Kukpowruk River breeding population. We report here on those efforts during the summer of 2008.

The primary goal of this study was to better understand growth of the Snow Goose colony near Pt. Lay and its interrelationships among other Snow Goose colonies. Specific objectives included

- 1) Determine the population size at brood-rearing by conducting a brood-rearing survey of the Kasegaluk Lagoon region near Pt. Lay; and
- 2) Capture and band Snow Geese at Kasegaluk Lagoon, near Point Lay, in August 2008 so that band returns/resightings might elucidate relationships between the Kukpowruk and other breeding populations of Snow Geese in the region.

In addition, the North Slope Borough conducted a colony visit in July to determine the number and fate of nests at the traditional colony near the mouth of the Kukpowruk River (R. Suydam, NSB, pers. comm.). Combined with other studies in the summer of 2008, research activities at Pt. Lay and the Kukpowruk River Delta offered some new insights into the growing Snow Goose Population in northern Alaska.

STUDY AREA

The general study area extended approximately 125 km from Icy Cape to the southern end of the Kasegaluk Lagoon 10 km south of Kuchaurak Creek (Figure 1). It included the deltas of 3 primary drainages: Kukpowruk, Kokolik, and Utokok rivers. More specifically, primary surveys and banding activities focused on approximately 40 km of coastal tundra in the southern half of

Kasegaluk Lagoon from Pt. Lay to Naokek Pt (Figure 1), including the Epizetka-Kukpowruk river delta where nesting by Snow Geese has been recorded (Ritchie et al. 2009).

Kasegaluk Lagoon is situated along the Chukchi Sea coast. Its outer or marine limits are a series of barrier islands and shoals protecting an inner estuary and the mainland coast (Figure 2). Prominent habitats on the mainland consist of coastal tundra dominated by sedge communities, ponds, and small creeks, all of which are common features of the Arctic Coast Plain Ecoregion (Gallant et al. 1995). Most of the mainland coast is backed by low tundra bluffs (Johnson et al. 1993), limiting valuable salt marsh grazing pastures to small wetlands near creek mouths. The Epizetka-Kukpowruk river delta itself is characterized by myriad small islands and expanses of shallow water which, incidentally, limit boat travel in primary brood-rearing areas of the Snow Geese.

METHODS

We conducted aerial surveys to locate and enumerate brood-rearing groups of Snow Geese on 26, 27, and 30 July. A Cessna 185 with pilot and one observer flew along the mainland coast within about 2 km of the shoreline and at an altitude of ~100 m. As each group of Snow Geese was located, the aircraft circled to allow the observer to estimate the number of adults and goslings in the group. Binoculars (8 × 32) were used to help with counts. The first survey (26 July) was conducted from the mouth of the Kokolik River (near Pt Lay) south to Naokek Point, while the second survey (27 July) was conducted from the mouth of the Kokolik River to the southern extent of Kasegaluk Lagoon, repeating the area covered on the first survey and extending the survey area farther south. The third survey (30 July) covered the northern portion of the study area or the region from Pt. Lay to Icy Cape.

We originally proposed to use an R-44 helicopter to herd geese for banding and proposed to follow techniques as described in similar banding efforts conducted on the Ikpikpuk River delta (Ritchie et al. 2008). However, local village council members, concerned that helicopters might disturb caribou and consequently influence subsistence hunting near the village, prohibited helicopter use near the village (R. Suydam, NSB, pers. comm.). Although this was unexpected, we adapted to the situation and conducted a reconnaissance of available resources, ultimately

assessing the use of both 4-wheelers and boats to capture Snow Geese in the area. The following report provides information on our aerial surveys and our efforts to capture Snow Geese.

RESULTS AND DISCUSSION

BROOD-REARING SURVEYS

Brood-rearing surveys were conducted along the inner shorelines of Kasegaluk Lagoon on 26, 27, and 30 July (Appendix 1). Weather conditions were excellent for observations on 26 and 27 July. However, precipitation, poor visibility, and strong winds (>35 knots) prevented a thorough survey of the coastline between Icy Cape and the northern end of Kasegaluk Lagoon. Instead, only that portion of the Lagoon from Pt. Lay to Icy Cape was searched adequately.

South of Pt. Lay, on 27 July, approximately 2,200 Snow Geese (1,037 adults/1,162 goslings) were located in 14 groups between the mouth of the Kokolik River and just south of Naokek Point in Kasegaluk Lagoon (Figure 3, Appendix 1). The majority of these birds (83%) were in lake and wetland habitats within the greater Epizetka-Kukpowruk River delta, the primary area used by nesting Snow Geese. No Snow Geese were recorded on that date south of VABM Willow (106) or along the outer barrier islands. Although 27% fewer birds were recorded in approximately the same area on 26 July, we believe that survey underestimated abundance and we assume that we missed some groups on that date. We believe the survey results for 27 July more accurately reflect the population of brood-rearing Snow Geese in Kasegaluk Lagoon, south of Pt. Lay.

North of Pt. Lay, on 30 July, 2 groups totaling 115 Snow Geese (55 adults/60 goslings) were recorded (Figure 3, Appendix 1). We consider this a minimal estimate of Snow Geese in the area because heavy precipitation and winds exceeding 25 knots limited survey coverage. East of Icy Cape, low ceilings prevented any survey efforts.

Combining group sizes for 27 July (south of Pt. Lay) and 30 July (north of Pt. Lay), at least 2,315 Snow Geese summered in Kasegaluk Lagoon in 2008. Assuming that all of the 1,092 adults were breeders (possibly a slight over-estimate), nearly 550 pairs of Snow Geese may have nested near Pt. Lay in 2008.

Nesting and brood-rearing Snow Geese have been recorded in the southern reaches of Kasegaluk Lagoon, including the mouth of the Kukpowruk River, since the late 1980s (Johnson et al. 1993; Ritchie et al. 2000). Surveys for brood-rearing geese conducted between 1992 and 1995 revealed that Snow Geese used similar areas within the southern reaches of Kasegaluk Lagoon near the Kukpowruk River mouth (Ritchie and Burgess 1992, 1993; Ritchie and Flint 1994; Ritchie 1996). In addition, Snow Geese have been recorded at the mouth of the Utokok River near where the 2 northern-most brood-rearing groups were recorded this year. Snow Geese also have been recorded between Wainwright and Icy Cape (Ritchie and Burgess 1993; Johnson et al. 1993; Ritchie et al. 2000), but poor weather prevented surveys in that area this year.

BANDING EFFORTS

We originally had scheduled an R-44 helicopter to meet us in Pt. Lay and help us capture Snow Geese as described in Ritchie et al. (2008). However, Robert Suydam (Wildlife Biologist, NSB) met with Pt. Lay Village Council members concerned about helicopter disturbance of wildlife and was told that our helicopter should not be used for goose capture. Instead we visited Pt. Lay between 26 and 30 July to assess the potential for using local boat and 4-wheeler resources to help locate and capture Snow Geese. On 26 July, Robert Suydam and Bob Ritchie used 4-wheelers to access a small, unnamed creek ~ 5 km south of Pt. Lay, where Snow Goose broods had been reported (~180 earlier that day). We followed existing ATV trails to the mouth of the creek and walked upriver approximately 2.5 km before observing the geese. At this site, we determined that a contingent of several 4-wheelers could approach the birds from upriver and, with coordinated effort, move them toward the coast, where additional personnel (with or without 4-wheelers) could assist to corral the birds and move them into pens. However, we postponed trying this strategy, instead opting to arrange for boat support to access larger groups farther south, at the mouth of the Kukpowruk River delta.

On 27 July we mobilized 2 boats to capture a large brood-rearing group (<350 birds) on an island in the Epizetka River delta. The boats (14 and 16-ft Lund skiffs with outboards) were piloted by Jim Takruk, a Pt. Lay resident, and by a seasonal technician with the USFWS. In rapidly deteriorating conditions (rain and high winds [>25 knots ESE] turning into heavy rain and stronger winds [>35 knots ESE]), we approached the island in the 2 boats, attempting to get boats and people on both sides of the island before the geese could escape. We failed at

corralling the geese primarily because shallow water prevented quick access to the eastern channel. Although the geese held fast on the island for a few minutes, the gap between 2 team members on the eastern side of the island was sufficient for the geese to move quickly to the southern shoreline and evade capture.

Stormy weather prevented further capture attempts until 28 July, but unfortunately local boats, pilots, and other personnel from the village were not available on that day and no brood-rearing Snow Geese were located close enough to the village to mount a capture effort. We abandoned efforts to capture Snow Geese after 28 July.

BANDING ASSESSMENT AND RECOMMENDATIONS

We were prepared to be flexible and recognize the importance of working with local assistance and with sensitivity to local interests. Although we were unsuccessful at capturing geese, we familiarized ourselves with the terrain, interacted locally to familiarize the people with our project and to set up contacts for future assistance, and learned enough about the area and issues to be optimistic about the success of potential future efforts. During the reconnaissance, we assessed 2 potential banding situations and have developed preliminary strategies for future Snow Goose banding efforts.

Our observations suggest that, although 4-wheelers may prove successful in capturing geese, the risks and tundra impacts make their use impractical for our purposes. Although the trail system is well-developed in the area, a banding effort would require that 4-wheelers leave the existing ATV trail system, potentially creating new trails and damaging brood-rearing habitat. Except for locating personnel and equipment near existing ATV trails, we do not recommend the use of ATVs for future banding efforts.

On the other hand, with an ample crew (8 persons) and fixed-wing support to identify goose group locations before setting up capture pens, boats could be used to deploy equipment and personnel for banding geese at a few sites in the Kukpowruk River delta. This technique would be more time-consuming than using a helicopter and only those brood-rearing groups in appropriate terrain/locations would be accessible. The rate of successful captures using boats in the Kukpowruk River delta would probably be lower than that using a helicopter due to low water conditions surrounding most brood-rearing habitats (Figure 4). Success with boats also

would require good communications among boat drivers and team members, underlining the importance of familiarizing the project to the local community. Another concern and risk with the strategy of using boat support to capture geese is that, in most locations at which geese were observed in 2008, the onset of boat traffic probably would cause brood-rearing geese to move inland into terrain that would prevent immediate opportunities to corral them. Despite these uncertainties, if helicopter support is not permitted, boats are probably the only other option for capturing Snow Geese.

We do remain convinced that banding efforts using helicopter support are the most practical method of conducting banding efforts in the Kukpowruk River delta. In the event that caribou are absent from the larger area surrounding targeted brood-rearing areas, we recommend that NSB approach the Village of Pt. Lay again in 2009 to seek their approval to use helicopters for a day or 2 of effort to capture and band geese. Local boats could assist in that effort and total air time could potentially be reduced by relying on boats as much as possible to set up pens and deploy personnel, strategically reserving the helicopter for use in directly corralling the birds.

On 29 July, Bob Ritchie spoke to members of the Pt. Lay Village Council and provided some details on the use of a small helicopter to capture brood-rearing geese for banding. He emphasized the lower noise disturbance from this helicopter and the limited amount of air-time that would be necessary to capture brood-rearing geese. He outlined a strategy similar to that proposed in the previous paragraph, employing local pilots and boats to move personnel and banding equipment to possible capture sites and thereby also allowing opportunity for local people to be involved in capture and banding activities. He also indicated that banding efforts could be curtailed if caribou were found to be in the area. To assist in their decision, we have created a short video showing a banding effort using the R-44 in action and will send it to the Pt. Lay Village Council if opportunities for banding should arise again. We hope that this provides a good example of the relatively low noise and visual disturbances of the aircraft.

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the Village of Pt. Lay. He also participated in banding efforts. Bill Tracey, Chief of Pt. Lay Fire Department, allowed us to stay at the Fire Hall and offered other logistical support. A number of local villagers helped with their regional and boating expertise, advice and/or lease of their equipment, including Leo Ferrera, Jim Tazruk, and Jack Shaeffer. Sandy Hamilton, Alaska Arctic Air, helped move our crew between Pt. Lay and Barrow, as well as assisting with efforts to capture geese in the area. Finally, 2 USGS technicians, Anthony Pegano and Anna Mangan, helped us with one boat-assisted drive. Their supervisor, Dan Rissolo, USGS, kindly lent them from a day of loon-behavior studies to assist us.

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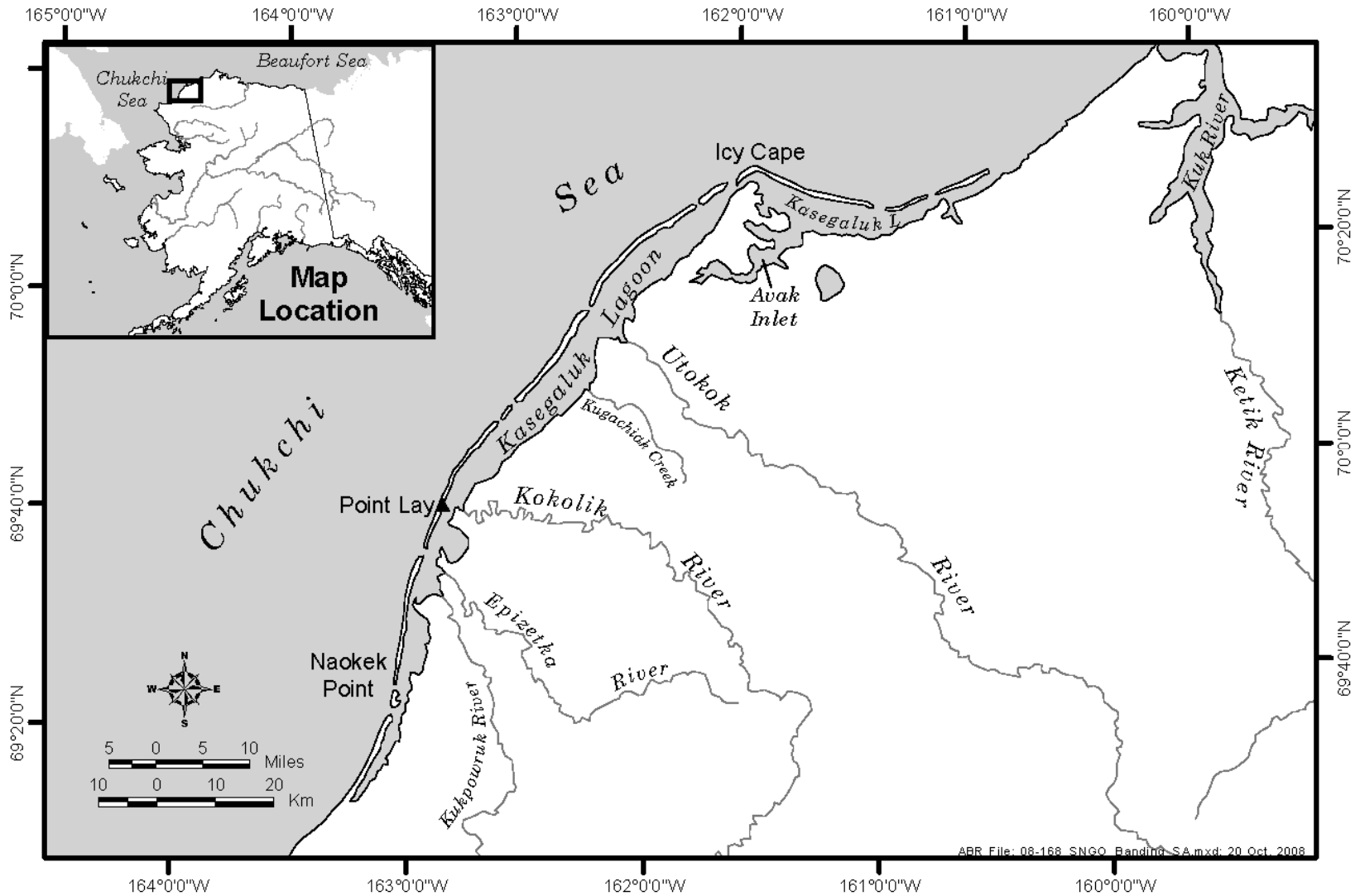


Figure 1. Study area for surveys of brood-rearing Snow Geese near Point Lay, Kasegaluk Lagoon, Alaska, 2008.



Figure 2. Aerial view of Kasegaluk Lagoon, looking northeast, July 2008.

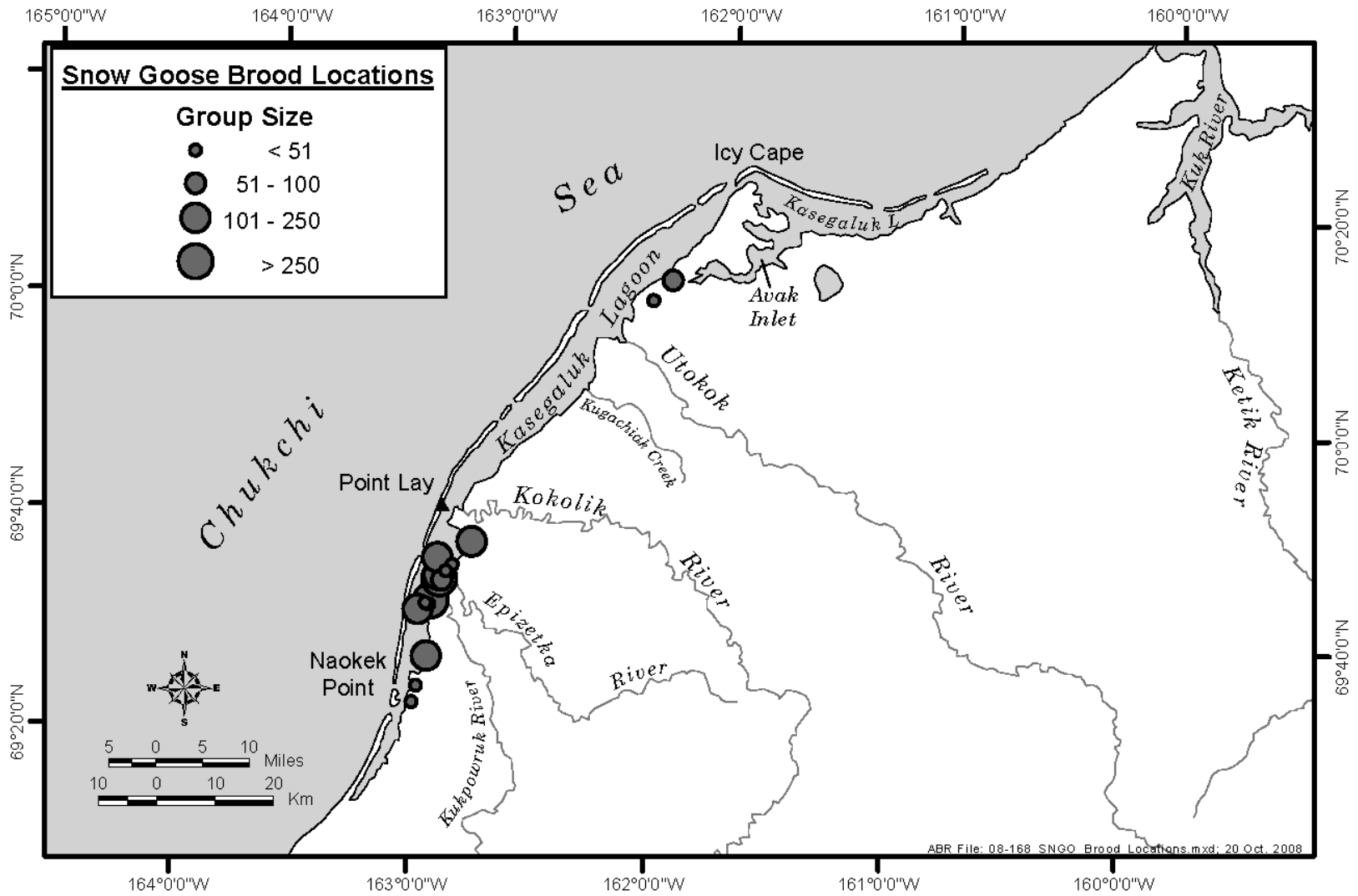


Figure 3. Location of Snow Goose brood-rearing groups near Point Lay, Kasegaluk Lagoon, Alaska, 27–30 July 2008.



Figure 4. Aerial view of shallow water conditions in the Kukpowruk River delta, July 2008.

Appendix 1.

Snow Goose brood-rearing groups determined from aerial surveys,
Kasegaluk Lagoon, July 2008.

Date	Survey Area	Adults	Goslings	Total
27-Jul-08	Pt. Lay-Naokek	90	90	180
27-Jul-08	Pt. Lay-Naokek	20	20	40
27-Jul-08	Pt. Lay-Naokek	4	4	8
27-Jul-08	Pt. Lay-Naokek	60	70	130
27-Jul-08	Pt. Lay-Naokek	80	90	170
27-Jul-08	Pt. Lay-Naokek	50	50	100
27-Jul-08	Pt. Lay-Naokek	220	250	470
27-Jul-08	Pt. Lay-Naokek	275	325	600
27-Jul-08	Pt. Lay-Naokek	20	20	40
27-Jul-08	Pt. Lay-Naokek	7	8	15
27-Jul-08	Pt. Lay-Naokek	120	130	250
27-Jul-08	Pt. Lay-Naokek	70	75	145
27-Jul-08	Pt. Lay-Naokek	15	20	35
27-Jul-08	Pt. Lay-Naokek	6	10	16
26-Jul-08	Kokolik-Sitkok	40	40	80
26-Jul-08	Kokolik-Sitkok	100	120	220
26-Jul-08	Kokolik-Sitkok	20	20	40
26-Jul-08	Kokolik-Sitkok	300	250	550
26-Jul-08	Kokolik-Sitkok	50	50	100
26-Jul-08	Kokolik-Sitkok	150	180	330
26-Jul-08	Kokolik-Sitkok	10	10	20
26-Jul-08	Kokolik-Sitkok	30	30	60
26-Jul-08	Kokolik-Sitkok	20	20	40
26-Jul-08	Kokolik-Sitkok	80	90	170
30-Jul-08	Pt.Lay-Icy Cape	25	25	50
30-Jul-08	Pt.Lay-Icy Cape	30	35	65