Coastal Marine Institute

University of Alaska

Pre-migratory Ecology and Physiology of Shorebirds Staging on Alaska's North Slope

Abby N. Powell
Principal Investigator

Additional Authors:
Audrey R. Taylor
Richard B. Lanctot

Final Report
OCS Study MMS 2009-034

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University of Alaska Fairbanks

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Contact information

email: skwalker@alaska.edu
phone: 907.474.7208
fax: 907.474.7204
Coastal Marine Institute
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
P. O. Box 757220
Fairbanks, AK 99775-7220

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ABSTRACT

Preliminary work conducted in the 1970's in Barrow, Alaska, indicated that arctic littoral habitats were of critical importance for most arctic-breeding shorebirds during the staging period (prior to southbound migration to wintering areas). However, relatively little recent, quantitative information exists on pre-migratory shorebird use of coastal areas on Alaska's North Slope or what factors may influence site use. This information is critical given increased levels of human activity and development near North Slope coastline. This project was initiated in 2004 to gain a better understanding of the overall ecology of postbreeding shorebirds during the staging period, and to inform future assessments of how future industrial and human activity across the North Slope may affect shorebird populations.

During the summers of 2005-2007, we conducted aerial surveys for shorebird abundance and distribution along the North Slope coast from the southwest end of Kasegaluk Lagoon on the Chukchi Sea to Demarcation Bay in the Beaufort Sea, at the Alaska/Canada border. Our objective for this portion of our research was to assess whether there are persistent concentration areas for shorebirds on the North Slope that may be considered important staging sites. We also collected data on staging phenology, community characteristics, and habitat use in 2005 and 2006 by surveying transects at six ground camps: Kasegaluk Lagoon, Peard Bay, Pt. Barrow/Elson Lagoon, Colville River Delta, Sagavanirktok River Delta, and Okpilak River Delta. We captured and radio-equipped shorebirds at each of these ground camps to examine the length of time individual birds remain at staging sites after capture (time to departure) and the large-scale movement patterns exhibited by shorebirds once they leave their capture site. We also sampled the birds we captured for triglyceride levels (an index of fattening rate) and baseline/maximal corticosterone levels (indices of an individual's body condition/ability to respond to a stressful situation) to assess whether either of these physiological parameters could be used as a measure of staging site quality.

We found concentrations of staging shorebirds that persisted within and between years at Peard Bay, Pt. Barrow/Elson Lagoon, Cape Simpson, between Smith Bay and Cape Halkett (including Pitt Point/Pogik Bay), and at the Jago and Kongakut River deltas in the eastern Beaufort Sea. River deltas on the Beaufort Sea coast did not attract larger numbers of shorebirds than did surrounding coastal areas despite our expectations. We determined that aerial surveys would be most reliable for assessing shorebird abundance and distribution if conducted frequently within a single year, repeated across multiple years, and combined with ground surveys for species composition and habitat use. Ground surveys in particular may increase our understanding of detectability differences for various species and habitats.

Using data obtained from our six ground camps across the North Slope, we determined there were species-specific differences in staging phenology, habitat use, time to departure, and movement patterns. Semipalmated sandpipers exhibited the earliest arrival and departure dates from North Slope staging areas, and there was a west-to-east trend in dates of peak abundance of this species. Red and red-necked phalaropes had intermediate arrival and departure dates, and their dates of peak abundance were highly variable across our camps. Western sandpipers arrived at staging areas later than semipalmated sandpipers and departed later from the North Slope. Dunlin were present throughout most of the staging period at most sites. In three of the

most common species we studied (semipalmated sandpiper, red phalarope, and red-necked phalarope); adults left staging areas earlier than juvenile birds. The shorebird community was more even (evenness E) and diverse (Shannon Weiner *H'*) along the Beaufort Sea versus the Chukchi Sea, and in 2005 versus 2006. In general, black-bellied plovers, red phalaropes, red-necked phalaropes, ruddy turnstones, and sanderlings were found in gravel beach habitat, whereas dunlin and semipalmated sandpipers used mudflats. American golden-plovers, long-billed dowitchers, pectoral sandpipers, and western sandpipers used salt marshes. Stilt sandpipers were found in pond edge habitat, as were several species that were also found commonly in other habitats: long-billed dowitchers, pectoral sandpipers, red-necked phalaropes, and western sandpipers. We examined time to departure for radio-equipped shorebirds of five species, using a Cormack-Jolly-Seber mark-recapture model that allowed survival to vary by species. Semipalmated sandpipers exhibited the shortest time to departure (4.3 days); both phalarope species combined had similar but slightly longer time to departure (4.5 days); western sandpipers had intermediately long time to departure (7.9 days); dunlin exhibited the longest time to departure (12.9 days). Movement patterns of dunlin, red phalaropes, and red-necked phalaropes were variable and reflected major differences in individuals' movement directions during the staging period. Semipalmated sandpipers moved mainly west to east, and many were detected on or near the Canning River Delta in the eastern Beaufort Sea, suggesting that this species may use the Canning River as a migration corridor south through the Brooks Range.

We examined blood triglyceride and corticosterone levels for semipalmated sandpipers, dunlin, and western sandpipers only. Semipalmated sandpipers had significantly higher triglyceride levels than dunlin in both years. Western sandpipers had intermediate triglyceride levels in 2005 but had similar levels as semipalmated sandpipers in 2006. Semipalmated sandpipers captured at Pt. Barrow/Elson Lagoon had the highest triglyceride levels when individuals of this species were compared across our six ground camps, suggesting that site quality in terms of fattening rate was highest at this camp. Comparison of corticosterone levels across the six ground camps for semipalmated sandpipers was equivocal, in that baseline and maximal levels did not show the same trends among camps. However, semipalmated sandpipers captured at Pt. Barrow/Elson Lagoon had high maximal corticosterone levels, indicating that birds using this site are more capable of responding physiologically to a stressful event. We suggest that triglyceride levels may be more useful than corticosterone levels as a physiological index of site quality.

INTRODUCTION

At least twenty species of shorebirds stage along the littoral zones of Alaska's North Slope prior to fall migration (Connors *et al.* 1984), where they acquire fat reserves necessary for long distance flight. Although there is a considerable body of literature on stopover ecology of shorebirds during migration (e.g., Holmgren *et al.* 1993, Skagen and Knopf 1994, Lyons and Haig 1995), less research has been conducted on shorebirds staging prior to migration. Numerous past studies have addressed shorebird use of North Slope littoral habitats, but many of these are relatively dated, somewhat anecdotal in nature, and focused on a single or few study areas (Johnson 1978, Spindler 1978, Lehnhausen and Quinlan 1981, Gill *et al.* 1985, Andres 1989, Johnson *et al.* 1993). In addition, shorebirds have often been surveyed ancillary to larger, more obvious species (such as waterfowl); few studies have been designed specifically to examine the distribution of small shorebird species that are difficult to identify. Much of what is known regarding North Slope staging shorebird populations resulted from research done during the Outer Continental Shelf Environmental Assessment Program in the mid-1970's (Connors *et al.* 1979, 1984). These studies indicated that shorebirds changed habitat use from upland tundra breeding sites to coastal littoral staging areas as the summer progressed. Postbreeding densities of shorebirds in littoral habitats were higher than breeding densities in adjacent tundra habitats. These results underscore the importance of coastal littoral zones in the life cycles of migratory shorebirds in Alaska.

However, many knowledge gaps exist regarding staging shorebird ecology on the North Slope. First, we lack information on regional-scale abundance, distribution and species composition of staging shorebirds. Johnson *et al.* (2007) recently reported on the distribution of breeding shorebird species across the entire Arctic Coastal Plain of Alaska, but similar data are lacking for staging shorebirds in coastal areas. This data gap makes it difficult to pinpoint areas that host large numbers of birds during the postbreeding period and therefore are highly important to staging shorebirds. Also, because ecological change is likely to result in shifts in the distribution and range of species and communities (McCarty 2001), predicting the future distributions of Arctic flora and fauna in response to environmental change requires knowledge of present distributions and processes that affect them. Where individual species patterns are poorly known, a community-level assessment of diversity and abundance can aid in setting conservation priorities. Additionally, entire assemblages of species in their historic proportions may be conservation targets in their own right (Stein and Davis 2000). Thus knowledge of large-scale patterns of shorebird distribution, abundance, and species composition across the North Slope would be valuable for setting management objectives to maintain current population sizes or species diversity.

Second, although previous studies have reported on the phenology of staging shorebirds at various locations on the North Slope, there has been little comparative work done that would shed light on how timing of arrival after breeding, dates of peak use, length of stay at staging areas, and/or movement patterns change among species at different sites. Within a community of organisms, even where all members appear to be using the same sites or habitats, similar species may use the overall landscape at different temporal scales (Naugle *et al.* 1999). Such variation in phenology is important for understanding how highly mobile birds use multiple sites within a region, and whether this connectivity could be impacted by disturbance. Because movements of individuals within or between seasons may link habitats at a regional level (Plissner *et al.* 2000), landscape connectivity as defined by timing of use and movement patterns is also an important consideration in the development of area-wide conservation strategies (Haig *et al.* 1998). Thus it is critical that species- and site-specific phenology and movements are compared and contrasted prior to setting management priorities or indentifying important conservation sites. Additionally, accelerated rates of warming in the Arctic may change the phenology of shorebird staging on the North Slope more than any other aspect of postbreeding ecology. It is unclear whether to expect the length of the staging period to expand or contract as a result of predicted changes in Arctic ecosystems (Callaghan *et al.* 2005, Sereze and Francis 2006), or whether initiation and termination dates will change in concert while the overall length remains the same. If snowmelt in the Arctic is accelerated and breeding begins earlier, fledging of chicks and subsequent movement of shorebirds to coastal areas may begin earlier. Warmer summer temperatures could push the timing of insect emergence earlier, leading to an earlier pulse of invertebrate abundance at coastal staging areas. If food availability then declines, staging opportunities may terminate earlier (Tulp and Schekkerman 2008). Alternatively, a protracted summer season with longer periods of insect activity and abundance may mean that shorebirds are under fewer climatic constraints to migrate quickly out of the Arctic at the end of the breeding season, leading to a longer staging period. There is some evidence to suggest that Arctic-breeding shorebirds are capable of replacing clutches lost early in incubation (Naves *et al.* 2008), and this capability may increase as climate change results in more favorable weather for longer periods during the breeding season (Callaghan *et al.* 2005). Large-scale movements of birds to coastal staging areas could be delayed if more individuals replace lost clutches (or attempt second clutches) and chicks fledge later in the breeding season (Jenni and Kery 2003). Current data on pre-migratory staging phenology may be compared to data collected historically and in the future to examine the impact of climate change on timing of life history events.

While large-scale patterns of abundance and distribution of staging shorebirds may lead us to a better understanding of what sites are important during the postbreeding period, this approach can be expensive and time-consuming since surveys over a large area of the North Slope are required, and surveys by themselves do not explain why shorebirds occur where they do. It is desirable to have a metric for determining site quality from the perspective of a staging shorebird, since high quality sites may be important in preparing birds for migration. Because the staging period in a shorebird's life cycle functions primarily as an opportunity to refuel after breeding, high quality staging sites should occur where fat deposition rates are maximized (Andres 1994) within the constraints of species-specific molt and migration strategies. To test this idea of quality-dependent site selection and importance, researchers at Simon Fraser University have employed blood plasma metabolite analyses to assess the rate of mass gain (assumed to be analogous to fattening rate of actively feeding birds) of a captured individual (Williams *et al.* 1999, Guglielmo *et al.* 2002, Acevedo Seaman *et al.* 2006). Plasma metabolites (the byproducts of cellular fat metabolism) have the advantage of being able to predict the physiological state of birds with respect to their rate of fat deposition, which better reflects fattening rates over previous days than a static assessment of body condition such as size-corrected mass (Williams *et al.* 1999). Triglycerides (which appear as a result of dietary fat ingestion) have been shown to be the best measure of fattening rate in captive western sandpipers (*Calidris mauri*; Guglielmo *et al.* 2002). The feasibility of using triglycerides to infer site quality has been examined in free-living western sandpipers at migratory stopovers (Ydenburg *et* *al.* 2002, Acevedo Seaman *et al.* 2006), but has so far not been tested at pre-migratory staging areas. Another possibility for a physiological index of site quality is corticosterone, a steroid hormone produced by birds to facilitate life history changes or respond to stressful events (Romero 2002). The regulation of fat deposition prior to migration is likely accomplished by modulation of corticosterone levels. Increases in baseline corticosterone levels prior to migration may stimulate foraging activity and lipogenesis, thus aiding in storage of fat resources necessary for long-distance flight (reviewed by Holberton *et al.* 1996). On an individual basis, body condition may have a significant effect on baseline corticosterone level prior to capture and its maximal level during the adrenocortical response to stress (Kitaysky *et al.* 1999). Birds in poor condition may have high baseline corticosterone levels to stimulate foraging, yet may be unable to produce high maximal corticosterone levels in response to capture (corticosterone levels during a stressful event become elevated to facilitate survival). If corticosterone levels are related to site quality, baseline levels should be highest (to stimulate maximum foraging) at locations where site quality is lowest (and therefore body condition and energy reserves are lowest). The difference between baseline and maximal levels of corticosterone should be similar at these sites because birds may be unable to mount a distinct stress response. Conversely, baseline levels should be lowest where site quality is highest because good food availability or quality obviates the need for additional foraging stimulated by corticosterone. Here, maximal levels should be much higher than baseline levels, indicating that a bird has adequate body reserves to respond to a stressful event. If these relationships hold, corticosterone levels may lend insight into what sites enable birds to fatten faster and thus what sites are of highest quality. A physiological assessment of staging site quality and importance via triglyceride and corticosterone levels has the potential to clarify the mechanisms influencing shorebird distribution across North Slope staging areas, and help pinpoint sites where changing environmental conditions may have a disproportionate effect on staging shorebird populations.

Escalating environmental change on the North Slope hastens the need for addressing the knowledge gaps described above. Industrial development is increasing in scope and intensity across the Arctic (Gilders and Cronin 2000, National Research Council 2003), and increases in surface air temperature leading to rapid environmental change are believed to be amplified at higher latitudes (Sereze *et al.* 2000, IPCC 2001, Holland and Bitz 2003). Increased industrial development has created the potential for disturbance, habitat modification, and oil spills that could impact a large segment of a species' population. Shoreline oiling from offshore spills could affect staging shorebirds directly by oiling their plumages, or indirectly by contaminating or killing invertebrate food sources (Andres 1994). In addition, construction and maintenance of industrial development could negatively influence shorebirds by causing them to flee from noise or human presence, or may eliminate important staging habitats. Accelerated environmental change may add to the effects of development by changing the spatial or temporal availability of littoral habitats suitable for staging shorebirds. Studies in other areas of the country have identified shorebirds as an avian group highly susceptible to human-induced disturbance (Burger 1981). Based on this evidence, it is plausible that the effects of energy development and environmental change on staging shorebirds could be detrimental to populations that already appear to be in decline (Brown *et al.* 2001). A mechanistic understanding of shorebird abundance, distribution, phenology, and site use during the staging period will enhance managers' ability to predict and mitigate effects of environmental change on the North Slope, and allow proactive rather than reactive management.

OBJECTIVES & HYPOTHESES

The specific objectives and associated predictions for this research are to:

1. *Assess the abundance, distribution, and species composition of shorebirds staging along North Slope coastlines prior to the fall migration.* We predict that shorebirds should be distributed across the North Slope in a non-uniform fashion, and that species composition within a staging area will reflect the surrounding breeding community.

2. *Quantify phenological aspects of staging, such as timing of arrival after breeding for adult and hatch-year birds, overall and species-specific peaks in shorebird numbers, length of stay at staging sites, and movement patterns of birds across the North Slope. We will also investigate species-specific habitat use at staging sites.* First, we predict that adult birds will arrive at and depart from staging areas prior to hatch-year birds, following the breeding phenological pattern in which adults abandon young to prepare for migration. Second, we predict that the peak of staging shorebird abundance will be later as one moves from west to east across the North Slope, based on trends documented by Connors (1983) for western and semipalmated sandpipers (*Calidris pusilla*) between Cape Krusenstern, Pt. Barrow, and Prudhoe Bay. In contrast, the peak of abundance for dunlin (*Calidris alpina arcticola*) should increase from east to west given that they winter to the west in East Asia. Third, we predict that length of stay and movement patterns will vary by species, due to differences in life history strategies. Semipalmated sandpipers may show the shortest length of stay because they migrate to wintering areas to molt, whereas dunlin may show the longest length of stay because they molt most of their primaries and body feathers prior to migration to wintering areas (Holmes 1972, Prater *et al.* 1977, Gratto-Trevor 1992). For this reason as well, individual semipalmated sandpipers may stage only briefly in the Arctic, and birds moving between North Slope staging sites may reflect a continuous directional migration along the coastline rather than multiple staging events. We considered "continuous migration" to be evidenced by birds stopping at a number of sites for a day or less, and "multiple staging events" to be evidenced by birds stopping for more than a day at a time at one or more sites. Detections of radio-equipped individuals at staging sites for only a short period of time, and in a linear pattern along the coastline, would be consistent with the hypothesis that semipalmated sandpipers migrate quickly and directly out of the Arctic. Fourth, we believe that birds will be more likely to stage close to where they bred (adults) or fledged (hatch-year birds) at the beginning of the staging period but will disperse farther from breeding or natal areas as the season progresses. Lastly, we predict that different species will use available staging habitats in different proportions, and that this species-specific habitat selection will be similar to habitat use patterns reported by Connors *et al.* (1979, 1984) during their studies of staging shorebirds on the North Slope in the 1970's.

3. *Examine differences in measures of physiological condition (fattening rates and stress hormone concentrations) among species and staging sites.* We predict that species will exhibit differences in fattening rates as a result of differential molt and migration strategies that affect the amount of time required to accumulate necessary fat resources prior to migration. We also predict that shorebirds sampled at different staging sites along the North Slope will show quantifiable differences in both fattening rates and stress hormone

STUDY AREA

Our study area included all coastal habitats of Chukchi and Beaufort Seas between the western end of Kasegaluk Lagoon and Demarcation Bay (the Alaska/Canada border; Figure 1). Typical littoral habitats along this portion of the North Slope include brackish water mudflats and marsh, low-lying saline tundra, mud and gravel shores of sloughs, river deltas, and lagoons, and gravel mainland and barrier island beaches. Tidal influence in the absence of storms is <30 cm vertical fluctuation, but wind-driven tidal intrusion, common during the ice-free period (July-September), maintains brackish habitats well above normal high tide lines (Connors *et al.* 1979).

We flew aerial surveys across the entire study area to collect geographic distribution and telemetry data. We also established six ground camps to examine local distribution, species composition, and phenology, and to capture birds for marking and blood sample collection. From west to east, the camps were located at: Kasegaluk Lagoon (70.301°N, 161.888°W; operated 2006 only), Peard Bay (70.812°N, 158.323°W), Pt. Barrow/Elson Lagoon (71.290°N, 156.788°W), the Colville River delta (70.473°N, 150.564°W), the Sagavanirktok River delta (70.291°N, 148.202°W in 2005; moved to 70.246°N, 147.832°W in 2006), and the Okpilak River delta (70.080°N, 144.011°W, Figure 1). The ground camp locations were selected based on (a) the presence of either a large lagoon system (Peard Bay, Pt. Barrow/Elson Lagoon, Kasegaluk) or a large river delta (Colville, Sagavanirktok, Okpilak), both of which might support large numbers of staging shorebirds, (b) the potential for logistical support from other project collaborators for conducting work at the site, and (c) the ability to access the sites with helicopters or fixed-wing aircraft.

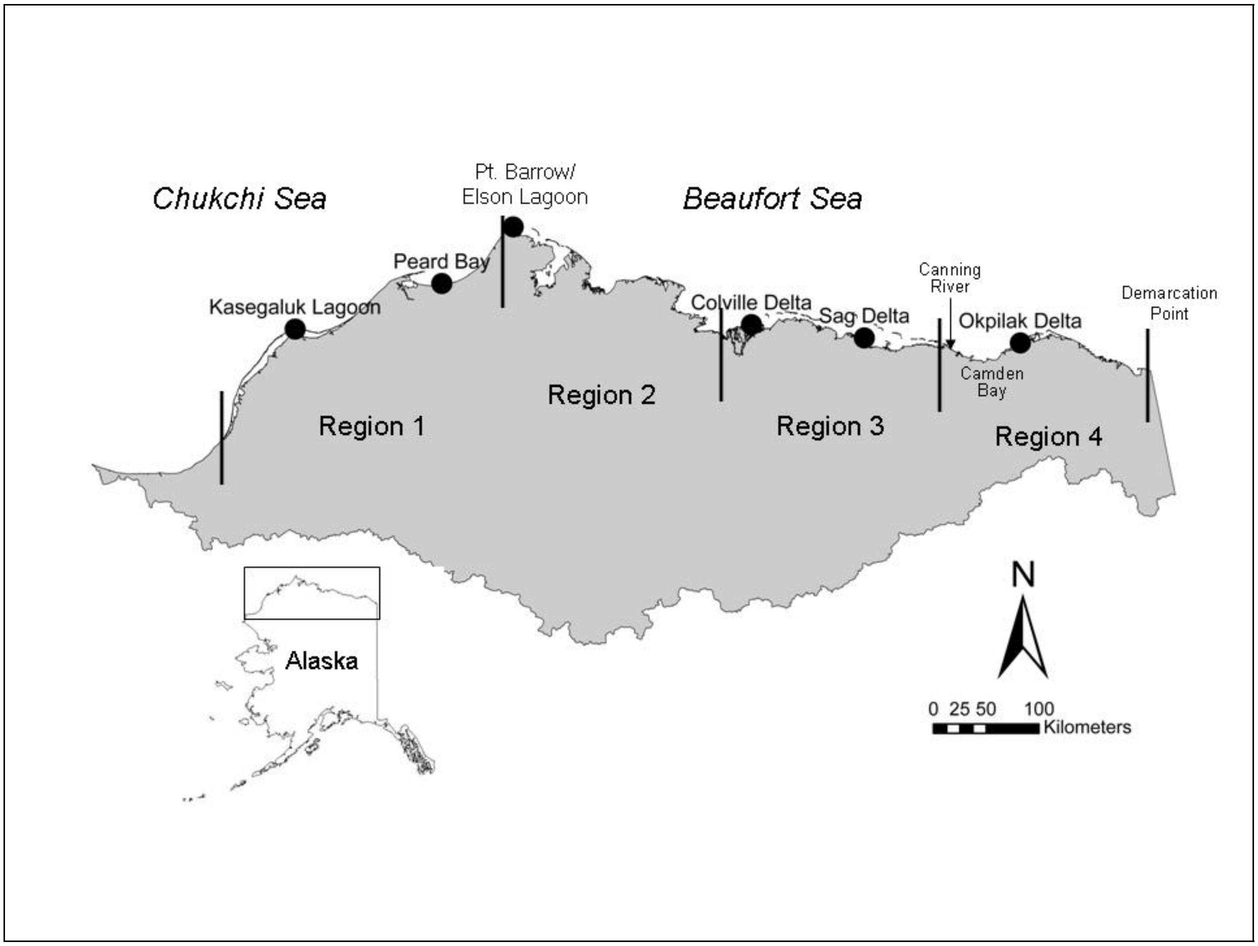


Figure 1. Aerial survey regions (1-4), ground camp locations, and ARTS station locations, 2005-2007.

METHODS

Objective 1: Abundance, Distribution, and Species Composition

To obtain a broad-scale perspective on staging shorebird abundance and distribution through time, we conducted aerial surveys of North Slope littoral areas from 2005-2007. Surveys were conducted such that we were able to count birds in a 150 meter band along the land/sea interface of the coastline. From 7-16 August 2005, we conducted a single survey of the North Slope coastline between the western end of Kasegaluk Lagoon and Demarcation Bay (Alaska/Canada border) with a Robinson R-44 helicopter at an altitude of 15 m and a cruising speed of 95-115 km/hr (depending on wind speed). The front left biologist identified and counted birds within 150 m to the left of the centerline of the aircraft, while the rear left biologist recorded data and watched for birds missed by the front surveyor. We recorded all shorebirds within belt transect sections designated by GPS locations recorded every two minutes. The use of two-min intervals enabled calculation of bird densities on a per-time period, per-transect, or per-habitat basis (Johnson *et al.* 1993). Between 22 July and 27 August 2006, we conducted four surveys of the

North Slope coast in a Bellanca Scout fixed-wing aircraft, flying at an altitude of 15 m and a cruising speed of 130-170 km/hr. The area covered during each survey varied because weather prohibited the extent and number of flights (Table 1). Shorebird observations were recorded by a single observer from the rear seat of the plane, looking on one side of the aircraft only. We limited observations of birds to those within 150 m of the aircraft. We used a voice-recorder interface program developed by the U.S. Fish and Wildlife Service (John Hodges, Juneau, AK) that records a GPS fix and audio file for each observation; these were later transcribed into geo-referenced data points. In 2007, we utilized the same fixed-wing aircraft survey techniques as in 2006 but limited our surveys to only the Arctic National Wildlife Refuge coast from the Canning River to Demarcation Bay because this area was infrequently surveyed in 2006. In 2006 and 2007, wherever river deltas or other staging habitat existed more then 150 m inland from the coast, we surveyed for birds along transects spaced 1-km apart that ran perpendicular to the coastline.

Table 1. Dates, aircraft used, and area surveyed for each of six aerial surveys conducted between 2005-2007 along the North Slope coast of Alaska. Refer to Figure 1 for location of endpoints.

Year	Survey	Dates	Aircraft	Endpoints (W to E)
2005	Survey 1	7-16 August	Helicopter	S end Kasegaluk Lagoon to Demarcation Point
2006	Survey 1	22-26 July	Fixed-wing	Peard Bay to Demarcation Point
2006	Survey 2	3-7 August	Fixed-wing	Kasegaluk Lagoon camp to Demarcation Point
2006	Survey 3	9-17 August	Fixed-wing	S end Kasegaluk Lagoon to Camden Bay
2006	Survey 4	23-27 August	Fixed-wing	S end Kasegaluk Lagoon to Canning River Delta
2007	Survey 1	7-8 August	Fixed-wing	Canning River Delta to Demarcation Point

Small shorebirds were generally not identifiable to species from the air, so we categorized individuals as “small sandpiper”, “medium sandpiper”, “phalarope” and “plover.” Based on ground observations (see below), “small sandpiper” likely included semipalmated, western, white-rumped (*C. fuscicollis*), or Baird’s (*C. bairdii*) sandpipers, “medium sandpiper” included dunlin, sanderling (*C. alba*), pectoral sandpiper (*C. melanotos*), stilt sandpiper (*C. himantopus*), ruddy turnstone (*Arenaria interpres*), or long-billed dowitcher (*Limnodromus scolopaceus*), “phalarope” included either red (*Phalaropus fulicarius*) or red-necked phalaropes (*P. lobatus*), and “plover” included either American golden-plover (*Pluvialus dominica*) or black-bellied plover (*P. squatarola*). Where possible we identified individuals to species.

We divided the North Slope coast into four main regions to analyze the aerial survey data: 1) the south end of Kasegaluk Lagoon to the Chukchi Sea side of Pt. Barrow, 2) the Elson Lagoon side of Pt. Barrow to the west side of the Colville River delta, 3) the Colville River delta to the West Canning River delta, and 4) the West Canning River delta to Demarcation Point (Figure 1). We then created subregions of similar habitat within each of the four larger regions. For each subregion, we imported the coordinates of the boundaries of each two-minute flight intervals (representing ca. 3.5 km on the ground) from the 2005 helicopter survey and plotted these in ArcMap 9.1 (ESRI Inc., 2005). We next plotted the total number of birds observed in each two-minute period in ArcMap to show shorebird distributions for the 2005 helicopter survey. Then, we overlaid the 2006-2007 fixed-wing data on top of the 2005 intervals and summed the total number of birds within each two-minute interval for each survey period in 2006 and 2007. There were a total of four survey periods in 2006 and one in 2007 (Table 1). We report mean per-interval counts for each subregion in each survey period and compare these with per-interval counts from 2005 to assess intra- and interannual variability in shorebird distribution. For the purpose of delineating important staging areas, we defined a "shorebird concentration area" as sub-region with mean per-interval counts of birds at least 50% higher than other sub-regions within that region during the same time period.

We considered river deltas along the Beaufort coast separately because these areas were surveyed via linear transects flown perpendicular to the coast. We determined the total number of shorebirds detected within each two-minute interval (ca. 3.5 km linear transects) and report the mean per-interval count for each delta. Standardizing the data in this way facilitated comparisons between the deltas and the linear coastlines. Our definition of an important delta in terms of staging shorebird concentration was less rigorous than for important subregions (above) because we had less comparative data for the deltas than for the coastal subregions. We considered a delta to be a "shorebird concentration area" if it had per-interval counts of shorebirds at least 50% higher than other deltas during the second 2006 survey, when all deltas were surveyed over a relatively short period of time.

All aerial survey data are reported as raw count data uncorrected for detectability. We stress that our emphasis is on comparative abundance and distribution of staging shorebirds across the entire North Slope rather than on exact density or abundance in any one location.

Objective 2: Phenology, Habitat Use, Time to Departure, and Movement Patterns

Phenology. During the postbreeding seasons of 2005 and 2006, we conducted a series of surveys at each of the ground camps to assess phenology and habitat use, and to provide a ground-based means of validating species composition for our aerial surveys. At each ground camp, we established nine 1-km-long transects within a 10-km diameter study area. Transects were not located randomly, but rather were located where (1) birds were seen or believed to be foraging, and (2) in each of four habitat types in proportion to their availability in the study area. Habitat types included gravel beach, mudflat (silt barren), pond edge, and salt marsh. Gravel beach was typically found on exposed shorelines along the Chukchi Sea, and along barrier islands in the Beaufort Sea. Mudflat consisted of open riverine silt deposits or dried pond/lake basins. Pond edge was comprised of shallow water, mud, and sand found along the border of small ponds, lakes, or lagoons. Salt marsh was characterized by low-growing, saline tolerant vegetation and periodically inundated substrate. Transects at each camp were surveyed by a single observer on foot once every three days throughout the field season (24 July-30 August in 2005, 15 July-4 September 2006), although exact survey dates varied slightly by camp. We recorded species, group size and age composition (adult and juvenile), and habitat for all shorebirds observed within 100 m of each transect. To characterize available habitat for later assessment of habitat use, we also recorded the proportion of each of the four habitat types along each transect.

To assess phenological patterns in ground transect data, we plotted the number of individuals of each species recorded during a given transect survey against time (survey date), after standardizing survey dates across camps (Table 2). We did not use densities because there were distinct spatial differences in how shorebirds were observed on transects making calculations and thus comparability of densities in different habitats problematic. For example, along gravel beach shorelines and pond or lagoon edges, bird activity was concentrated in a strip along the water edge and would be best presented as linear density. In contrast, in mudflat and salt marsh habitats shorebird activity occurred within a wider band and would be better presented as areal density (Connors *et al.* 1979). Reporting actual counts rather than densities also facilitated comparisons with previous studies. We considered the five most common species (semipalmated sandpiper, dunlin, red-necked phalarope, red phalarope, and western sandpiper) separately; all other species were combined into a single category for further analysis.

Table 2. Survey dates for ground-based transect surveys at each of six ground camps located on the North Slope of Alaska in 2005 and 2006.

Period	2005 Dates	2006 Dates
1		17-19 Jul
2		20-22 Jul
3	23-25 Jul	23-25 Jul
4	26-28 Jul	26-28 Jul
5	29-31 Jul	29-31 Jul
6	1-3 Aug	1-3 Aug
7	4-6 Aug	4-6 Aug
8	7-9 Aug	7-9 Aug
9	10-12 Aug	10-12 Aug
10	13-15 Aug	13-15 Aug
11	16-18 Aug	16-18 Aug
12	19-21 Aug	19-21 Aug
13	22-24 Aug	22-24 Aug
14	25-27 Aug	25-27 Aug
15	28-30 Aug	28-30 Aug
16		31 Aug-2 Sep

Shorebird community characteristics. We also examined shorebird community composition using the ground transect data. This was not possible with our aerial survey data since assigning observations of birds to particular species was difficult from the air. For each camp in each year, we calculated species richness (number of species), evenness (E, abundance of each species), and the Shannon-Wiener diversity index (*H'*, a measure of the proportion of the total community belonging to each species) to summarize variability in community composition across our study area (Pielou 1974). To obtain measures of precision for E and *H'*, we performed a series of 100 bootstrap simulations of the observed count data by species and used their standard errors for subsequent comparisons of geographic variation (Kowalewski *et al.* 2006). We tested whether species evenness and diversity varied by camp with one-way ANOVA (Proc GLM, SAS 9.1, SAS Institute, Inc. 2003) and by coast (Chukchi vs. Beaufort) with t-tests (Proc TTEST, SAS 9.1, SAS Institute, Inc. 2003), using Satterthwaite's approximation for df because sample sizes were not equal across camps (Snedecor and Cochran 1980:97).

Habitat use. We also used the ground transect data to create resource selection functions (RSF; Manly *et al.* 2002) in TreeNet (Salford Systems 2003) to assess habitat use for 12 species: American golden-plover, black-bellied plover, dunlin, long-billed dowitcher, pectoral sandpiper, red phalarope, red-necked phalarope, ruddy turnstone, sanderling, semipalmated sandpiper, stilt sandpiper, and western sandpiper. TreeNet is a data mining program that constructs additive regression trees by sequentially fitting a simple parameterized function via least squares at each iteration. For increased accuracy a subset of the training data was randomly selected without replacement and used in place of the full training set to compute the model update at each step (stochastic gradient boosting; Friedman 2001). All species datasets entered into TreeNet were randomly split into 90% training data and 10% testing data for model accuracy assessment. For each species, we examined the relative importance of habitat type, ground camp, season (early: 15-31 July, peak: 1-15 August, or late: 16 August to end of field season), and year in determining the ratio of used vs. available habitat. We considered the number of birds (by species) counted in each habitat type/camp/season/year combination as a metric of habitat used, and the proportion of habitats across each of the nine transects within a camp as habitat availability. We present results of the TreeNet analysis as partial dependence plots, which allow visualization of the effect of the predictor variable (habitat category) on the modeled response (in this case the resource selection ratio) after accounting for the average effect of all other nuisance predictors (in this case ground camp, season, and year; Friedman 2001, Hochachka *et al.* 2007). The lower the overall partial dependence values for a given predictor, the less dependent the response is on variation within that predictor. For a given species, positive partial dependence values for a habitat category indicate preferential use of that habitat; negative values indicate no evidence of preferential use. Because ground camps and transects were not randomly located, we recognize that our results cannot be extended beyond the area directly sampled by our transects.

Time to departure and movement patterns. To understand how long shorebirds remain at staging sites after capture (hereafter called “time to departure”) and how adult and juvenile birds move across the North Slope (i.e., their movement patterns), we captured adult (AHY) shorebirds on nests during the breeding period (15 June-15 July) 2005-2007, and juvenile shorebirds (HY) at coastal staging areas during post-breeding (16 July-1 September) 2005-2007. Captured individuals were fitted with radio transmitters (model BD-2, 0.9-1.6 g, Holohil Systems Ltd., Ontario, Canada; Appendix 1). We clipped all body feathers from an area slightly larger than the transmitter centered approximately 1 cm above the uropygial gland, then attached the transmitter using superglue and a spray-on catalyst (Loctite 454 Prism Instant Adhesive and 7452 Accelerator). Previous research indicates that retention time for transmitters attached with this method is at least seven weeks (Warnock and Warnock 1993). Because we wished to track dunlin away from the North Slope to their staging areas in western Alaska, we attached transmitters to this species using both glue and a leg-loop harness made of 1-mm thick, stretchable beading cord (StretchMagic; Pepperell Braiding Company, Inc.). All birds were released at their capture site after radio attachment, usually within 30 minutes of capture. Three hundred sixty-one shorebirds of five species (semipalmated sandpiper, western sandpiper, dunlin, red phalarope, and red-necked phalarope) were fitted with radio transmitters during the three years of the study (Appendix 1).

We monitored movements of radio-equipped shorebirds throughout the postbreeding period using several different methods. First, personnel at each of the six ground camps listened for all possible radio-equipped birds within their 10-km study area on a daily basis using hand-held yagi antennas and ATS R4000 radio receivers. Camps were staffed in 2005 from 23 July-30 August, in 2006 from 17 July-2 September, and in 2007 (Canning Delta camp only) from 20 July-20 August. Secondly, automated remote telemetry stations (ARTS) were located within each study area at each of the camps, and at accessible coastal locations at three remote (unstaffed) sites: Ikpikpuk Delta (70.794°N, 154.299°W; operated as a remote site in 2005 only), Canning River (69.863°N, 146.413°W; operated as a remote site in 2006 and staffed as a ground camp in 2007, and Canning Delta (70.146°N, 145.866°W; operated as a remote site in 2005 and 2006, and staffed as a ground camp in 2007). The Ikpikpuk Delta ARTS site was located on the mouth of the Ikpikpuk River between the Pt. Barrow/Elson Lagoon and Colville Delta camps. The Canning River ARTS site was located approximately 80 km south of the Canning Delta ARTS along the same river, between the Sagavanirktok and Okpilak Delta camps (Figure 1). The ARTS were comprised of two 4-element yagi antennas situated 90° apart at the top of a 6-m tall tower. The antenna configuration was designed to maximize coverage of the most likely flight path of migrating shorebirds. Detections of radio-equipped birds were recorded by an ATS R4500 receiver programmed to continuously scan all possible frequencies from all deployment locations while the ground camps were staffed. Third, we listened for radio-equipped birds during aerial surveys conducted in 2006-2007; planes were equipped with H-antennas and ATS R4000 receivers, and survey personnel scanned all possible frequencies continuously while in flight.

To determine time to departure for radio-marked shorebirds at each of the six ground camps, we used mark-recapture methods implemented in Program MARK (White and Burnham 1999). The detection records for each radio-marked bird (combining data from all detection methods described above) were transformed into encounter histories with a 1 denoting the bird being present at a particular camp and a 0 denoting that bird's absence. To obtain estimates for time to departure, we used the Cormack-Jolly-Seber (CJS) open-population model framework to conduct a survival analysis on these encounter histories. Model parameters included species (semipalmated sandpiper, western sandpiper, dunlin, both phalarope species combined); the encounter history for each bird, and a suite of covariates that turned the encounter history off if the camp was not doing telemetry on a particular date. Within our suite of *a priori* models, we allowed survival to vary by (1) all five species separately, (2) four species, with the two phalarope species combined into a single category, (3) either a linear or quadratic effect of capture date, and (4) an interaction between species and capture date. We also included a model holding survival constant across all species and capture dates. We used $QAIC_c$ as a model selection criterion (Burnham and Anderson 2002). We corrected for a high level of overdispersion in our telemetry data by adjusting the c-hat value in MARK to 10.0. We transformed the CJS model estimates of survival (Φ) for marked animals into life expectancy (*i.e.*, time to departure) according to the following formula (Kaiser 1995):

$$\textit{life expectancy} = -1/\ln(\Phi).$$

We used Oriana Version 2.02c (Kovach Computing Services 2005) to perform circular statistics on the between-site movement data for radio-equipped birds. Specifically, we calculated the mean vector (in degrees) and distance moved (in km) for four species (semipalmated sandpiper, dunlin, red phalarope, and red-necked phalarope). We considered only detections of birds from locations other than their initial capture site, and used each bird only once in the analysis. For all individuals, we used the location that represented the farthest distance the bird had moved from its initial capture location; no birds returned to a site they had previously left. We combined data for each species across all three years due to low sample sizes within a given season. Because detections of semipalmated sandpipers were more numerous than any other species, we examined the movement patterns of this species across the North Slope in more depth. Specifically, we used the date and time period of detections of radio-equipped semipalmated sandpipers to assess whether movements of individual birds between sites represented multiple staging events or directional migratory movements (birds moving rapidly between locations without stopping to feed for >1 day). We also report the number of detections of semipalmated sandpipers at either the Canning Delta or along the Canning River as evidence to suggest that this species may use the river as a migration corridor south through the state of Alaska.

Objective 3: Physiological Assessment of Staging Site Quality

To assess physiological condition (fattening rates and stress hormone concentration) among species and staging sites, we collected small (200-300 µl) blood samples from three species of shorebirds (semipalmated sandpiper, western sandpiper, and dunlin) captured during the staging period at each of the six ground camps. Blood samples were obtained via brachial venipuncture using a sterile 26-gauge needle and heparinized capillary tubes at two different times. Initial samples were taken within three minutes of capture to assess baseline corticosterone level, and a second sample was taken 30 minutes post-capture to assess stress-induced corticosterone level. We assumed the latter measurement represented the maximal corticosterone level based on stress response time series data from other small bird species (Alexander Kitaysky, UAF, *pers. comm.*). We divided whichever sample was larger in half, and used the second half to measure triglyceride since this metabolite may be sampled any time within 45 minutes of capture. Captured birds were banded, measured, weighed, and held in bird bags in a box between bleedings. The collected blood was subsequently centrifuged for 15 minutes; plasma was then drawn off and frozen immediately after separation.

The triglyceride analyses were conducted under the guidance of Dr. Tony Williams at Simon Fraser University in two separate assay periods (December 2005 for 2005 samples and December 2006 for 2006 samples). Triglyceride levels in duplicate 5-µl plasma samples were determined by enzymatic endpoint assay, using Sigma Trinder reagents A (240 µl) and B (60 µl) to first assess total glycerol content, then free glycerol content. Triglyceride concentration was calculated as the difference between free and total glycerol levels. We first transformed the triglyceride data using $\log_{10}$ (trig) + 1 to meet assumptions of normality. We examined whether triglyceride concentration differed between species (semipalmated sandpiper, western sandpiper, and dunlin) and across camps (semipalmated sandpiper only) with ANCOVA, using package R Commander in R Version 2.6.2 (The R Foundation for Statistical Computing 2008). Mass, date, bleed time, and year were used as covariates in all analyses because they have been shown to have significant effects on triglyceride levels in previous studies (Guglielmo *et al.* 2002). A potential drawback to using triglycerides to determine fattening rates is that birds must remain at a given site for long enough that a bird sampled for its triglyceride level at that site will not have just arrived from another site, such that its triglyceride level reflects food availability elsewhere. Triglyceride levels are thought to reflect a bird's fattening rate over the previous 1-2 days (Williams *et al.* 1999). We will use our time to departure results to determine whether we can reasonably assume that most shorebirds we sampled for triglycerides had been at the sampling site for at least 1-2 days prior to capture.

Seven corticosterone assays were conducted between November 2006 and March 2007 to examine baseline and maximal corticosterone levels in semipalmated sandpipers across camps. Corticosterone levels were determined by direct radioimmunoassay (Wingfield *et al.* 1992) in Dr. Alexander Kitaysky's lab at the University of Alaska Fairbanks. The radioimmunoassay procedure involved (1) the extraction of plasma steroids with dichloromethane, and (2) competitive binding between corticosterone in the sample and radioactively-labeled synthetic corticosterone. A standard curve produced for each assay using synthetic, non-radioactive corticosterone was used to assess the amount of natural corticosterone in each plasma sample. We log-transformed both baseline and maximal corticosterone values to meet assumptions of normality. We analyzed for differences among camps controlling for date of capture, with an ANCOVA in package R Commander in R Version 2.6.2 (The R Foundation for Statistical Computing 2008). Unlike the triglyercide analyses, we did not control for mass because corticosterone levels have not been shown to be affected by this parameter, and bleed time was controlled for as part of the sampling process.

All shorebird survey, capture, handling, and sample collection activities for this project were conducted under a UAF Institutional Animal Care and Use Committee protocol (#04-31), and a US Federal Bird Banding Permit (Subpermitee under Dr. Richard Lanctot's master permit #23269).

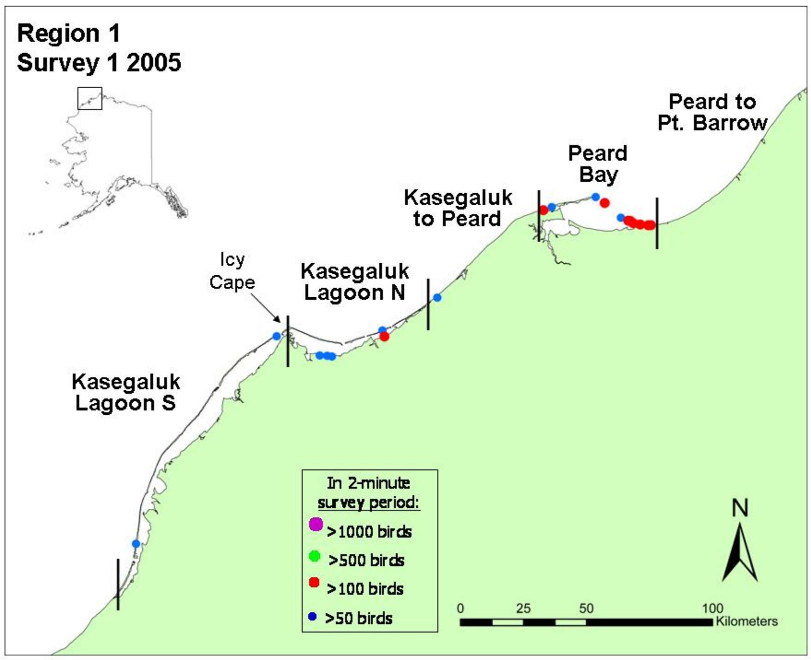
RESULTS

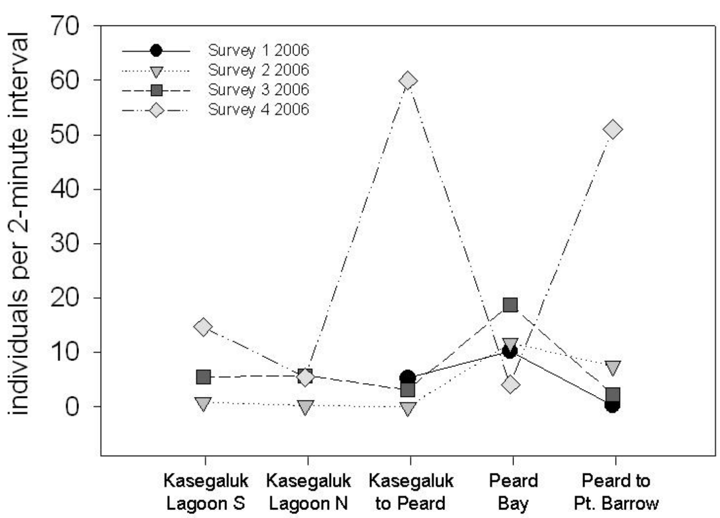
Objective 1: Abundance, Distribution, and Species Composition

Abundance and distribution within years. We found concentrations of staging shorebirds at Kasegaluk Lagoon, Peard Bay, Pt. Barrow/Elson Lagoon, Cape Simpson, Smith Bay to Halkett Bay, and at numerous lagoons along the eastern Beaufort coast in 2005 (see maps in Figure 2a-d). In 2006, shorebird counts varied by subregion and across surveys 1-4 (see graphs in Figure 2a-d). Despite this spatial and temporal variability, we did find some patterns in the 2006 shorebird counts. Peard Bay in Region 1 had higher counts than the southern portion of the Chukchi coast during the first three surveys. The coastline to either side of Peard Bay had high counts of birds during the fourth survey. The western Beaufort coast (Region 2) had higher overall counts than any other region in 2006, although Admiralty Bay and the west side of Harrison Bay had low counts compared to other subregions within Region 2. Overall counts were low in Region 3 for all 2006 surveys, particularly for the fourth survey when almost no shorebirds were observed. Prudhoe Bay had a relatively high count compared to the other subregions during the second survey. Within-season patterns were more difficult to discern for Region 4 because only the first two surveys were completed in 2006 due to poor survey conditions later in the season (the third survey only covered Camden Bay and no fourth survey was conducted in Region 4). Per-interval shorebird counts during the second survey were generally higher than those recorded during the first survey, especially for the Beaufort Lagoon subregion which was much higher.

Figures 2a-d. Aerial survey distribution results for the coastline of Regions 1-4, respectively. The map in each panel shows 2005 helicopter survey results based on shorebird numbers per two-minute survey interval. Shorebird numbers within each two-minute interval are presented on each map as follows: blue dot: 50-99 birds; red dot: 100-499 birds; green dot: 500-999 birds; purple dot: ≥ 1000 birds. No dot for a given interval indicates there were fewer than 50 birds counted in that interval. The graph in each panel shows the four 2006 and the single 2007 fixed-wing (region 4 only) survey results. Each symbol represents the mean per-interval counts of shorebirds for each survey and subregion. A lack of symbols on the graph for a given survey period indicates that no transect surveys were conducted in that subregion in that period.

2a.





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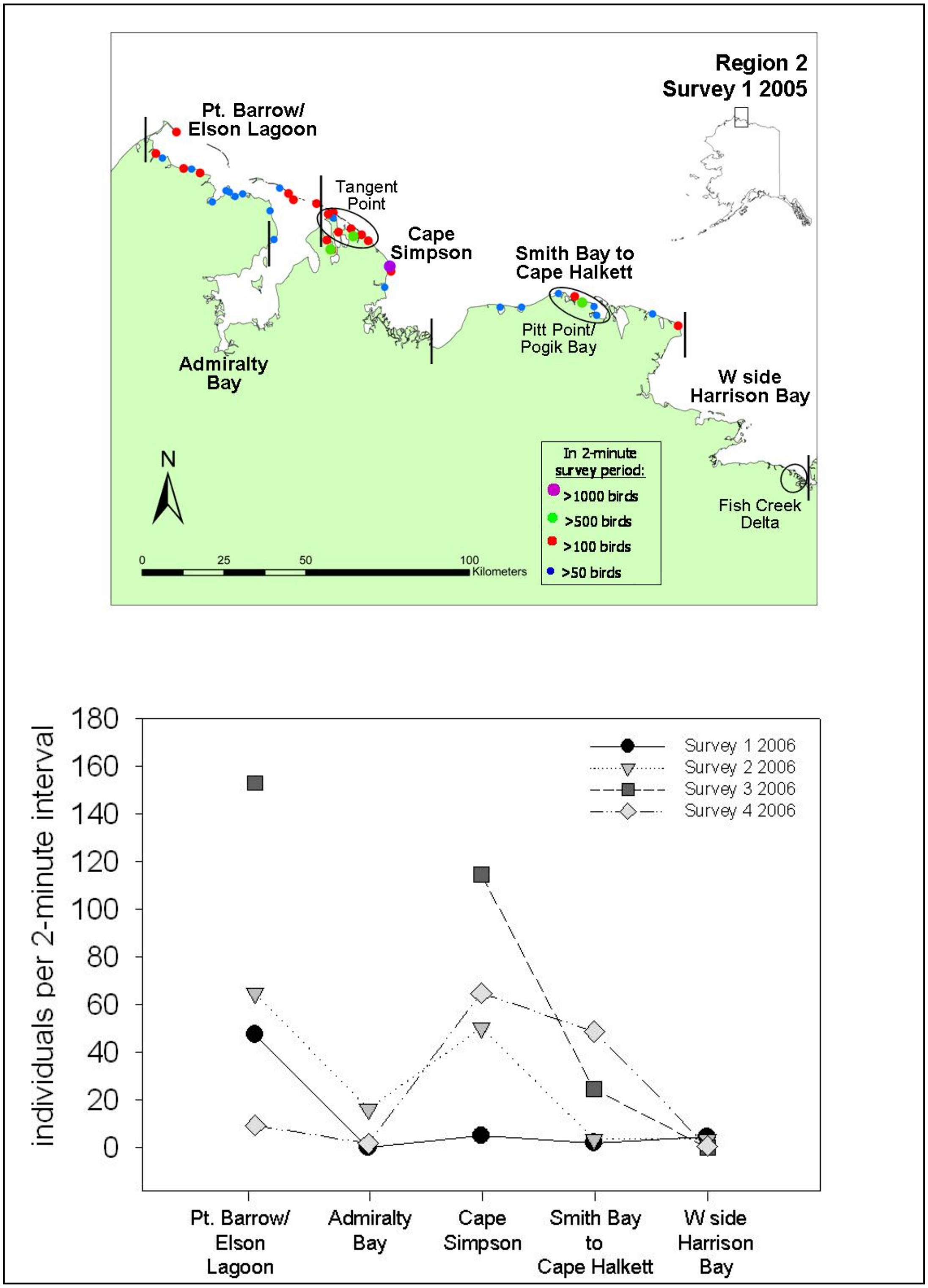
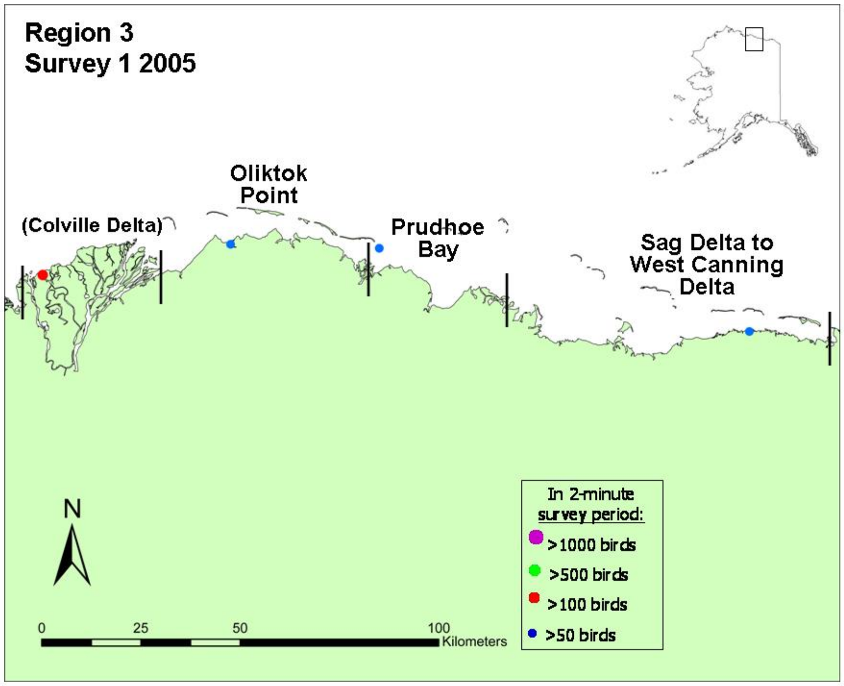
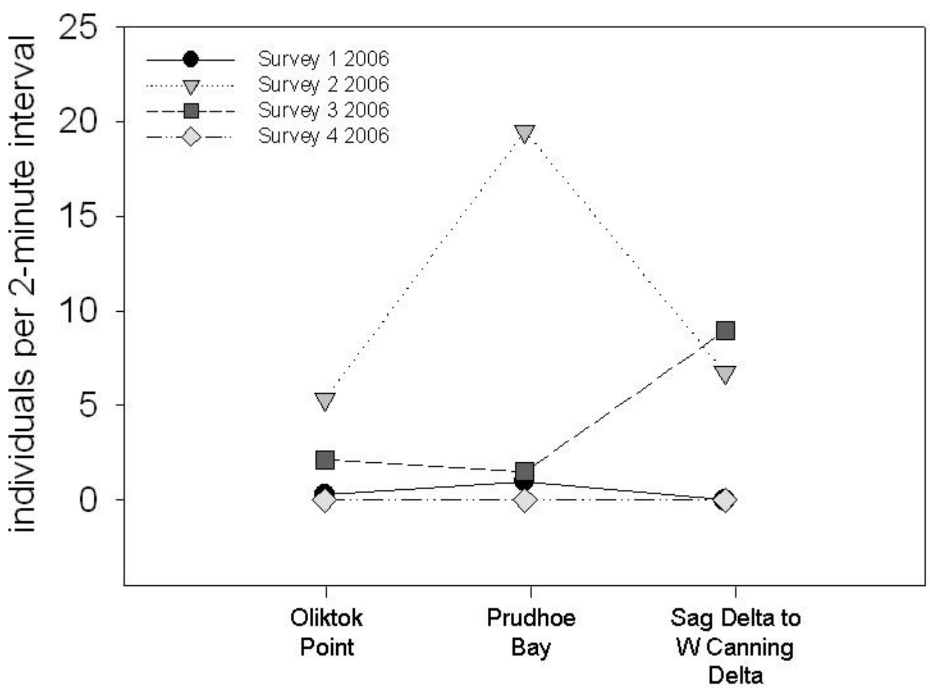


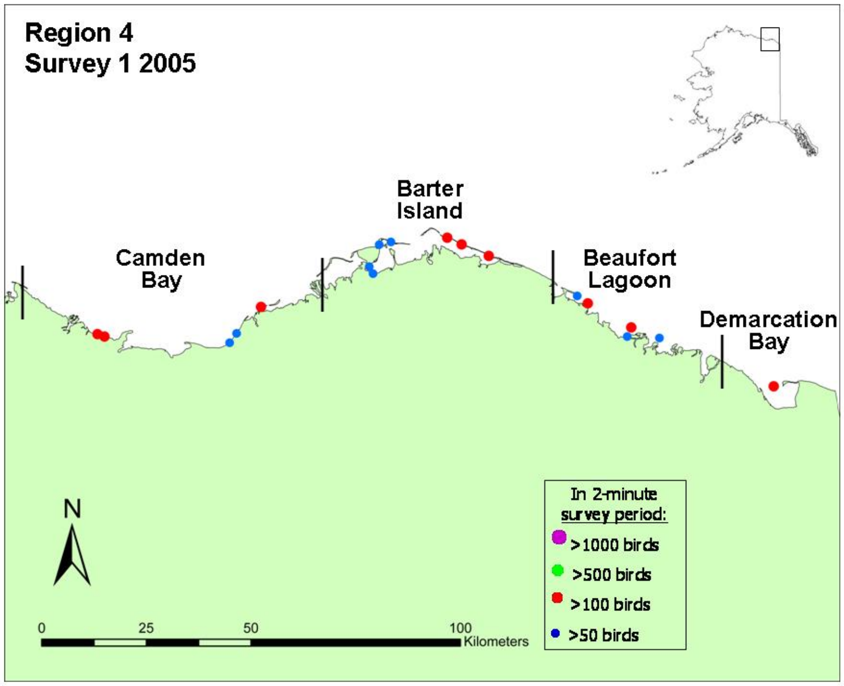
Region 2
Survey 1 2005
Pt. Barrow/
Elson Lagoon
Tangent
Point
Cape
Simpson
Smith Bay to
Cape Halkett
Pitt Point/
Pogik Bay
Admiralty
Bay
W side
Harrison Bay
N
In 2-minute
survey period:
>1000 birds
>500 birds
>100 birds
>50 birds
Fish Creek
Delta
0
25
50
100
Kilometers
180
160
140
120
100
80
60
40
20
0
individuals per 2-minute interval
Survey 1 2006
Survey 2 2006
Survey 3 2006
Survey 4 2006
Pt. Barrow/
Elson
Lagoon
Admiralty
Bay
Cape
Simpson
Smith Bay
to
Cape Halkett
W side
Harrison
Bay

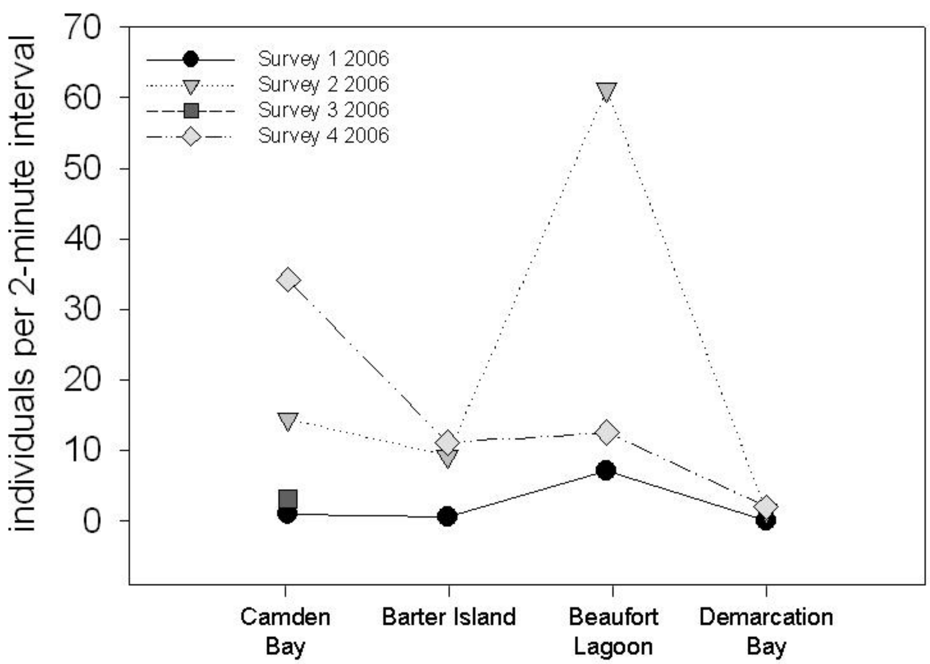
2c.


Region 3
Survey 1 2005
Oliktok Point
(Colville Delta)
Prudhoe Bay
Sag Delta to West Canning Delta
N
0
25
50
100
Kilometers
In 2-minute survey period:
>1000 birds
>500 birds
>100 birds
>50 birds


individuals per 2-minute interval
25
20
15
10
5
0
Survey 1 2006
Survey 2 2006
Survey 3 2006
Survey 4 2006
Oliktok Point
Prudhoe Bay
Sag Delta to W Canning Delta

2d.


Region 4
Survey 1 2005
Barter Island
Camden Bay
Beaufort Lagoon
Demarcation Bay
In 2-minute survey period:
>1000 birds
>500 birds
>100 birds
>50 birds
N
0
25
50
100
Kilometers


individuals per 2-minute interval
70
60
50
40
30
20
10
0
Survey 1 2006
Survey 2 2006
Survey 3 2006
Survey 4 2006
Camden Bay
Barter Island
Beaufort Lagoon
Demarcation Bay

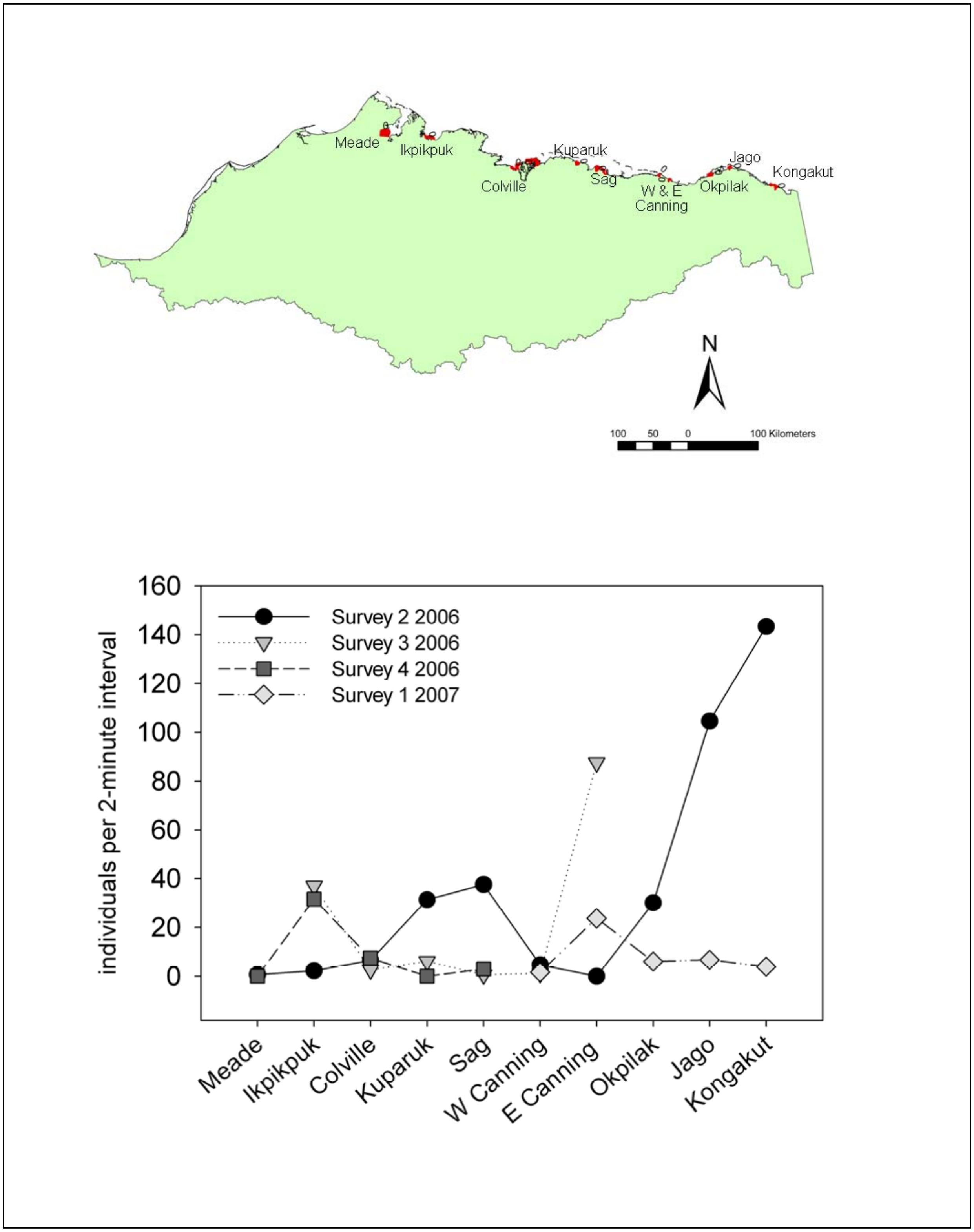
Abundance of shorebirds on Beaufort Sea river deltas was also variable within a single year (Figure 3). The Ikpikpuk Delta had higher counts of birds in 2006 during surveys 3 and 4. The Kuparuk and Sagavanirktok Deltas had higher counts during survey 2. The Jago and Kongakut Deltas also had extremely high concentrations of shorebirds during survey 2, although we were unable to determine how these counts varied with time because we did not survey these areas during the third and fourth surveys (see above). We did not survey river deltas in 2005.

Abundance and distribution across years. We compared results from the single 2005 helicopter survey to the results from the third 2006 fixed-wing survey to assess similarities across years in abundance and distribution. These two surveys were conducted during approximately the same time period (August 7-16 in 2005 vs. August 9-17 in 2006; Table 1). Peard Bay had higher counts of staging shorebirds than other areas of Region 1 in both years. In Region 2, Elson Lagoon and the Cape Simpson area had the highest counts of staging birds in both years, while Smith Bay to Cape Halkett showed moderate concentrations of staging birds in both years (Figure 2b). We observed few staging shorebirds in Region 3 in either year (Figure 2c). We were unable to survey much of Region 4 in 2006 and thus are unable to make between- year comparisons. However, we were able to survey Region 4 in 2007 (Survey 1 2007; Figure 2d); these results are most comparable to the second fixed-wing survey of 2006 since they were conducted at approximately the same time (August 6-7 in 2006 and August 7-8 in 2007; Table 1). In both 2006 and 2007 the Camden Bay area had higher counts of staging shorebirds than other areas of the Region 4 coast, while Beaufort Lagoon had two times as many shorebirds during the second survey in 2006 than any other lagoon in either year. Demarcation Bay had low counts of shorebirds in both 2006 and 2007.

We were able to examine between-year results for river deltas only for the eastern Beaufort coast (from the West Canning to the Kongakut deltas). Distribution of shorebirds on these deltas was also variable across years (Figure 3). Most notably, counts for the eastern-most deltas (Jago and Kongakut) were dramatically higher in 2006 (second survey) than in 2007, although these counts took place over the same time period in both years. The high numbers of shorebirds counted on the Jago and Kongakut deltas during the second survey in 2006 correspond to similarly high numbers recorded in the Beaufort Lagoon subregion (Figure 2d) during the same survey, although per-interval counts in Beaufort Lagoon were not as large. The higher counts of shorebirds recorded at the Kuparuk and Sagavanirktok deltas during the second survey in 2006 also correspond to the peak count at Prudhoe Bay (located between the two deltas) during the same survey.

Species composition. We were unable to draw many conclusions regarding species composition from our aerial surveys given the difficulty of positively identifying shorebirds to species from an aircraft. We report on shorebird community composition at the six ground camps as part of our results for Objective 2.

Figure 3. Aerial survey distribution results for river deltas along the Beaufort Sea on the North Slope of Alaska. Map shows location of deltas; graph shows mean per-interval counts of shorebirds across each delta. A lack of symbols on the graph for a given survey period indicates that no transect surveys were conducted in that subregion in that period.



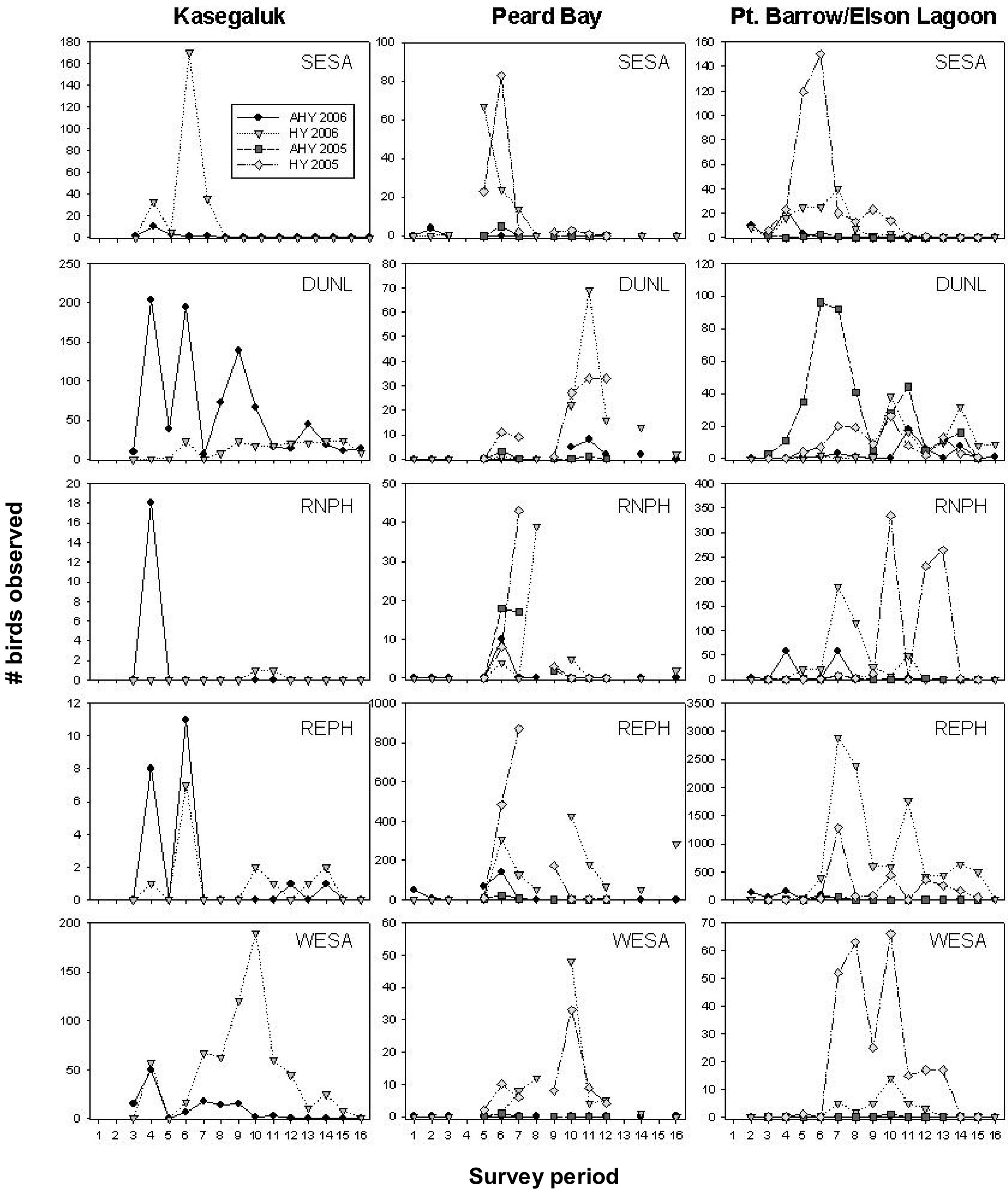
Objective 2: Phenology, Habitat Use, Time to Departure, and Movement Patterns
We observed distinct species-specific patterns of phenology, habitat use, time to departure, and movement patterns at our six ground camps on the North Slope of Alaska. Overall, the postbreeding shorebird community was comprised of three species (semipalmated sandpiper, dunlin, and red-necked phalarope) common to all locations we studied and two species (western sandpiper and red phalarope) that were common on the Chukchi coast, but declined in relative abundance going east along the Beaufort coast. We present data on staging phenology separately for these five species (Figure 4a); the remainder of the species that stage on the North Slope were less common and are considered as a group (Figure 4b).

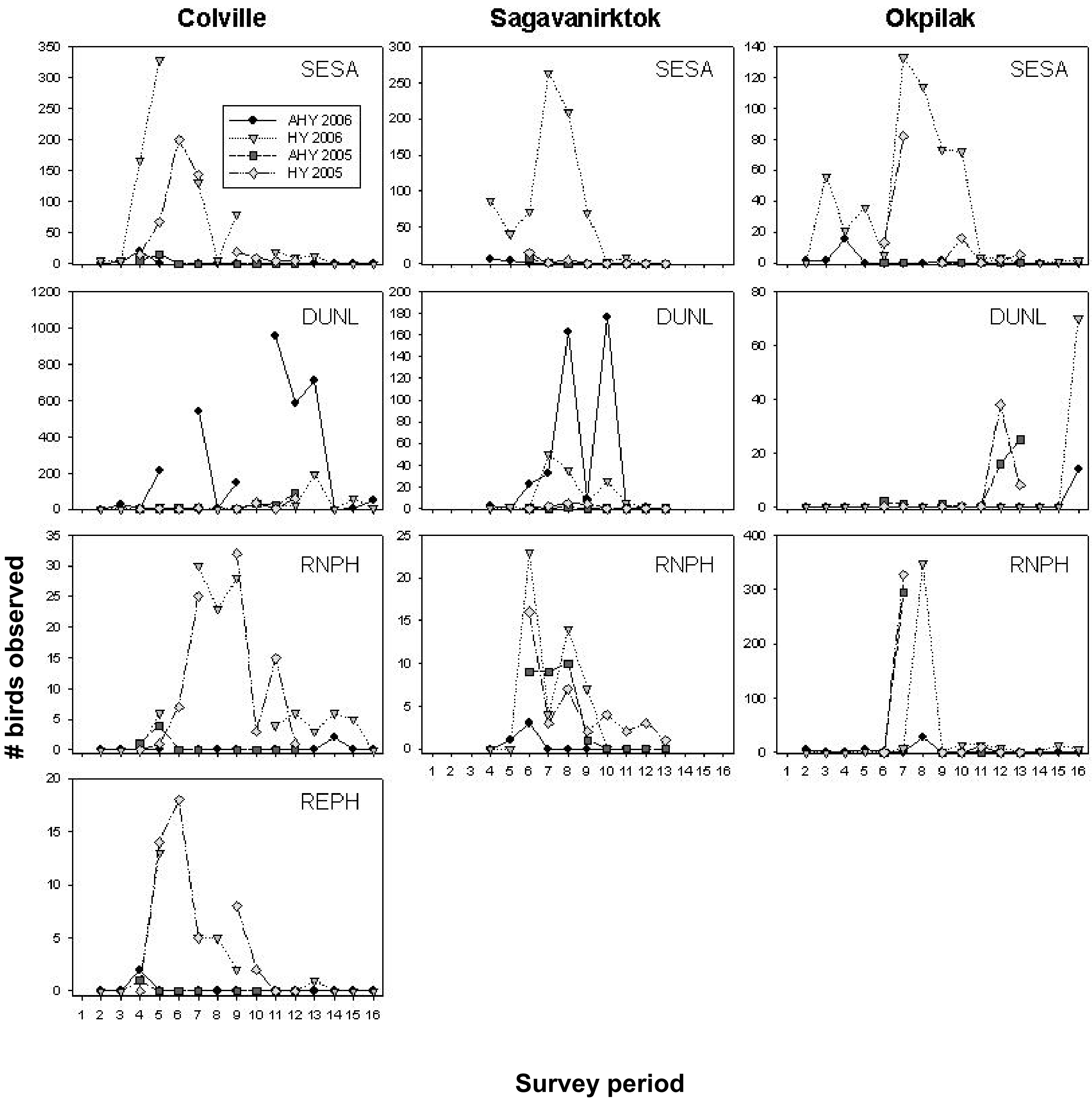
Phenology – semipalmated sandpiper. This species was more numerous at the western Beaufort Sea ground camps (Colville and Sagavanirktok Deltas) than elsewhere. Few adults were present except at Peard Bay, where they outnumbered juvenile birds in 2006. Temporally, semipalmated sandpipers were present at all camps only early in the staging period, and were mostly absent after survey period 8 (7-9 August) on the Chukchi coast and period 10 (13-15 August) on the Beaufort coast. The period of peak abundance of juveniles occurred during survey periods 5-6 (29 July-3 August) on the Chukchi coast and during survey periods 7-8 (4-9 August) on the Beaufort coast. Adults preceded juveniles at staging areas by approximately two survey periods (six days) at most camps, except at Peard Bay, where the peak of juveniles was one survey period (three days) earlier than the peak of adults. Adult semipalmated sandpipers were mostly absent from our transects after survey period 5 (29-31 July) on the North Slope.

Phenology – dunlin. Dunlin were more common at the Kasegaluk Lagoon, Colville Delta, and the Sagavanirktok Delta camps; highest numbers were recorded at the Colville Delta. Adults were more common than juveniles everywhere except Peard Bay and Okpilak, which had lower overall numbers of dunlin than other camps. The peak of abundance tended to be more protracted in this species than in others. Temporally, dunlin were present at staging areas mostly after survey period 6 (1-3 August), although they were counted at Kasegaluk Lagoon in 2006 starting in survey period 4 (26-28 July). The period of peak abundance was earliest at Kasegaluk Lagoon (survey period 4; 26-28 July) and latest at the Okpilak Delta (survey period 16; 31 August-2 September), although there was not a clear directional trend across the camps in between. Adult dunlin arrived earlier than juvenile dunlin at Kasegaluk Lagoon, Pt. Barrow/Elson Lagoon, the Colville Delta, and the Sagavanirktok Delta camps, but both age groups were present until the end of the field season. Within each camp, the dates of peak abundance for both age groups were similar.

Phenology – red-necked phalarope. Red-necked phalaropes exhibited highest abundances at the Pt. Barrow/Elson Lagoon and Okpilak camps. In 2005, juveniles were more common than adults at Pt. Barrow but were observed in almost equal proportion to adults at the Okpilak camp. In 2006 juveniles far outnumbered adults at both camps. Red-necked phalaropes were abundant for only a short period of time at the Kasegaluk Lagoon, Peard Bay, and Okpilak camps, while their period of peak abundance at the Pt. Barrow/Elson Lagoon, Colville Delta, and Sagavanirktok Delta camps was more protracted. Temporally, the period of peak abundance for this species varied between survey period 4 (1-3 August) at the Kasegaluk Lagoon camp and survey period 10 (13-15 August) at Pt. Barrow/Elson Lagoon. There was no clear directional trend in date of peak abundance. Adults peaked in abundance up to four survey periods (12 days) in advance of juveniles, and were absent from the transects before juveniles at most camps.

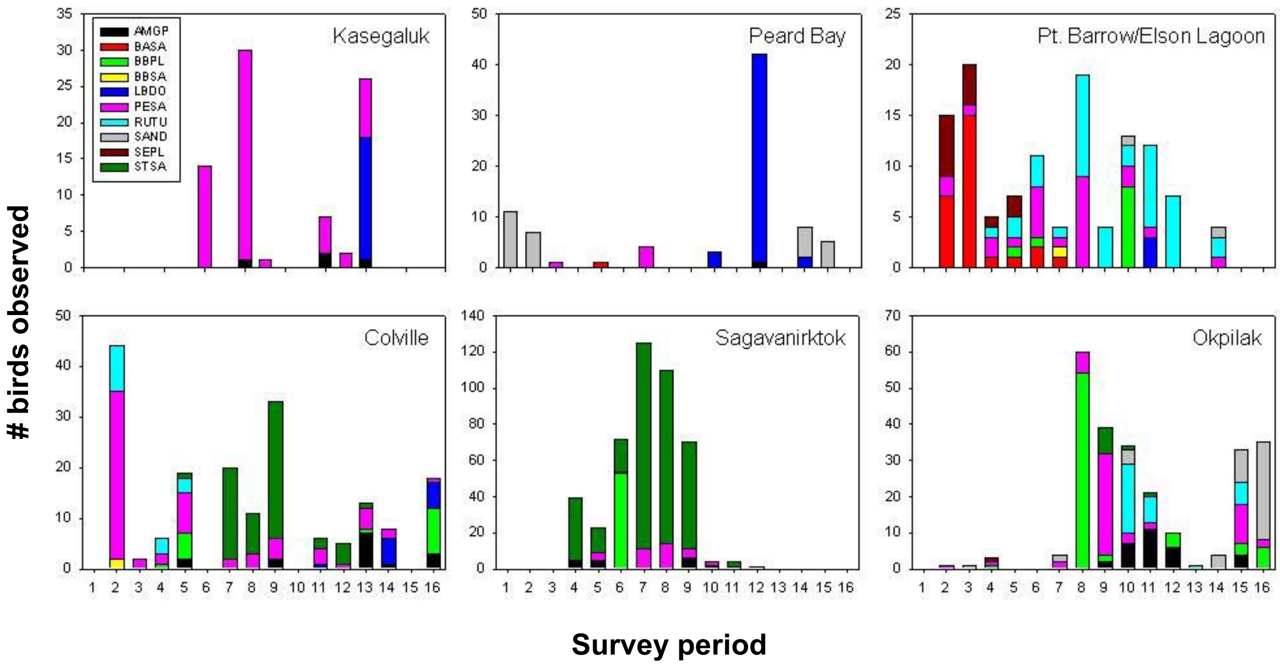
Figure 4a.


Kasegaluk
Peard Bay
Pt. Barrow/Elson Lagoon
SESA
DUNL
RNPH
REPH
WESA
AHY 2006
HY 2006
AHY 2005
HY 2005
birds observed
Survey period



Colville
Sagavanirktok
Okpilak
SESA
DUNL
RNPH
REPH
AHY 2006
HY 2006
AHY 2005
HY 2005
birds observed
Survey period

Figure 4b.



Figures 4a-b. Species composition, age distribution, and phenology of staging shorebirds at six ground camps on Alaska's North Slope in 2005 and 2006. Fig 4a shows absolute counts of adult (AHY) and juveniles (HY) of the five most common species summed across all nine transects within each survey interval and location in 2005 and 2006. SESA = Semipalmated Sandpiper, DUNL = Dunlin, RNPH = Red-necked Phalarope, REPH = Red Phalarope, WESA = Western Sandpiper. Fig 4b shows composition of other species (ages combined) through time at each of the six ground camps. Total bar height and the height of each colored bar section is sum of individuals of all "other" species and individual species (see legend), respectively, within each survey interval. Data on other species is presented for 2006 only. BBPL = Black-bellied Plover, STSA = Stilt Sandpiper, PESA = Pectoral Sandpiper, SAND = Sanderling, RUTU = Ruddy Turnstone, BASA = Baird's Sandpiper, BBSA = Buff-breasted Sandpiper, AMGP = American Golden-plover, LBDO = Long-billed Dowitcher, SEPL = Semipalmated Sandpiper. Refer to Table 2 for survey interval dates. A lack of symbols on the graph for a given survey period indicates that no transect surveys were conducted at that camp in that period. Note that y-axis scale varies between camps.

Phenology – red phalarope. This species did not occur east of the Colville Delta, but were recorded in large numbers at the Peard Bay and Pt. Barrow/Elson Lagoon camps. Juvenile birds typically greatly outnumbered adults (although the reverse was true in 2006 at Kasegaluk Lagoon). They were relatively abundant throughout most of the staging period rather than exhibiting a short peak of abundance. Temporally, the peak of abundance for red phalaropes was survey period 6 (1-3 August) or 7 (4-6 August) at all four camps where they were recorded, thus there was no clear directional trend in abundance from west to east. At Kasegaluk Lagoon, (the only camp with substantial numbers of adults), the period of peak abundance was the same for both age groups, and both adults and juveniles were present almost to the end of the field season. At the other camps where red phalaropes were present, adults peaked between one and four survey periods (3-12 days) in advance of juveniles, and were absent from the transects prior to juveniles.

Phenology – western sandpiper. This species was only recorded along the Chukchi coast; the highest number was recorded at Kasegaluk Lagoon. Individuals observed were almost entirely juvenile birds. Temporally, western sandpipers were present at Chukchi Sea staging areas after survey period 6 (1-3 August) for a relatively long period of time compared to other species. Their peak of abundance was during survey period 10 (13-15 August) at all camps, thus there was no directional trend in abundance from west to east.

Phenology – other species. Less common species recorded along our ground transects were almost entirely juvenile birds. Long-billed dowitchers were more common on the Chukchi coast than on the Beaufort coast. They exhibited a distinct short pulse of abundance that was later in the staging period as one moved south along the Chukchi coast. Black-bellied plovers, American golden-plovers, and stilt sandpipers were more common on the Beaufort coast than on the Chukchi. Both plover species were present sporadically throughout most of the staging period, while stilt sandpiper numbers were concentrated between survey periods 4 (26-28 July) and 11 (16-18 August). Pectoral sandpipers were present in at least low numbers at all camps throughout the staging period. Temporally, this species was present throughout most of the staging period at all camps except Peard Bay, where most individuals were observed during the first half of the staging period. Sanderlings were recorded mostly at the Peard Bay and Okpilak camps, and mostly later in the staging period. Ruddy turnstones were present throughout the entire staging period only at Pt. Barrow/Elson Lagoon, but were also recorded at the Colville and Okpilak camps, albeit early at the Colville, and later at the Okpilak. Baird's sandpipers were observed primarily at Pt. Barrow/Elson Lagoon, and early in the staging period. Buff-breasted sandpipers and semipalmated plovers were rarely observed anywhere during staging. The largest numbers of both species were recorded at Pt. Barrow/Elson Lagoon during the first half of the staging period.

Shorebird community characteristics. We found that five species (semipalmated sandpipers, dunlin, western sandpipers, red phalaropes, and red-necked phalaropes) comprised the majority of the postbreeding shorebird community across our study sites. Overall, species richness, evenness, and diversity were higher in 2005 than in 2006 (Table 3). In both years, species richness was lowest at the Peard Bay and Sagavanirktok camps, and highest at the Pt. Barrow/Elson Lagoon and Colville Delta camps. Richness at Kasegaluk Lagoon was also low in

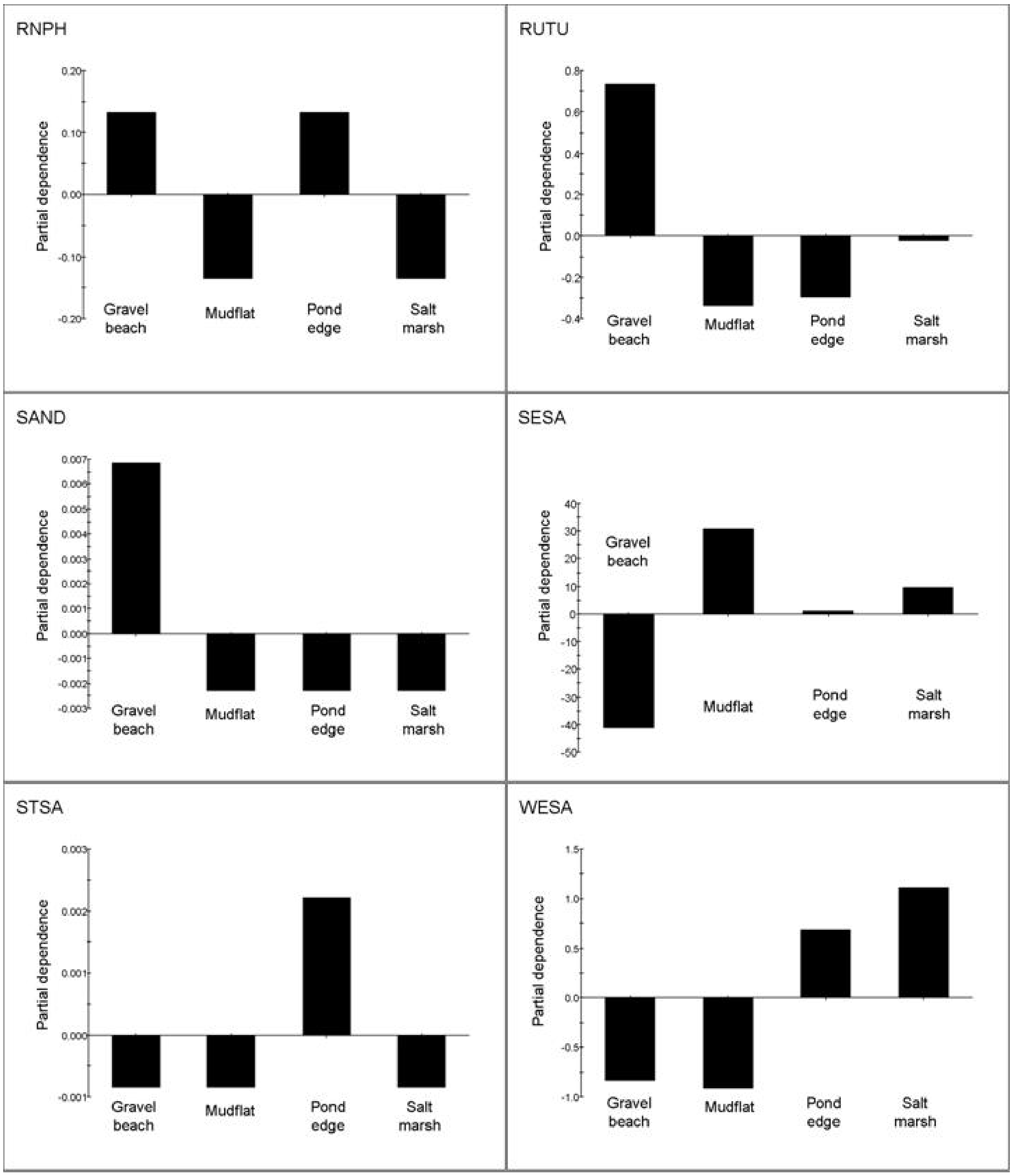
2006 (the only year for that camp). Species evenness across ground camps varied significantly within each year (2005 E: $F = 49588.6$, df = 4, $P < 0.001$; 2006 E: $F = 2094510$, df = 5, $P < 0.001$; Table 3); although there was not a consistent pattern across space or time. The same was true for species diversity (2005 H': $F = 72725.9$, df = 4, $P < 0.0001$; 2006 H': $F = 1674642$, df = 5, $P < 0.00001$; Table 3). Therefore, we grouped camps located along each coast (Chukchi Sea vs. Beaufort Sea) and analyzed these regions for evenness and diversity. Species richness did not differ between the Beaufort or Chukchi coasts in either year (2005: t = 0.52, $P = 0.32$; 2006: t = 0.16, $P = 0.44$). The Beaufort coast had greater diversity and evenness in both 2005 and 2006 than did the Chukchi coast (Table 3).

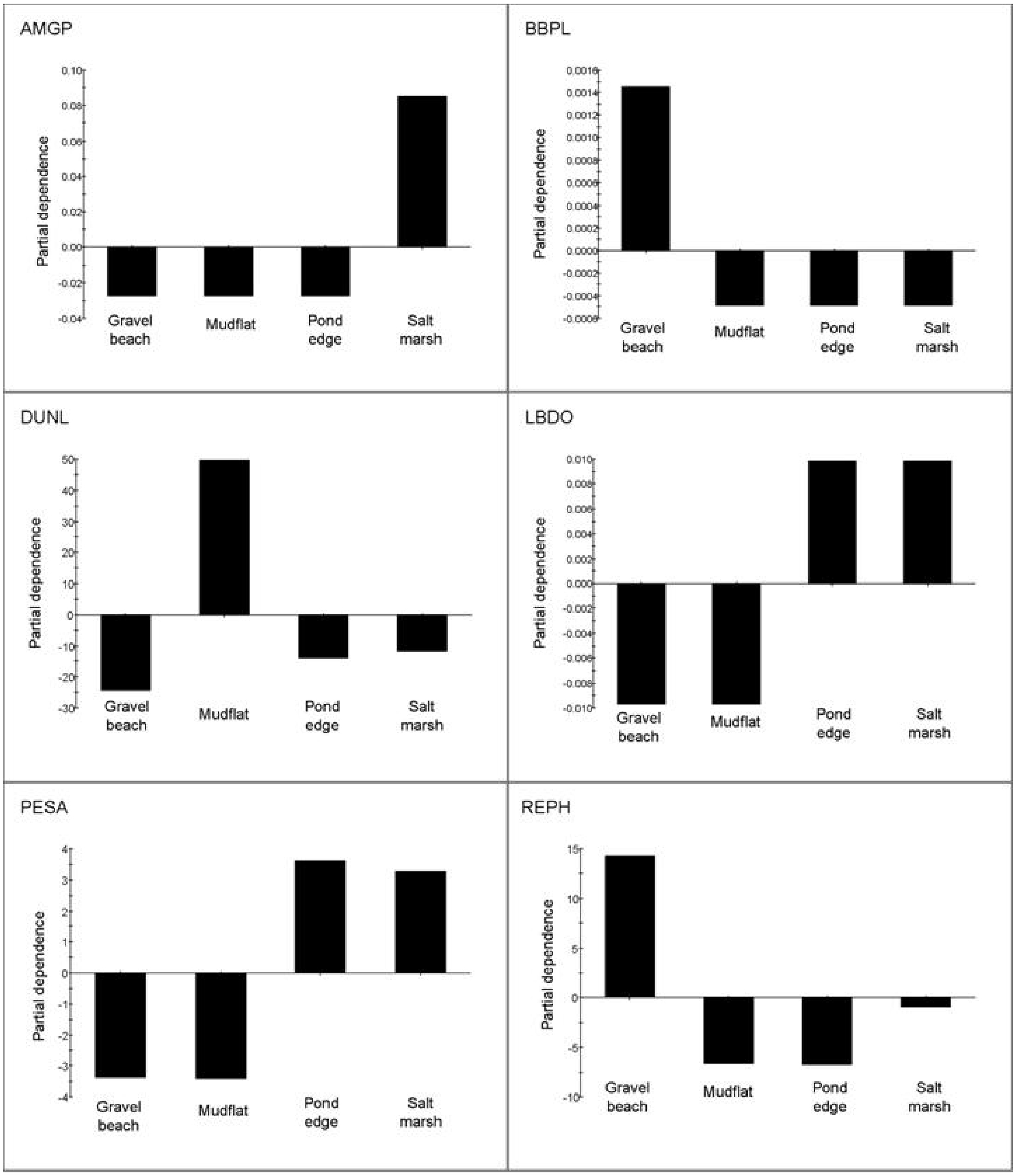
Table 3. Species richness, evenness and Shannon-Weiner diversity index values derived from shorebird transect surveys collected at each of six ground camps on the North Slope of Alaska. Results are presented by camp and ocean coast (i.e., Chukchi and Beaufort); 95% confidence intervals were derived through boot-strap simulations using camp transect data.

Year	Camp/ **Coast**	Richness	Evenness (E)	95% CI (E)	Diversity (H')	95% CI (H')
2005	Peard Bay	11	0.4117	0.4111, 0.4123	0.9873	0.9857, 0.9887
	Barrow	12	0.5283	0.5277, 0.5289	1.3128	1.3114, 1.3142
	Chukchi	**11.5**	**0.4700**	**0.4420, 0.4980**	**1.1500**	**1.0719, 1.2282**
	Colville	14	0.5732	0.5726, 0.5738	1.5128	1.5114, 1.5142
	Sag	10	0.5762	0.5756, 0.5768	1.3267	1.3253, 1.3282
	Okpilak	13	0.5051	0.5045, 0.5057	1.2955	1.2941, 1.2969
	Beaufort	**12.3**	**0.5515**	**0.5390, 0.5640**	**1.3783**	**1.3419, 1.4148**
2006	Kasegaluk	8	0.6175	0.6172, 0.6177	1.2840	1.2834, 1.2846
	Peard Bay	10	0.3698	0.3695, 0.3700	0.8514	0.8508, 0.8520
	Barrow	14	0.1407	0.1404, 0.1409	0.3713	0.3707, 0.3719
	Chukchi	**10.7**	**0.3760**	**0.3020, 0.4499**	**0.8356**	**0.6940, 0.9771**
	Colville	12	0.3256	0.3253, 0.3259	0.8091	0.8085, 0.8097
	Sag	8	0.5927	0.5924, 0.5929	1.2325	1.2319, 1.2330
	Okpilak	11	0.5567	0.5564, 0.5570	1.3349	1.3344, 1.3355
	Beaufort	**10.3**	**0.4917**	**0.4467, 0.5366**	**1.1255**	**1.0391, 1.2119**

Habitat use. We detected several primary species-habitat associations within the transects surveyed at our six ground camps (Figure 5). Black-bellied plovers, red phalaropes, ruddy turnstones, and sanderlings showed strong selection for gravel beaches, whereas dunlin and semipalmated sandpipers strongly selected for mudflats. American golden-plovers, long-billed dowitchers, pectoral sandpipers, and western sandpipers selected for salt marshes, although three of these species (long-billed dowitchers, pectoral, and western sandpipers) also selected for pond edge, which is often interspersed with salt marsh at North Slope coastal areas. Red-necked phalaropes showed approximately equal selection for gravel beach and pond edge. Stilt sandpipers, while not widely distributed or numerous across our study area, selected for pond edge where they were locally present, mostly east of the Colville River Delta.

Figure 5. Habitat selection by twelve species of shorebirds commonly found on North Slope, Alaska, staging areas. Graphs show partial dependence values indicating the strength of the association of that species with four categories of habitat: gravel beach, mudflat, pond edge, and salt marsh. See text for descriptions of habitat type. AMGP = American Golden-Plover, BBPL = Black-bellied Plover, DUNL = Dunlin, LBDO = Long-billed Dowitcher, PESA = Pectoral Sandpiper, REPH = Red Phalarope, RNPH = Red-necked Phalarope, RUTU = Ruddy Turnstone, SAND = Sanderling, SESA = Semipalmated Sandpiper, STSA = Stilt Sandpiper, WESA = Western Sandpiper.




AMGP
Partial dependence
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
Gravel beach
Mudflat
Pond edge
Salt marsh
BBPL
Partial dependence
0.0016
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
-0.0002
-0.0004
-0.0006
Gravel beach
Mudflat
Pond edge
Salt marsh
DUNL
Partial dependence
50
40
30
20
10
0
-10
-20
-30
Gravel beach
Mudflat
Pond edge
Salt marsh
LBDO
Partial dependence
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
Gravel beach
Mudflat
Pond edge
Salt marsh
PESA
Partial dependence
4
3
2
1
0
-1
-2
-3
-4
Gravel beach
Mudflat
Pond edge
Salt marsh
REPH
Partial dependence
15
10
5
0
-5
-10
Gravel beach
Mudflat
Pond edge
Salt marsh

Time to departure. One hundred ninety-seven radio-equipped shorebirds (of 361 total) were detected multiple times at their banding site and could be used in our survival models. The modeling results for our Cormack-Jolly-Seber survival analysis are shown in Table 4. After adjusting for overdispersion in the telemetry data likely caused by variability between individual radio-equipped birds, camps, dates, and years, our best model for tenure time was one of constant survival and detection probability across all five study species. Using this model, we estimated tenure time for all species to be 6.5 days (95% confidence interval: 3.4-9.6 days). Detection probability for all species (conditional upon survival) was 68% (95% CI: 58-78%). The second ranked model included a survival estimate that varied by species (with both phalarope species combined). Although less likely than the first model, the small change in $\Delta QAIC_c$ values between both models suggest that this model may also have power to explain variation in time to departure. Based on the second ranked model, semipalmated sandpipers and both phalarope species exhibited shorter times to departure than western sandpipers, which in turn had a shorter time to departure than dunlin (Figure 6).

Table 4. Model selection results for Cormack-Jolly-Seber survival analysis to estimate time to departure for radio-equipped shorebirds on the North Slope, 2005-2006. Model parameters were: Φ (survival probability), and p (detection probability). Parameters were either kept constant across all species (dot models) or allowed to vary across all five species (semipalmated sandpiper, western sandpiper, dunlin, red phalarope, and red-necked phalarope), only four species (phalarope species combined), with a linear or quadratic trend over time, or by an interaction between species and individual day captured. QAICc (Akaike's information criterion adjusted for small sample sizes and lack of model fit) was used as our model selection criterion; Δ QAICc indicates the change in QAICc units between the top model and the model of interest; QAICc weight (wt) is a measure of the relative support in the data for each model.

Model	QAICc	ΔQAICc	QAICc wt	Likelihood	No. Par.
Φ(.), p(.)	202.760	0.00	0.6154	1.0000	2
Φ(4 species), p(.)	205.188	2.43	0.1827	0.2970	5
Φ(4 species* linear trend), p(.)	207.013	4.25	0.0734	0.1192	6
Φ(5 species), p(.)	207.040	4.28	0.0724	0.1177	6
Φ(4 species*quadratic trend), p(.)	209.009	6.25	0.0271	0.0440	7
Φ(5 species*day cap), p(.)	209.063	6.30	0.0263	0.0428	7
Φ(5 species), p(5 species)	214.181	11.42	0.0020	0.0033	10
Φ(5 species*day cap), p(5 species)	216.221	13.46	0.0007	0.0012	11

Movement patterns – general. Forty-four of 361 radio-equipped individuals were detected at locations other than their initial capture site (85% by ARTS, 10% by aerial telemetry, and 5% by manual telemetry) and thus provided information on how birds move from breeding to staging areas, and among staging areas. These included six dunlin (4 adults, 2 juveniles), five red phalaropes (1 adult, 4 juveniles), three red-necked phalaropes (1 adult, 2 juveniles), and 30 semipalmated sandpipers (10 adults, 20 juveniles). Most adults (unless noted below) were initially captured at breeding sites and moved to coastal staging areas, whereas juvenile birds were captured at coastal areas after fledging and moved among coastal sites.

Figure 6. Time to departure (days) for radio-equipped shorebirds staging at six ground camps on the North Slope, Alaska. See Fig. 1 for ground camp locations. DUNL = dunlin, SESA = semipalmated sandpiper, WESA = western sandpiper, phalarope = both red and red-necked phalaropes combined. Error bars are 95% confidence limits for each species' mean.

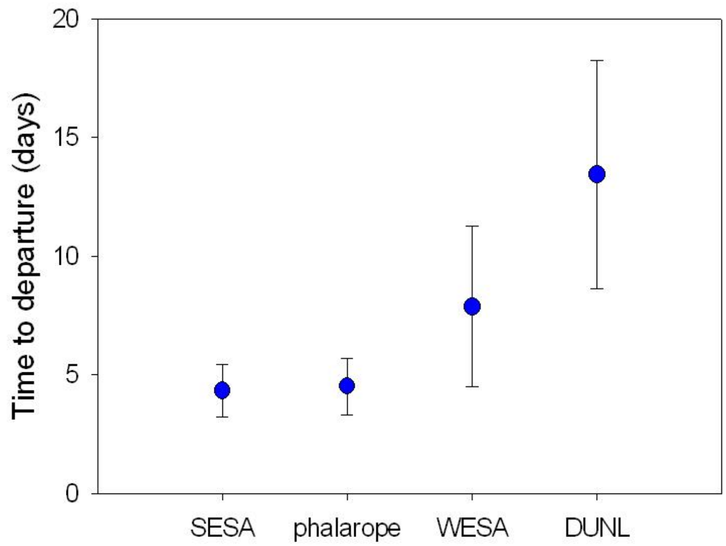
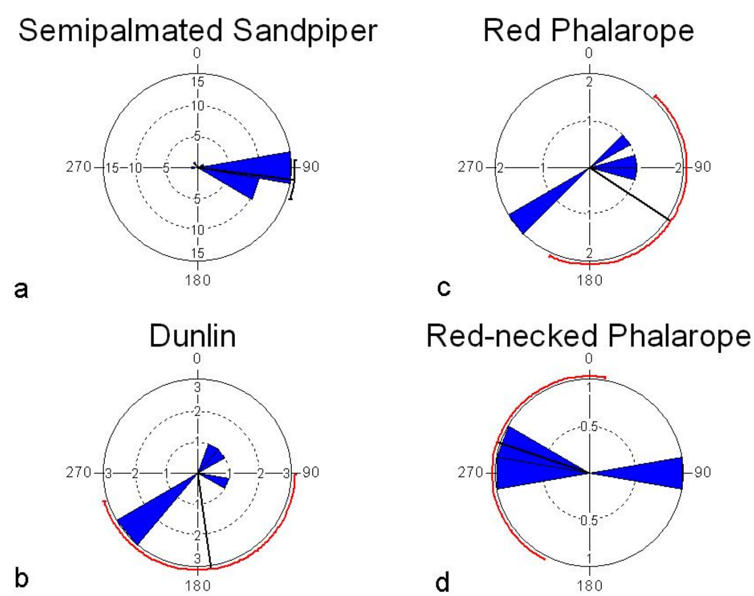


Figure 7. Compass rose diagrams showing circular statistics for shorebird movement patterns for four species. Blue wedges indicate number and direction of individual radio-equipped bird detections; samples sizes are indicated by numbered arcs within diagram. Solid black lines within diagram are mean movement vectors (in degrees); black or red arcs at outside of diagram are 95% confidence limits (red arcs indicate unreliable C.I. estimates due to low sample size).



Movement patterns – semipalmated sandpiper. Both adults and juvenile semipalmated sandpipers displayed a distinct pattern of movement north along the Chukchi coast (if initially captured at either Kasegaluk Lagoon or Peard Bay), then east along the Beaufort coast. The mean movement vector for semipalmated sandpiper was approximately east, at 97.0° ± 31.4° (n = 30; Figure 7). Eight individuals were detected multiple times, each time farther north (if along the Chukchi) or east of their previous location (Table 5). For six of these eight, the length of time between successive detections was a single day or less, despite most travel distances being 100 km or greater. We detected only two adults captured during the breeding season at the coast during the postbreeding period; they moved almost directly north to the coast within 10 km of their breeding location. Semipalmated sandpipers appeared to stop moving east once they reached the Canning River area. Indeed, 19 of 30 radio-equipped semipalmated sandpipers that were used in our analysis of movement patterns were last heard at either the Canning Delta ARTS (14), the Canning River ARTS (3), or at both (2). None of these individuals were subsequently detected at the Okpilak Delta located farther east on the Beaufort coast, suggesting the birds may have begun traveling south along the Canning River.

Table 5. Locations of, length of time between detections, and distances traveled between initial capture sites (first line of data for each individual) and subsequent detection sites (second and third lines of data for each individual) by eight radio-equipped semipalmated sandpipers heard multiple times along North Slope coastlines in 2005-2007. See Figure 1 for detection locations.

Individual	Age	Capture Location	Date Captured	Detection Location	Detection Date	Distance (km)
1	adult	Kasegaluk	4-Aug-06	btwn Kasegaluk & Peard	9-Aug-06	128.23
				Peard Bay	14-Aug-06	142.98
2	juvenile	Peard Bay	1-Aug-05	Colville Delta	8-Aug-05	290.74
				Sagavanirktok Delta	8-9 Aug 05	381.15
				Canning Delta	10-Aug-05	470.26
3	juvenile	Peard Bay	28-Jul-06	Colville Delta	6-7Aug 06	285.43
				Sagavanirktok Delta	7-Aug-06	390.65
4	juvenile	Barrow	30-Jul-05	Colville Delta	4-Aug-05	241.14
				Sagavanirktok Delta	5-Aug-05	329.54
				Canning Delta	5-Aug-05	416.41
5	juvenile	Barrow	4-Aug-05	Sagavanirktok Delta	7-Aug-05	330.52
				Canning Delta	7-Aug-05	417.47
6	juvenile	Barrow	28-Jul-06	Sagavanirktok Delta	6-Aug-06	343.35
				Canning River	9-Aug-06	411.22
7	juvenile	Barrow	31-Jul-06	Colville Delta	8-Aug-06	241.09
				Canning River	9-Aug-06	411.31
8	juvenile	Colville	1-Aug-05	Sagavanirktok Delta	4-Aug-05	89.09
				Canning Delta	5-Aug-05	178.27

Movement patterns – dunlin. The mean movement vector for dunlin was approximately south, at 172.1° ± 107.3° (n = 6; Figure 7b). This represents an average between two groups of dunlin: three moving southwest and three moving eastward. Three of six dunlin moved southwest along the Chukchi coast after capture, from Pt. Barrow/Elson Lagoon to Peard Bay. Two of these were adults radio-equipped at Pt. Barrow while attending nests. They were both detected at Peard Bay 56 days after radio-marking and seen in close proximity to each other. The third southwest-traveling dunlin was a juvenile bird initially captured while staging at Pt. Barrow/Elson Lagoon; it arrived at Peard Bay 22 days after radio-marking. The three other dunlin moved generally eastward after capture. One adult captured at an inland breeding location near Peard Bay moved northeast to Pt. Barrow (detected 51 days post-capture), another adult from an inland site near Prudhoe Bay moved east to the coast on the Sagavanirktok Delta (detected 70 days post-capture), and the third juvenile bird moved from its initial capture location at Kasegaluk Lagoon northeast to Pt. Barrow/Elson Lagoon (detected 20 days post-capture). The four adults we detected on the coast after they left their breeding territories moved an average of 56.9 ± 39.9 km between breeding and staging locations.

Movement patterns – red phalarope. The mean movement vector for red phalarope was approximately southeast, at 123.3° ± 90.3° (n = 5; Figure 7c). This represents an average between two groups of red phalaropes: two moving southwest and three moving northeast. Two juveniles moved southwest along the Chukchi coast after capture, from Pt. Barrow/Elson Lagoon to Peard Bay. One arrived in Peard Bay eight days after being captured at Pt. Barrow; the other arrived 23 days post-capture. Another reversed this pattern and moved northeast from Peard Bay to Pt. Barrow/Elson Lagoon in 13 days. A fourth also moved eastward, from the Colville Delta to the Sagavanirktok Delta in three days. The only adult we detected after initially capturing the bird at an inland breeding site near Peard Bay was detected 25.1 km east to the coast at Peard Bay after a 37-day hiatus.

Movement patterns – red-necked phalarope. The mean movement vector for red-necked phalarope was approximately west, at 288.5° ± 84.5° (n = 3; Figure 7d). This represents an average between two groups of red-necked phalaropes: two moving west and one moving east. Two juvenile red-necked phalaropes captured at the Okpilak Delta moved west across the Beaufort coast: one to the Canning Delta (detected nine days post-capture), and the other to the Ikpikpuk Delta (detected five days post-capture). Conversely, the single adult red-necked phalarope we tracked during the study moved from its breeding location at Prudhoe Bay to the Canning Delta and then to the Okpilak Delta. This bird moved at least 170.4 km and was located 25 days after being captured at the Okpilak. The final segment of his/her travel from the Canning Delta to the Okpilak Delta occurred in less than a day.

Objective 3: Physiological Assessment of Staging Site Quality

Triglyceride levels varied among species (likelihood ratio test: $\chi^2 = 52.9$, $P < 0.001$) although the shape of the relationship between species differed across years (year*species likelihood ratio test: $\chi^2 = 29.7$, $P < 0.001$; Figure 8). In 2005 western sandpipers had triglyceride levels intermediate between dunlin (lower) and semipalmated sandpipers (higher). In 2006 western and semipalmated sandpipers showed very similar levels. To assess whether different staging sites were of different quality (i.e., birds were able to acquire fat reserves at varying rates) in different years, we also investigated whether triglyceride levels varied by location and year. Because we had already demonstrated that species differ in terms of fattening rates, we restricted our analysis of location effects to a single species for which we had sufficient data (semipalmated sandpipers, n=217). We did not find a year effect on triglyceride levels (regression coefficient different than 0: $t = -0.48$, $P = 0.63$), but did find a difference between camps after combining data across years (likelihood ratio test: $\chi^2 = 20.34$, $P < 0.01$). Semipalmated sandpipers captured at Pt. Barrow/Elson Lagoon had higher triglyceride levels than those captured at any other camp (Figure 9).

Baseline corticosterone levels for semipalmated sandpipers differed across camps in 2006 (likelihood ratio test: $\chi^2 = 52.415$, $P < 0.001$), with birds captured at the Colville Delta camp exhibiting the highest levels and birds captured at Peard Bay having the lowest levels (Figure 10). Maximal corticosterone levels also differed across camps in 2006 (likelihood ratio test: $\chi^2 = 14.179$, $P = 0.015$), with birds captured at Pt. Barrow/Elson Lagoon and the Sagavanirktok Delta camps exhibiting highest levels and Kasegaluk Lagoon birds exhibiting lowest levels (Figure 11). There was insufficient data to analyze baseline or maximal corticosterone patterns in 2005.

Figure 8. Mean and 95% CI level of triglyceride concentration (in log[trig]+1) for dunlin (DUNL), semipalmated sandpipers (SESA) and western sandpipers (WESA) averaged across six ground camps on the North Slope in 2005 and 2006. Dotted lines show 95% confidence limits for the effect of species on triglyceride levels. Sample sizes given in parenthesis below species on x-axis.

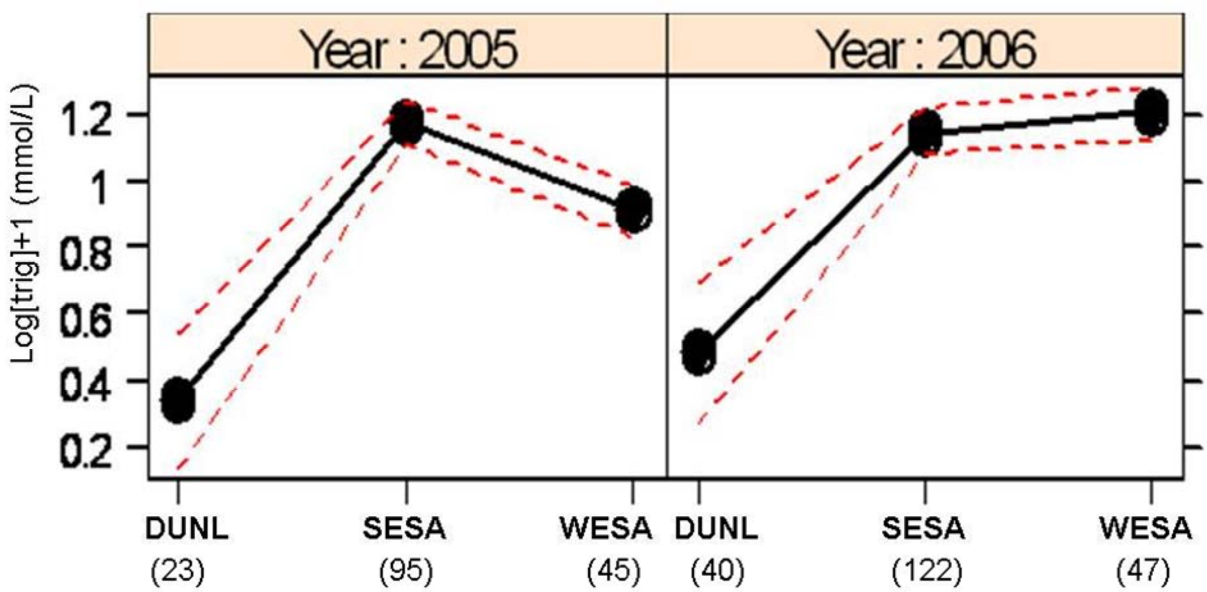


Figure 9. Mean and 95% CI level of triglyceride concentrations (in log[trig]+1) for semipalmated sandpipers captured at each of six ground camps on the North Slope, Alaska, 2005-2006. Dotted lines show 95% confidence limits for the effect of camp on triglyceride. Sample sizes given in parenthesis below camp names on x-axis.

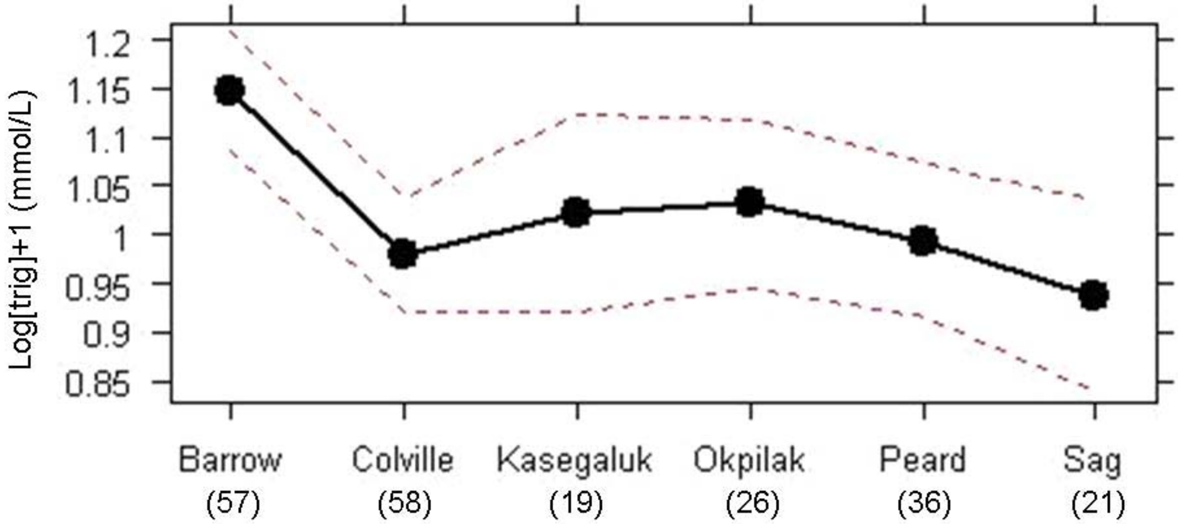


Figure 10. Mean and standard error levels of baseline corticosterone for semipalmated sandpipers captured at each of six ground camps on the North Slope, Alaska, 2006 only. Error bars show one standard error of the mean. Sample sizes given in parenthesis below camp names on x-axis.

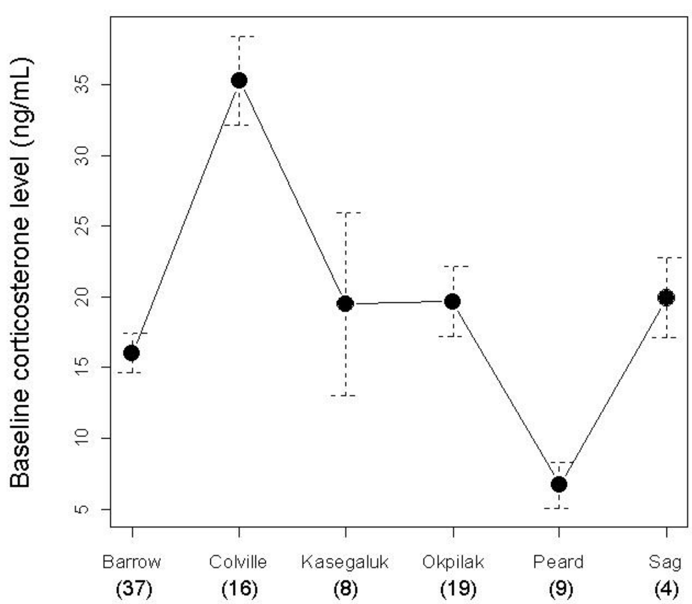
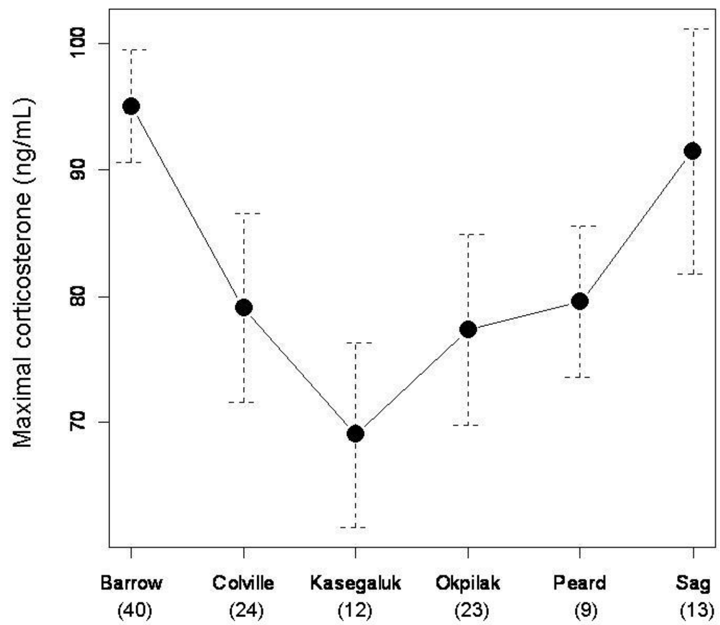


Figure 11. Mean and standard error levels of maximal corticosterone for semipalmated sandpipers captured at each of six ground camps on the North Slope, Alaska, 2006 only. Error bars show one standard error of the mean. Sample sizes given in parenthesis below camp names on x-axis.



DISCUSSION

Objective 1: Abundance, Distribution, and Species Composition

A primary goal of this research was to determine whether pre-migratory shorebirds exhibit a relatively uniform distribution across the North Slope, or whether there are distinct areas of concentration that persist across years. Based on previous research done in the late 1970's as part of the Outer Continental Shelf Environmental Assessment Program (OCSEAP; Connors *et al.* 1981), our prediction was that shorebird distribution would be non-uniform. We found support for this hypothesis: there were consistent shorebird concentration areas at Peard Bay, Pt. Barrow/Elson Lagoon, Cape Simpson, between Smith Bay and Cape Halkett, and at the Jago and Kongakut river deltas. Below, we compare our results to those reported by previous investigators (where they exist) for each of these concentration areas. We use Connors *et al.* (1981) where possible because this study examined many potential staging areas across the North Slope in terms of shorebird abundance, and assessed whether certain staging sites were concentration areas relative to others. Studies conducted at single locations are more difficult to compare to the present study because they provide little information on how shorebird abundance at that site compared to other sites during the same study period.

Peard Bay. Peard Bay had higher numbers of shorebirds than surrounding areas in 2005 and higher per-interval counts than other Region 1 areas in 2006. Gill *et al.* (1985) conducted three sets of aerial surveys along the shoreline of Peard Bay in 1983, and recorded lineal densities of shorebirds per km of shoreline surveyed. Higher per-km counts of shorebirds were recorded during their 10-14 August survey period than during the 15-20 July or 25 August-7 September survey periods. This corresponds to our results, wherein we recorded higher per-interval counts of shorebirds during the third survey in 2006 (9-17 August) than during other survey periods. They also found that shorebird concentrations at Peard Bay were less than those reported for Kasegaluk Lagoon by Lehnhausen and Quinlan (1981), although they recognized that interannual variability in staging shorebird numbers may preclude a comparison between a single year of data at Kasegaluk Lagoon and two different years of data at Peard Bay. Gill *et al.* (1985) considered Peard Bay to represent a transition zone between estuarine systems typical of the Arctic and those typical of more subarctic areas. If this transitional habitat is related to food availability, Peard Bay may attract birds migrating south from the Arctic as the first quasi-subarctic staging area on the Chukchi Sea.

Pt. Barrow/Elson Lagoon. We recorded the highest per-interval count of staging shorebirds of all surveyed regions in the Pt. Barrow/Elson Lagoon subregion during the third fixed-wing survey in 2006. Counts of birds in this subregion were comparatively high in 2005 and during the other 2006 surveys as well. Connors *et al.* (1981) reported both Pt. Barrow (at the western edge of this subregion) and the Plover Islands (the chain of barrier islands trending eastward from Pt. Barrow along the northern edge of Elson Lagoon) as having high densities of staging shorebirds during the OCSEAP study, although they did not survey the mainland coastline of this subregion. Connors *et al.* (1981) surmised that the extensive gravel spits and barrier islands of this area were attractive to staging shorebirds, particularly phalaropes.

Cape Simpson. The Cape Simpson subregion had large numbers of shorebirds in 2005 and high per-interval counts in the second, third, and fourth surveys in 2006. There are no other comparative data on staging shorebird abundance in Cape Simpson subregion. The Cape Simpson area is characterized by many small- to medium-sized lakes near the coastline, many of which show evidence of being breached by salt water during storms. This type of habitat is denoted as “tapped basins” by Jorgenson and Brown (2005) in their characterization of Beaufort Sea coastlines, and is found only near Cape Simpson and at Pitt Point/Pogik Bay. Given the large concentrations of staging shorebirds found in this subregion and at Pitt Point/Pogik Bay (see below), it is possible that this type of habitat is highly important to postbreeding shorebirds.

Smith Bay to Cape Halkett. The Smith Bay to Cape Halkett subregion had relatively high numbers of birds during the 2005 survey, and higher per-interval counts during the third and fourth surveys in 2006 than did other subregions in Region 2, although counts were lower than for Elson Lagoon or Cape Simpson. Interestingly, although they did not systematically survey the area, Connors *et al.* (1981) hypothesized that Pitt Point/Pogik Bay (in the Smith Bay to Cape Halkett subregion) might attract large concentrations of postbreeding shorebirds due to the presence of extensive littoral flats and lagoon/slough edge habitat (Figure 2b, circled region). We recorded large per-interval counts in both 2005 and the latter two surveys in 2006 at Pitt Point/Pogik Bay, where the habitat is also classified as “tapped basins” by Jorgenson and Brown (2005). The suitability of this type of habitat for staging shorebirds compared to other habitat types along the Beaufort Sea should be addressed in future studies.

Jago and Kongakut River deltas. Spindler (1978) conducted aerial surveys 0.5 km inland of the coast across the Arctic National Wildlife Refuge in the eastern Beaufort Sea. He recorded higher densities of shorebirds in the eastern lagoons of the Arctic National Wildlife Refuge (including the Jago and Kongakut deltas) than in the western lagoons, which was true in our study as well. The overall habitat of both deltas is similar (gentle shoreline slopes and sand/silt substrate; Jorgenson and Brown 2005), but is not substantially different than other deltas on the eastern Beaufort coast.

Other locations. Our study and Connors *et al.* (1981) had two shorebird concentration areas in common: Peard Bay and Pt. Barrow/Elson Lagoon. Connors *et al.* (1981) also considered the following to be shorebird concentration areas: Kasegaluk Lagoon (at Icy Cape), Fish Creek Delta (west of and adjacent to the Colville Delta), and the Jones Islands west of Prudhoe Bay. Although we did not consider Kasegaluk Lagoon to be a concentration area across years, it did have high numbers of shorebirds during our 2005 helicopter survey. Connors *et al.* (1981) recorded high levels of bird use at Icy Cape (located between Kasegaluk Lagoon N and S; Figure 2a) during the OCSEAP study (1974-1979), although visits to the Icy Cape area during this study were irregular and brief. Johnson *et al.* (1993) reported large numbers of shorebirds across the entire lagoon during aerial surveys from 1989-1991. Most notably, Johnson *et al.* (1993) recorded over 29,000 small shorebirds on the mudflats at the far southwestern end of Kasegaluk Lagoon on 26 August 1991. We did not find similar abundances during our surveys in 2005-2006; the total number of birds recorded in Kasegaluk Lagoon during the 2006 surveys ranged from 39-1606 total individuals per survey. We suspect that shorebird migration through Kasegaluk Lagoon may happen rapidly and that our surveys may have missed large pulses of birds moving through this area. For example, we flew the Kasegaluk Lagoon portion of our 2005 helicopter survey much earlier (7-8 August) than when Johnson *et al.* (1993) observed large numbers in late August. Similarly, we may have missed large concentrations between the third and fourth surveys (conducted 9 and 23 August, respectively) in 2006. Given the historically high numbers of birds in this area, Kasegaluk Lagoon may merit further investigation as a concentration area for shorebird staging/migration.

We did not observe large numbers of birds during any year or survey at Fish Creek Delta (located at the far east side of Harrison Bay; Figure 2b). In fact, the west side of Harrison Bay had the lowest per-interval counts of shorebirds of any of the subregions within Region 2. On the other hand, we have little data to address shorebird abundance along the Jones Islands west of Prudhoe Bay (located mainly in the Sagavanirktok River to Canning River subregion of Region 3) because weather prevented us from surveying these off-shore areas in a single-engine aircraft. Also of note is the fact that extensive areas of coastline were not surveyed during the Connors *et al.* (1981) study, particularly east of Prudhoe Bay, which may explain why no concentration areas were reported in this area in the OCSEAP study.

One other staging site that has been studied extensively is the Colville River Delta. We did not find this site to be a concentration area in this study. However, Andres (1989) reported the Colville Delta as being highly important to postbreeding dunlin, and estimated that upwards of 41,000 shorebirds (of multiple species) might pass through the Colville Delta during fall staging. It is possible that the enormous size and homogeneity of the delta (the area provides the most extensive salt marsh and mudflat habitat along the central Beaufort coast; Andres 1989) may have made it more difficult to locate shorebirds during aerial surveys, since it is the contrast of birds flying against background substrate and vegetation that enables their detection from the air (see below). Alternatively, if pulses of shorebirds move through the Colville Delta rapidly (as we suspected for Kasegaluk Lagoon), our aerial surveys conducted only four times throughout the staging period in 2006 may have missed large groups of birds migrating through the area. This seems less likely given that dunlin were the most numerous species present on the delta during Andres' study in 1989, and exhibited a time to departure of almost two weeks in our study. Thus individual dunlin on the Colville Delta were likely to be present for at least one of our aerial surveys in 2006 rather than moving through between surveys.

Deltas versus coastlines. Andres' (1989) assessment of the importance of the Colville River delta to staging dunlin led us to predict that other river deltas might attract large concentrations of staging shorebirds. Spindler (1979) also observed "pockets" of higher bird density (mostly phalaropes, pectoral sandpipers, loons, and diving ducks) during aerial surveys conducted 0.5 km inland of the coast in 1978 and 1979 on the Canning, Okpilak-Hulahula, Jago, and Aichilik deltas, indicating that at times, delta habitats may attract more birds than surrounding coastal areas. Contrary to this prediction, our data do not suggest that birds use deltas to the exclusion of coastal areas. In fact, our 2006 surveys indicated that when shorebirds occurred in high numbers on a given delta, they were also abundant on the nearby coastlines. Examples of this include the Kuparuk and Sagavanirktok river deltas and the Prudhoe Bay coast, and the Jago and Kongakut river deltas and the Beaufort Lagoon coast during the second fixed-wing survey in 2006. In addition, Pt. Barrow/Elson Lagoon and Cape Simpson, neither of which contains large river deltas, had the highest per-interval counts of all areas in 2006. It is possible that shorebirds migrate through coastal areas in waves, using different littoral habitats concurrently rather than cueing on specific coastal landforms. It is also possible that detectability of shorebirds is less on river deltas than along distinct coastlines due to the expansive, homogeneous nature of staging habitat on deltas compared to the more linear coastlines.

Variability and reliability of aerial surveys. Our aerial surveys indicated there was a high level of spatial and temporal variability in the number and location of shorebirds within and between years. Similar levels of variability have also been found during other aerial surveys conducted across the North Slope (Spindler 1979, Johnson *et al.* 1993, Gill *et al.* 1985). Such documented variability is likely a result of both sampling error and inherent variability in shorebird numbers caused by the underlying processes creating distribution and abundance patterns.

Sampling error arises if the likelihood of detecting an individual shorebird varies with size, behavior (i.e., flying or standing, in a group or by itself), what type of habitat it is using, the weather conditions when the survey was conducted, and other factors. If any of these factors affect detection, then the observed variation in aerial survey data across time or space may be an artifact of different detection rates rather than real differences in the numbers of shorebirds. We know that some of these factors are likely to affect our counts. For example, shorebirds are easier to see (and thus count) when in the water or the air and harder to see if they remain on the ground, especially in taller vegetation. Similarly, poor visibility from the aircraft, due to inclement weather, is likely to lead to an underestimate in the number of birds. Unfortunately our efforts to estimate detectability using Program DISTANCE (Thomas *et al.* 2005) proved unsuccessful due to a violation of key assumptions of this program.

Besides the difficulty of detecting birds, another component of sampling error relates to when surveys are conducted (i.e., sampling design). We conducted four fixed-wing surveys over the staging period in 2006 (a period of 37 days) to assess shorebird abundance and distribution across the North Slope coast. However, shorebird numbers could have varied widely between our survey dates. For example, our ground camp data from Kasegaluk Lagoon shows three distinct peaks of dunlin abundance with the highest count between 26 and 28 July. In contrast, our more limited aerial survey data indicated only a single peak for dunlin on 3 August. Similarly, Johnson *et al.* (1993) reported 5,364 small shorebirds in Kasegaluk Lagoon on 1 August 1991; the number jumped to 29,070 on 26 August 1991. It is unknown what number of shorebirds was present between these two dates, and whether the large number counted on 26 August 1991 was unusual.

Undoubtedly, inherent variability in shorebird numbers and distribution also occurs. Such variation arises from a variety of intrinsic and external factors, such as molt and migration schedules, breeding season termination date, weather conditions, coastal geomorphology and hydrology, and food availability. All of these factors are likely to vary across years, and some will vary within a season. For example, individual river deltas, lagoons, and shorelines may be extremely important to shorebirds during one portion of the season (or one year if conditions remain stable) and less important later on depending on shoreline availability, which changes with changing water levels caused by wind-driven waves. This is comparable to the unpredictable, ephemeral wetland complexes in the prairie pothole region of the Northern Great Plains, which have been shown to significantly affect the distribution of migrating small shorebirds (Skagen and Knopf 1993).

While we acknowledge these limitations of aerial surveys to detect true staging shorebird abundance and distribution, there currently is no better method available to survey such a large area (approximately 1000 km of coastline) or detect small birds that can not be detected remotely via satellite or GPS tracking devices. Further research will be required to determine adequate and efficient methods for estimating detection rates for aerial surveys of shorebirds. Additionally, surveys should be conducted over many years using similar methods to facilitate detecting trends in abundance even if true population size remains unknown.

Objective 2: Phenology, Habitat Use, Time to Departure, and Movement Patterns

Phenology. Red phalaropes were the most abundant species overall due to the exceptionally large numbers recorded at the Peard Bay and Pt. Barrow/Elson Lagoon camps. Semipalmated sandpipers showed the most consistent numbers across all camps, and the earliest peak of abundance. Dunlin and western sandpipers generally exhibited a later and more protracted peak of abundance than semipalmated sandpipers. Red and red-necked phalaropes were intermediate to and more variable than other species with respect to date and length of peak abundance.

We predicted that adult birds would arrive at and depart from coastal sites earlier in the staging period than would juveniles. The peak of abundance for adult semipalmated sandpipers was on average six days earlier than juveniles of the same species. The peak of abundance for adults of both phalarope species was also earlier than juveniles, although the magnitude of the difference varied between camps. Correspondingly, adults of these three species were absent from transects earlier than juveniles at most camps. This pattern is expected given that in most shorebird species, adults depart earlier than juveniles for southbound migration, leaving juvenile birds to find their own route south to wintering areas. On the other hand, dunlin did not show this pattern of adults arriving and departing earlier than juveniles; adult and juvenile dunlin were present at our ground camps until the end of the field season. The species-specific differences in adult vs. juvenile arrival and departure dates for semipalmated sandpipers and dunlin is likely related to molt and migration patterns. Semipalmated sandpipers tend to migrate south rapidly, then molt flight and body feathers at wintering areas (Gratto-Trevor 1992). Dunlin of both age groups tend to molt at postbreeding staging areas prior to migration, requiring simultaneous fattening and growth of new feathers (Warnock and Gill 1996). These two processes conflict energetically, resulting in this species likely needing a longer period of time to acquire the necessary fat resources for southbound migration. Adult birds are regrowing both flight and body feathers, whereas juveniles are only regrowing body feathers. The additional energetic constraint for adult dunlin of growing an entirely new set of feathers may explain why they do not exhibit the typical shorebird pattern of abandoning staging areas earlier than juveniles. These species-specific differences in molt and migration strategies may also explain why we observed that peak periods of abundance varied by species, as we predicted. Semipalmated sandpipers peaked in abundance earliest, then declined, whereas other species exhibited later and more protracted periods of peak abundance.

We also predicted that the peak of shorebird migration will be later as one moves from west to east across the North Slope. We found a west-to-east trend in date of peak abundance for semipalmated sandpipers, but not for western sandpipers. This contrasts with Connors (1983), who found a west-to-east trend for both species. Radio-equipped semipalmated sandpipers in our study moved almost exclusively eastward after departing from their tagging site, indicating a generally eastbound migration direction. The fact that we did not detect any radio-equipped western sandpipers at our coastal camps or ARTS stations after they left their tagging site is perhaps indicative of this species migrating away from the North Slope along an inland route rather than coastally as semipalmated sandpipers do. On the other hand, because western sandpipers were only common along the Chukchi Sea, we may have had limited ability to detect either a directional trend in peak abundance or movements of radio-equipped birds. In contrast to our prediction, dunlin did not exhibit an east-to-west trend in peak abundance at our ground camps despite their known pattern of migrating to Asia for the winter. This prediction is further countered by the fact that radio-equipped dunlin in our study showed a bi-directional movement pattern, with some birds migrating east along the North Slope and others migrating southwest along the Chukchi coast. Despite the known direction of migration in this species, individual birds may show a large degree of variability in movement pattern, perhaps reflecting their extended postbreeding period in northern Alaska that allows them to visit a range of sites prior to migration.

We noted a number of differences between our study and previous research on the phenology of staging on the North Slope. Lehnhausen and Quinlan (1981) reported a peak in dunlin use of beach transects at Kasegaluk Lagoon in mid August 1980, whereas the peak of dunlin abundance at Kasegaluk Lagoon in our study was approximately two weeks earlier. Similarly, Gill *et al.* (1985) reported a peak in red phalarope abundance at Peard Bay in mid-August in 1983; our data from Peard Bay indicate the peak in early August. Johnson (1978) recorded the highest densities of staging phalaropes at Simpson Lagoon (located on the Beaufort coast between the Colville

Delta and Prudhoe Bay) during 10-20 August 1977, whereas we observed the highest counts of phalaropes at least one week earlier at our camps on the Beaufort coast in 2005-2006. These differences are consistent with a pattern of earlier overall staging in recent years. Conversely, Johnson (1993) reported that western sandpipers were the most common small shorebird along Kasegaluk Lagoon shorelines in late July and early August 1990-1991. In our study, however, western sandpipers did not become more numerous than dunlin or semipalmated sandpipers until mid-August in 2006, possibly indicating a delay in the movement of western sandpiper juveniles from tundra breeding areas to coastal staging areas. Although our study was not designed to provide evidence of phenological change, our data may provide a baseline for developing testable hypotheses regarding the effects of climate change on the length and timing of shorebird staging on the North Slope.

Shorebird community characteristics. We found that species diversity (a combination of species richness and evenness) was lower on the Chukchi coast (Kasegaluk Lagoon, Peard Bay, and Pt. Barrow/Elson Lagoon camps combined) than on the Beaufort coast (Colville, Sagavanirktok, and Okpilak camps combined). The low evenness estimates for the Chukchi coast were likely due to dominance of the shorebird community by phalaropes at Peard Bay and Pt. Barrow/Elson Lagoon. In 2005, phalaropes comprised 80% and 75% of shorebird sightings at the Peard Bay and Pt. Barrow/Elson Lagoon camps, respectively. In 2006 the proportions were 82% and 97%. Because evenness is a component of diversity, it is logical to find that although species richness between the Chukchi and Beaufort regions was not significantly different in either year (and in fact, Pt. Barrow/Elson Lagoon had high species richness in both years of the study), diversity was lower on the Chukchi as a result of large numbers of phalaropes staging there. It should be noted that a reverse pattern was found when all staging birds (loons, waterfowl, shorebirds, and larids) were considered in species evenness and diversity measurements. Johnson *et al.* (1993) remarked that species richness and diversity at Kasegaluk Lagoon was much greater than similar lagoons along the central Alaska Beaufort Sea, mostly due to the dominance by long-tailed ducks (*Clangula hyemalis*) at most Beaufort sites.

Our prediction that species composition and abundance at coastal staging sites should reflect the surrounding breeding community (from Objective 1, but addressed with ground camp data) was supported in some cases. For example, four of our five common species (with the exception of western sandpipers) were recorded in more than 25% of the tundra plots surveyed by Johnson *et al.* (2007) in their investigation of the distribution of breeding shorebirds on the North Slope of Alaska. In both our study and that of Johnson *et al.* (2007), western sandpipers and red phalaropes were more commonly observed in western Beaufort plots than in eastern plots. In contrast, Johnson *et al.* (2007) also recorded pectoral sandpipers, long-billed dowitchers, and American golden-plovers in more than 25% of their survey plots. We did not observe any of these species however, as most typically staged in tundra habitats and therefore were not often recorded on coastal transects.

There were distinct differences in community composition at the Sagavanirktok Delta camps between years (more pectoral sandpipers and red-necked phalaropes in 2005; more semipalmated sandpipers and dunlin in 2006), but this is most likely a result of the camp moving locations from a more inland site in 2005 to a true river delta site in 2006. We believe the 2006 data more fully reflect patterns of species composition at the Sagavanirktok delta and suggest the 2005 data are more representative of inland sites typically dominated by species that tend to stage in tundra habitats (such as pectoral sandpipers) or near human settlements (red-necked phalaropes using the sewage pond in Deadhorse).

Habitat use. As we predicted, species differed in their postbreeding habitat use, and our determination of habitat selection by staging shorebirds was similar to that of Connors *et al.* (1981). Red phalaropes, ruddy turnstones, and sanderlings selected for gravel beaches, dunlin selected for mudflats, and long-billed dowitchers and pectoral sandpipers selected for slough or pond edge. Red-necked phalaropes in both studies presented a contrast to their sister species, red phalaropes, by preferring slough/pond edge, although in our study they were also found on gravel beaches.

Connors (1983) reported that semipalmated and western sandpipers at Pt. Barrow used similar foraging habitats. We found that across the entire North Slope, semipalmated sandpipers tended to select for mudflats, whereas western sandpipers selected for salt marsh and pond edge. Western sandpipers have longer bills, which allow them to forage in the slightly deeper water found in salt marsh and pond edge habitats on the North Slope. This separation of foraging habitat may reduce potential competition between these two otherwise similar species that overlap along Chukchi Sea staging areas. Lehnhausen and Quinlan (1981) and Gill *et al.* (1985) reported that dunlin at Icy Cape (Kasegaluk Lagoon) and Peard Bay also used salt marsh habitat extensively. We did not observe this, although our conclusions on habitat use can not be extended beyond our transects (i.e., dunlin may have been using salt marsh habitat outside of our transects). Andres (1989) found evidence to suggest that dunlin and sanderlings formed a foraging guild along shorelines at the Colville River delta, although dunlin were many times as numerous as sanderlings in these habitats. Across all North Slope locations we studied, dunlin and sanderlings did not forage in similar habitat: dunlin used mudflats while sanderlings used gravel beach. It is likely that sanderlings were using littoral flat and slough edges at the Colville delta in part due to a lack of gravel beaches at that site. The transects at the Colville Delta camp in our study did not include any gravel beach habitat, and only one sanderling was observed at that camp between 2005 and 2006.

Although we did not measure this directly, our observations suggest that wind speed/direction and rainfall can greatly influence the amount of local habitat availability to shorebirds for foraging. Data that inform predictions of how these factors affect water levels at coastal staging sites on the North Slope would be particularly useful in understanding the mechanisms underlying variation in shorebird distribution and habitat use. For example, a study on dunlin and semipalmated sandpipers at Pea Island (North Carolina) and Merritt Island (Florida) National Wildlife Refuges indicated the number of birds present decreased as water depth increased, and dunlin preferred deeper water than semipalmated sandpipers at local scales (Collazo *et al.* 2002). The depth of water along shorelines and in coastal ponds and lagoons sites is also important because shorebird species staging on the North Slope differ generally in size, and particularly in tarsus and bill length (both morphological characteristics that determine the depth of water in which the species is able to feed). Thus variation in water levels may affect not only habitat use but also species composition at a particular location.

Time to departure. We predicted there would be species-specific differences in the amount of time each species spent staging on the North Slope. Our best model for time to departure was one with no species effect, while our second best model indicated a species effect on time to departure, combining both phalarope species into one. There was substantial support in the data for the second best model (ΔQAICc ~ 2) and we believe that species-specific differences in time to departure are logical based on our understanding of each species' molt and migration patterns. As discussed above, semipalmated sandpipers migrate to South America, then molt into winter plumage, whereas dunlin molt all feathers (adults) or body feathers (juveniles) prior to fall migration in a energetically-demanding process that may reduce an individual's ability to rapidly acquire fat reserves (Gratto-Trevor 1992, Holmes 1971, Holmes 1972, Warnock and Gill 1996). Because the proportion of fat to body mass likely determines when a bird is ready to depart on southbound migration (Lindstrom and Alerstam 1992), birds that are fattening more slowly may remain at staging areas longer than birds that are fattening rapidly. If this is true, we should expect semipalmated sandpipers to stage for a relatively short period of time while dunlin should stage for longer; this prediction was supported by our time to departure results. Adult and juvenile western sandpipers are thought to undergo a partial molt of body feathers on the breeding grounds, then suspend molt and complete the process on the wintering grounds (Wilson 1994). We should thus expect western sandpipers to fatten at a rate intermediate to dunlin or semipalmated sandpipers, and should exhibit an intermediate departure time. Our data also supported this prediction, at least in 2005. We also captured many juvenile birds on the Chukchi coast in varying stages of body molt (A.Taylor, unpub. data).

We have less confidence in our ability to explain time to departure results for phalaropes, because they spend some unknown portion of time feeding pelagically during the staging period and thus become unavailable for detection by coast-based telemetry methods. The relatively short time to departure exhibited by the phalarope species may reflect birds moving on- and off-shore rather than actually departing individual staging sites. More intense tracking efforts involving aerial telemetry flights for radio-equipped phalaropes would be necessary to determine their time to departure, and help reduce uncertainties in the encounter histories used to construct the time to departure models. The latter effect would lessen the variability of the results particularly for species with longer times to departure. For example, many radio-equipped individuals (of all species) were detected at their capture site for a short period of time immediately after tagging. Some of these were later heard at the same site after a period of absence. These gaps in the encounter histories during which birds appeared to be absent, but may have been present yet undetected, create high levels of sampling error and thus variability in the data. Species with longer times to departure have more instances of uncertain encounter histories and thus increased variance. Additional efforts to track birds beyond the immediate study area (possibly using aerial telemetry flights) would help ascertain whether a bird has truly left its capture site or is merely beyond the range of ground-based telemetry efforts.

Movement patterns. We predicted that shorebirds would be more likely to stage near where they bred earlier in the staging period, whereas concentrations of birds observed later in the staging period would be more likely to be from outside the local breeding community. Our limited number of resightings of adult shorebirds that were equipped with radios at breeding locations indicated they moved to nearby coastal areas. Although few adults were detected at more than one coastal location, movement patterns of radio-equipped juveniles captured at staging sites later in the season indicated that many individuals moved away from their initial tagging location while still remaining on the North Slope coast. These results taken together suggest that a concentration of adult shorebirds at a given location early in the staging period is likely comprised of birds from the local breeding area. While later in the staging period, concentrations of birds (both adults and juveniles) may represent individuals from a much wider range as birds move between areas.

Warnock and Gill (1996) suggest that because dunlin from northern Alaska (*arcticola* subspecies) migrate to Asia for the winter, individuals of this subspecies likely move west from the North Slope to western Alaska prior to migration across the Bering Sea. However, we documented movements of this species both east and west across the study area. Andres (1989) also observed bi-directional movements of dunlin: in his study, 67% of Dunlin staging at the Colville River Delta moved west but 22% moved east toward Canada. It is currently unknown whether some *arcticola* dunlin migrate south through the Great Plains or along the Atlantic coast, as the *hudsonia* subspecies breeding in Canada does. This seems unlikely since no marked *arcticola* dunlin have been resighted south of Alaska, but the possibility merits further study because *arcticola* dunlin are considered a bird of conservation concern (U.S. Fish and Wildlife Service 2008).

Given known molt and migration patterns of semipalmated sandpipers (described above), we predicted this species to exhibit a relatively brief staging period in northern Alaska, with individuals departing for wintering grounds earlier than other species. Our data on semipalmated sandpiper movements indicated that individuals move rapidly along the Chukchi and Beaufort coasts to the eastern side of the North Slope, often covering the >100 km between detection locations in less than a day. This pattern is consistent with our hypothesis that birds moving between North Slope staging sites may reflect a continuous directional migration of this species along the coastline rather than multiple staging events, and suggests that detections of individuals at multiple sites likely reflect migratory movements (with little or no stopover) rather than refueling events. We also examined the possibility that semipalmated sandpipers migrating south from the North Slope may use the Canning River as a migration corridor. Flock (1973) surmised that radar observations of birds flying eastward past Distant Early Warning stations on the North Slope were likely shorebirds heading east to the McKenzie River delta, where they might head south, using the river as a navigational landmark. In our study, 19 of 30 radio-equipped semipalmated sandpipers were detected at the Canning River (either on the delta or along the river itself) post-capture, and no individuals were detected east of the Canning River. One individual radio-marked at East Arey Lagoon near Barter Island was later detected at the Canning Delta ARTS, having moved west (contrary to the predominant direction of semipalmated sandpiper movement) to reach the vicinity of the Canning River. One interpretation of these data is that semipalmated sandpipers from northern Alaska may use the Canning River as a migration route to interior Alaska. The Canning (which runs from the Continental Divide in the Brooks Range to the coast) is a logical choice for the first leg of the journey south through Alaska for several reasons: 1) Carter Pass (at the headwaters of the Canning) is a relatively low pass that might be easy for migrating birds to cross, and 2) the south side of Carter Pass is very close to the Spring Creek drainage of the Junjik River, which has significant riparian habitat and thus could serve as a recognizable landmark. From the Junjik drainage, migrating birds could follow the Yukon and Tanana Rivers through the flats of interior

Alaska, joining up with the Copper River through the Chugach Mountains of southern Alaska. This interpretation is supported by the resighting of a semipalmated sandpiper, originally color-marked at Pt. Barrow on 19 August 2005, on the Copper River Delta on 1 September 2005, 12 days post-capture (R. Gates, Prince William Sound Science Center, *pers. comm.*).

Our movement pattern results point to the connectivity of the larger North Slope landscape for postbreeding shorebirds. Individual radio-marked birds in our study moved widely between staging areas on a regional scale, stopping over at a given site for a variable length of time depending on species. Thus assessments of staging shorebird abundance and distribution on the North Slope should take into account this movement propensity such that the possibility of double-counting individuals across survey periods is minimized. Double-counting would inflate the number of shorebirds recorded at coastal staging areas on the North Slope and bias high estimates of population size.

Our radio telemetry data should be viewed as descriptive of general patterns and timing of movements rather than as a quantitative analysis of distances moved, phenology, or survival of radio-marked birds because of our limited sample sizes. Managers utilizing these results or researchers planning additional telemetry studies should be aware of the limitations of radio telemetry for detecting movements of small, mobile birds. First, radio telemetry data may represent only a segment of each possible movement trajectory, thus individuals may have moved through our North Slope study area both before and after we detected them at a particular staging area. Movement patterns we report are thus conservative estimates of the timing and number of locations used by migrating shorebirds on the North Slope; individuals may have remained longer and used additional sites than we were able to record. Second, detection probabilities for different listening methods (ARTS vs. manual telemetry vs. aerial telemetry) are likely dissimilar. In this study, 85% of detections of shorebirds at locations other than their initial capture site came from ARTS stations, probably because the ARTS collected data continuously whereas aerial and manual telemetry efforts were limited by research schedules, weather, and plane availability. However, due to the expansive nature of our North Slope study area, we did not have complete coverage by the network of ARTS, which are only capable of detecting birds within a 3-5 km (diameter) area around each station. Thus a radio-equipped bird could have been present at a staging site but not detected because it was outside the listening area of the ARTS, and was present between bouts of aerial or manual telemetry. The fact that we were only able to detect movements of 44 (out of 357) radio-equipped shorebirds reflects these limitations. However, radio telemetry provided the only reasonable means by which to obtain data on shorebird use of a vast landscape such as the North Slope; band or mark resighting methods would have resulted in a much lower detection probability (Plissner *et al.* 2000).

Objective 3: Physiological Assessment of Staging Site Quality

We found some evidence for interspecific differences in fattening rates of semipalmated sandpipers, dunlin, and western sandpipers staging on the North Slope. Because both pre-migratory fattening and feather molt are energetically costly processes, it is logical to predict that a bird undergoing both at the same time will fatten less quickly than a bird that is not molting. As a species, semipalmated sandpipers, which stage, migrate, then molt, should be able to fatten more quickly than dunlin, which stage and molt at the same time. Western sandpipers should fatten at an intermediate rate because they sometimes, but not always, molt during staging or migration. In 2005, species-specific patterns in fattening rates matched these predictions. Data from 2006 were less conclusive because both semipalmated and western sandpipers showed similar fattening rates. Additional years of data would be necessary to determine which pattern is typical for differences in fattening rates across these three species.

Our ultimate goal for this portion of our research was to determine whether differences in staging site quality across the North Slope were quantifiable on the basis of fattening rates, using triglyceride concentrations as an index. We predicted that sites where birds were fattening more rapidly, as indicated by higher triglyceride levels, would also have higher invertebrate density. We were able to examine this prediction for only the semipalmated sandpiper because our sample size was limited and our earlier results indicated that species varied in triglyceride levels after controlling for individual mass and capture date, thus comparisons across species within a given location may not be valid. We found that semipalmated sandpipers captured at Pt. Barrow/Elson Lagoon had higher triglyceride levels than semipalmated sandpipers captured at any other site. An exploratory analysis of invertebrate samples collected at shorebird staging locations (in mudflat, salt marsh, or gravel beach habitats) at each field camp indicated that Pt. Barrow/Elson Lagoon had higher invertebrate density and diversity than any other camp (A. Burr and A. Taylor, University of Alaska Fairbanks, *unpub. data*). Although these analyses are preliminary, they suggest that staging site quality, as measured by invertebrate abundance in suitable foraging habitat, may be detectable via plasma metabolite (triglyceride) analysis. If a rapid assessment of comparative site quality is needed, it may be relatively easier to capture staging shorebirds for blood sampling and conduct subsequent triglyceride assays than to attempt a field-based assessment of food availability. The latter requires knowledge of invertebrate taxonomy, distribution, and diversity to design an appropriate study, and the necessary data is very time-consuming to collect and analyze. As described in the methods for this objective, a potential drawback to the triglyceride method is that birds must remain at a given site for long enough that a bird sampled for its triglyceride level at that site will not have just arrived from another site, such that its triglyceride level reflects food availability elsewhere. Triglyceride levels likely reflect a bird's fattening rate over the previous 1-2 days (Williams *et al.* 1999). In this study, our time to departure results indicate that shorebirds stage at a single location for at least 4.5 to 13.9 days on average, depending on the species. Therefore it is likely that the majority of birds we sampled for triglyceride levels had been at the location where we sampled them for longer than 1-2 days.

Our results for the effect of location on baseline and maximal corticosterone levels were equivocal. Baseline corticosterone levels were highest at the Colville Delta camp and lowest at the Sagavanirktok Delta camp, whereas maximal corticosterone levels were highest at Pt. Barrow/Elson Lagoon and the Sagavanirktok Delta camps and lowest at Kasegaluk Lagoon. If corticosterone levels are related to site quality stemming from food availability, baseline levels should have been highest (to stimulate foraging) at camps where food availability and therefore body condition was lowest. Correspondingly, maximal levels should have been lowest (indicating a reduction in birds' ability to respond to a stressful event such as capture and handling) where baseline levels are highest. If these relationships had been supported by our data, we should have observed opposite trends in baseline and maximal corticosterone levels. For example, if baseline levels were highest at the Colville camp, maximal levels should have been lowest there. Also, given that triglyceride levels suggested that fattening rates in semipalmated sandpipers were highest at Pt. Barrow/Elson Lagoon, we expected to see the lowest baseline corticosterone levels and highest maximal corticosterone levels there. We did see high maximal corticosterone levels at Pt. Barrow/Elson Lagoon but not especially low baseline levels. However, corticosterone is thought to regulate many physiological processes having to do with cessation of breeding activity and subsequent preparation for migration (Romero 2002). Our ability to utilize corticosterone levels as an indication of site quality may be confounded by the individual physiology of birds in varying stages of transition between breeding and migratory readiness. We suggest that future emphasis be placed on using triglyceride levels as indicators of site quality because interpretation of site-specific differences may be less influenced by individual physiology of the sampled birds.

CONCLUSIONS

Important Staging Sites on Alaska's North Slope

Our data provide a first step toward identifying sites that are important to the postbreeding shorebird community on the North Slope. From our aerial surveys for abundance and distribution, we determined that Peard Bay, Pt. Barrow/Elson Lagoon, Cape Simpson, Smith Bay to Cape Halkett (including Pitt Point/Pogik Bay), Camden Bay, and the Jago and Kongakut River deltas were important staging areas for postbreeding shorebirds. Our comparison of data obtained from our ground camps at Kasegaluk Lagoon, Peard Bay, Pt. Barrow/Elson Lagoon, Colville Delta, Sagavanirktok Delta, and Okpilak Delta indicated that in terms of the total number of staging shorebirds, species richness, and fattening rates of semipalmated sandpipers, Pt. Barrow/Elson Lagoon was the most important of the six likely staging areas. Development or other anthropogenic activities occurring on the mainland coast of the Pt. Barrow/Elson Lagoon area, or along the Plover Islands barrier island chain, are likely to impact larger numbers and a greater diversity of staging shorebirds than in other areas. However, the scale at which we collected data for each portion of the study precluded exact comparisons of staging site quality or importance.

Our data from this study provide a baseline for future research on postbreeding shorebird abundance, distribution, and staging ecology on the North Slope of Alaska. We suggest other investigators, particularly those examining areas to be impacted by development or disturbance, utilize our data to understand how a particular area of interest may contribute to preparing shorebirds for fall migration. In particular, our results indicate that postbreeding shorebirds are highly mobile, and thus different staging areas may be important at different times or for different purposes. For example, the Canning River delta did not generally have large concentrations of shorebirds during our aerial surveys, yet our movement data for semipalmated sandpipers indicate that this may be an important landmark for birds migrating south through Alaska.

A qualitative comparison of our aerial and ground survey data indicates the aerial survey data may be able to detect general patterns in shorebird numbers and distribution, but should be combined with on-the-ground investigation of species composition, phenological patterns, and habitat use in order to properly interpret survey results and correct for detectability of different species in different habitats. If aerial surveys are chosen as the sole method for determining staging site importance based on abundance of birds through time, we recommend more frequent aerial surveys be conducted to avoid missing occasions when shorebirds peak at a given staging site. Our ground camp data indicated that large fluctuations in abundance of shorebirds may occur within as few as three days; aerial surveys conducted at longer time intervals would not capture these fluctuations. Total population estimates for the entire staging period would thus be biased in an unknown direction if based solely on aerial surveys. Repeating aerial surveys over many years using the same methods would also provide information on the degree of inherent variability in shorebird numbers over time, which is necessary to detect trends in population size resulting from natural or anthropogenic causes. Unfortunately, we suspect that in many cases, financial costs and logistics (e.g., weather) may inhibit implementation of this approach.

Potential Effects of Development on Staging Shorebirds

Our research highlights the number and mobility of staging shorebirds using North Slope coastlines prior to fall migration. This suggests that it is important to consider that industrial activities and environmental change occurring in one location may impact shorebirds breeding and/or staging in other locations, and that protection of single, small staging areas without maintenance of connectivity is unlikely to be an effective conservation strategy for shorebird habitat on the North Slope. Given existing infrastructure, and the predicted increase in both oil and gas development and its associated human footprint across Arctic Alaska (Bird *et al.* 2008), the potential exists for a significant contaminant spill to occur in coastal or nearshore habitats during the ice-free season, when birds are present in these areas. Our data imply that such an event could impact a large segment of a shorebird species or population because birds from a wide geographic area pass through and congregate at a given staging area. Impacts from such a spill should be also considered on a species-specific basis, because some species (e.g., dunlin) remain at staging areas for longer than others (e.g. semipalmated sandpipers). In addition, our data indicate that not all apparently suitable staging habitat on the North Slope is important to postbreeding shorebirds; certain areas attracted large numbers of shorebirds during our study (e.g., Pt. Barrow/Elson Lagoon) while other seemingly attractive areas did not appear to be as heavily used (e.g. many river deltas on the eastern Beaufort coast). Industrial development or anthropogenic disturbance would have a larger impact on shorebirds at heavily used or important sites than at sites of lesser importance.

Lastly, increasing anthropogenic disturbance near existing and future infrastructure could affect patterns of species prevalence, distribution, and habitat use in unpredictable ways if presently uncommon types of habitats (such as roads, pipelines, housing tracts, or sewage lagoons) become more prevalent. For example, over the course of the staging period in 2006, we counted 5,512 phalaropes in the Barrow sewage treatment lagoon (Middle Salt Lagoon). These individuals were not included in our analysis of abundance or habitat use because they were not located on our survey transects, and there was no comparable habitat type at the other staging sites we studied. However, the number of phalaropes observed at Middle Salt Lagoon would have greatly increased the total number of birds seen at Pt. Barrow/Elson Lagoon during the staging period if we had added them to our analysis. This example may foreshadow the degree to which environmental change and development could affect distribution and habitat use of staging shorebirds. It will be necessary to repeat studies such as ours (perhaps on a more limited spatial scale) to monitor changes resulting from changing environmental conditions on the North Slope.

DATA AVAILABILITY

The aerial survey data collected during this project are available either in Excel spreadsheet or ArcGIS shapefile format. The ground camp transect data are available as Excel spreadsheet files. There is also a metadata file (written to FDGC standards) available that describes the data collection and analysis methodology. Contact the Coastal Marine Institute, Minerals Management Service, or A. Taylor (audreyrebeccataylor@gmail.com) to obtain any of these documents.

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STUDY PRODUCTS

Taylor, A.R., A.N. Powell, and R.B. Lanctot. October 2008. Distribution and movements of staging shorebirds on Alaska's North Slope. Minerals Management Service, 11th Information Transfer Meeting, Anchorage, AK (oral presentation by A. Powell).

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Appendix 1. Number of radio transmitters deployed per camp, species, and age group on the North Slope in 2005-2006. Only adult birds (no juveniles hatched yet) were equipped with radio during breeding season. See text for description of general locations. DUNL = dunlin, REPH = red phalarope, RNPH = red-necked phalarope, SESA = semipalmated sandpiper, WESA = western sandpiper.

Season	Location	Species	2005 HY	2005 AHY	2006 HY	2006 AHY	2007 HY	2007 AHY
Breeding	Barrow	DUNL		8		5		10
		SESA		3		5		0
		REPH		5		5		0
	NPR-A[1]	DUNL		6		10		0
		SESA		7		10		0
		REPH		10		10		0
	Prudhoe Bay	DUNL		0		5		0
		SESA		3		5		0
		RNPH		0		4		0
	Canning	DUNL		0		4		0
		SESA		3		5		0
		RNPH		4		4		0
	Arctic Refuge[2]	SESA		0		8		13
		RNPH		0		8		0
Total breeding				*49*		*88*		*23*
Post-breeding	Kasegaluk	DUNL	0	0	3	3	0	0
		SESA	0	0	4	1	0	0
		REPH	0	0	4	0	0	0
		RNPH	0	0	0	1	0	0
		WESA	0	0	4	0	0	0
	Peard Bay	DUNL	3	0	0	0	0	0
		SESA	5	0	5	0	0	0
		REPH	6	0	5	0	0	0
		RNPH	0	0	3	0	0	0
		WESA	0	0	3	0	0	0
	Barrow	DUNL	3	0	11	0	0	0
		SESA	5	0	5	0	0	0
		REPH	6	0	5	0	0	0
		RNPH	0	0	1	0	0	0
		WESA	5	0	4	0	0	0
	Colville	DUNL	4	0	6	0	0	0
		SESA	4	1	3	2	0	0
		REPH	3	0	3	0	0	0
		RNPH	3	0	2	1	0	0
	Sag	DUNL	0	0	5	1	0	0
		SESA	4	0	5	0	0	0
		RNPH	4	0	3	0	0	0
	Okpilak	DUNL	0	0	0	0	0	0
		SESA	6	7	10	0	1	14
		RNPH	2	5	4	1	0	0
		WESA	1	1	0	0	0	0
Total post-breeding			*64*	*14*	*98*	*10*	*1*	*14*

[1]NPR-A locations: 2005: 6 miles southeast of Teshekpuk Lake (70.4°N, 153.1°W) and 5 miles west of Atqasuk, AK (70.5°N, 157.7°W). 2006: inland of Kasegaluk Lagoon (70.5°N, 160.4°W), inland of Peard Bay (70.6°N, 158.3°W), inland of Barrow (71.0°N, 156.3°W), inland of Colville Delta (70.8°N, 154.0°W).

[2]Arctic Refuge locations: 2006: Jago-Bitty (69.7°N, 143.7°W), Jago Delta (70.1°N, 143.2°W), East Arey Lagoon (70.1°N, 143.7°W), 2007: Canning River Delta (70.146°N, 145.866°W).

Appendix 2. Raw data from aerial surveys for shorebird distribution conducted on the North Slope, 2005-2007. Appendix available electronically as Excel spreadsheet from MMS. The file contains six spreadsheets containing raw survey data for: 1) 2005 helicopter survey, 2) all four 2006 fixed-wing surveys, and 3) 2007 fixed-wing survey conducted only in Arctic National Wildlife Refuge. In 2005 helicopter survey Flock Size is the category for the number of birds observed in a 2-minute interval ending at given point (0=0-49 birds, 50=50-99 birds, 100=100-499 birds, 500=500-999 birds, 1000=≥1000 birds)

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
001	71.16413891	-157.04889008	0	CRTD 12:39 07-AUG-05
002	71.07363582	-157.20673271	0	CRTD 12:53 07-AUG-05
003	71.00093186	-157.36111530	0	CRTD 13:00 07-AUG-05
004	70.93651593	-157.54964241	0	CRTD 13:06 07-AUG-05
005	70.87446570	-157.77669677	0	CRTD 13:13 07-AUG-05
006	70.83379805	-158.01791855	0	CRTD 13:20 07-AUG-05
007	70.81855774	-158.19876381	0	CRTD 13:24 07-AUG-05
008	70.81809640	-158.20468077	100	CRTD 13:24 07-AUG-05
009	70.81726491	-158.22722741	100	CRTD 13:25 07-AUG-05
010	70.81795156	-158.29531797	0	CRTD 13:27 07-AUG-05
011	70.82791328	-158.42070588	0	CRTD 13:31 07-AUG-05
012	70.82850873	-158.42522272	100	CRTD 13:31 07-AUG-05
013	70.82894862	-158.44767817	100	CRTD 13:34 07-AUG-05
014	70.82068205	-158.39198478	100	CRTD 13:35 07-AUG-05
015	70.81659436	-158.29167017	0	CRTD 13:38 07-AUG-05
016	70.80172420	-158.38223764	0	CRTD 15:32 07-AUG-05
017	70.79873621	-158.39815387	0	CRTD 15:33 07-AUG-05
018	70.80566704	-158.45358976	0	CRTD 15:35 07-AUG-05
019	70.79285681	-158.51613888	0	CRTD 15:37 07-AUG-05
020	70.79526007	-158.57044824	0	CRTD 15:39 07-AUG-05
021	70.78754067	-158.63435456	0	CRTD 15:41 07-AUG-05
022	70.78788936	-158.74278554	0	CRTD 15:44 07-AUG-05
023	70.78985274	-158.81186851	0	CRTD 15:46 07-AUG-05
024	70.79270124	-158.88338693	0	CRTD 15:48 07-AUG-05
025	70.79813540	-158.95844587	0	CRTD 15:50 07-AUG-05
026	70.79828024	-158.95958313	0	CRTD 15:50 07-AUG-05
027	70.81173412	-159.03499075	0	CRTD 15:52 07-AUG-05
028	70.81195951	-159.03621384	0	CRTD 15:52 07-AUG-05
029	70.80429375	-159.06667837	0	CRTD 15:54 07-AUG-05
030	70.79240620	-158.97636839	0	CRTD 15:56 07-AUG-05
031	70.79230964	-158.97434064	0	CRTD 15:56 07-AUG-05
032	70.79207361	-158.97161015	0	CRTD 15:56 07-AUG-05
033	70.79161763	-158.96929809	0	CRTD 15:56 07-AUG-05
034	70.77296555	-158.95921835	0	CRTD 15:58 07-AUG-05
035	70.76450050	-159.02464279	0	CRTD 16:00 07-AUG-05
036	70.76928556	-159.06233319	0	CRTD 16:02 07-AUG-05
037	70.75908780	-159.12113794	0	CRTD 16:04 07-AUG-05
038	70.76098144	-159.17642900	0	CRTD 16:06 07-AUG-05
039	70.77007413	-159.23851677	0	CRTD 16:08 07-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
040	70.75550973	-159.27166888	0	CRTD 16:10 07-AUG-05
041	70.73626220	-159.28631374	0	CRTD 16:12 07-AUG-05
042	70.76809466	-159.30967041	0	CRTD 16:14 07-AUG-05
043	70.79323769	-159.34208759	0	CRTD 16:16 07-AUG-05
044	70.80599427	-159.31247064	0	CRTD 16:23 07-AUG-05
045	70.81332207	-159.23183271	0	CRTD 16:25 07-AUG-05
046	70.81904054	-159.11833772	0	CRTD 16:27 07-AUG-05
047	70.83940387	-159.15309378	0	CRTD 16:29 07-AUG-05
048	70.85516453	-159.18231376	0	CRTD 16:31 07-AUG-05
049	70.84588408	-159.22974058	0	CRTD 16:33 07-AUG-05
050	70.84434986	-159.25518402	0	CRTD 16:34 07-AUG-05
051	70.84461808	-159.31039461	0	CRTD 16:36 07-AUG-05
052	70.84433377	-159.35273060	100	CRTD 16:38 07-AUG-05
053	70.84102929	-159.38821622	0	CRTD 16:40 07-AUG-05
054	70.84603965	-159.35613700	0	CRTD 17:00 07-AUG-05
055	70.85800231	-159.26661559	50	CRTD 17:02 07-AUG-05
056	70.86925149	-159.15605494	0	CRTD 17:04 07-AUG-05
057	70.88131070	-159.04140123	0	CRTD 17:06 07-AUG-05
058	70.89440525	-158.92432817	0	CRTD 17:08 07-AUG-05
059	70.90678096	-158.80908438	50	CRTD 17:10 07-AUG-05
060	70.88729203	-158.70942959	100	CRTD 17:12 07-AUG-05
061	70.85834563	-158.65053364	0	CRTD 17:14 07-AUG-05
062	70.83814323	-158.52624008	50	CRTD 17:16 07-AUG-05
063	70.82551003	-158.41555604	100	CRTD 17:18 07-AUG-05
064	70.81793547	-158.31820258	100	CRTD 17:20 07-AUG-05
065	70.81705570	-158.23282787	100	CRTD 17:21 07-AUG-05
066	70.82641125	-159.47025427	0	CRTD 09:55 08-AUG-05
067	70.80200851	-159.60625836	0	CRTD 09:58 08-AUG-05
068	70.78735292	-159.66422089	0	CRTD 10:00 08-AUG-05
069	70.76855600	-159.71215733	0	CRTD 10:02 08-AUG-05
070	70.74511886	-159.76757714	0	CRTD 10:04 08-AUG-05
071	70.72183728	-159.83003506	0	CRTD 10:06 08-AUG-05
072	70.69893658	-159.89989051	0	CRTD 10:08 08-AUG-05
073	70.67019403	-159.97014829	0	CRTD 10:10 08-AUG-05
074	70.64815700	-160.01988181	0	CRTD 10:12 08-AUG-05
075	70.63078701	-160.04949340	0	CRTD 10:58 08-AUG-05
076	70.60603023	-160.11754104	0	CRTD 11:00 08-AUG-05
077	70.58788776	-160.14931449	0	CRTD 11:02 08-AUG-05
078	70.57181597	-160.18631824	0	CRTD 11:04 08-AUG-05
079	70.55712283	-160.22112259	0	CRTD 11:06 08-AUG-05
080	70.53766072	-160.27423033	0	CRTD 11:08 08-AUG-05
081	70.51724374	-160.32807299	0	CRTD 11:10 08-AUG-05
082	70.49721837	-160.38591214	0	CRTD 11:12 08-AUG-05
083	70.47931194	-160.44053265	0	CRTD 11:14 08-AUG-05
084	70.46331525	-160.48674175	0	CRTD 11:16 08-AUG-05
085	70.44674993	-160.53687760	0	CRTD 11:18 08-AUG-05
086	70.43024361	-160.59575745	0	CRTD 11:20 08-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
087	70.41693985	-160.64611324	0	CRTD 11:22 08-AUG-05
088	70.40283680	-160.70262739	0	CRTD 11:24 08-AUG-05
089	70.39194703	-160.74567684	0	CRTD 11:26 08-AUG-05
090	70.37847698	-160.79689630	0	CRTD 11:28 08-AUG-05
091	70.36711514	-160.85345873	0	CRTD 11:30 08-AUG-05
092	70.35511494	-160.91612049	50	CRTD 11:32 08-AUG-05
093	70.34219205	-160.97681888	0	CRTD 11:34 08-AUG-05
094	70.33034205	-161.04627737	0	CRTD 11:36 08-AUG-05
095	70.32160878	-161.11435183	0	CRTD 11:38 08-AUG-05
096	70.31105697	-161.18422338	0	CRTD 11:40 08-AUG-05
098	70.28927207	-161.31024965	0	CRTD 11:44 08-AUG-05
099	70.29412687	-161.40825757	0	CRTD 11:47 08-AUG-05
100	70.29511392	-161.47861191	0	CRTD 11:49 08-AUG-05
101	70.29855251	-161.54850491	0	CRTD 11:51 08-AUG-05
102	70.30657232	-161.64114305	0	CRTD 11:53 08-AUG-05
103	70.31363726	-161.71271511	0	CRTD 11:55 08-AUG-05
104	70.32100260	-161.78639003	0	CRTD 11:57 08-AUG-05
105	70.32530487	-161.86158308	0	CRTD 11:59 08-AUG-05
106	70.31998873	-161.90345773	0	CRTD 12:01 08-AUG-05
107	70.30331612	-161.95189842	0	CRTD 12:03 08-AUG-05
108	70.29095113	-161.99819871	50	CRTD 12:05 08-AUG-05
109	70.28118789	-162.03831383	0	CRTD 12:07 08-AUG-05
110	70.26534140	-162.08473214	0	CRTD 12:09 08-AUG-05
111	70.25173187	-162.13525423	0	CRTD 12:11 08-AUG-05
112	70.23738742	-162.18758413	0	CRTD 12:13 08-AUG-05
113	70.21966338	-162.24866339	0	CRTD 12:15 08-AUG-05
114	70.20734131	-162.28349456	0	CRTD 12:17 08-AUG-05
115	70.19325435	-162.32979485	0	CRTD 12:19 08-AUG-05
116	70.17239213	-162.36817726	0	CRTD 12:21 08-AUG-05
117	70.15657246	-162.40018674	0	CRTD 12:23 08-AUG-05
118	70.14007688	-162.44065055	0	CRTD 12:25 08-AUG-05
119	70.12704134	-162.46572920	0	CRTD 12:52 08-AUG-05
120	70.10603964	-162.49134966	0	CRTD 12:54 08-AUG-05
121	70.08582115	-162.52281734	0	CRTD 12:56 08-AUG-05
122	70.07182002	-162.55455323	0	CRTD 12:58 08-AUG-05
123	70.04827559	-162.58331724	0	CRTD 13:01 08-AUG-05
124	70.02992928	-162.61030563	0	CRTD 13:03 08-AUG-05
125	70.01332641	-162.63641425	0	CRTD 13:05 08-AUG-05
126	69.99366581	-162.66469547	0	CRTD 13:07 08-AUG-05
127	69.97685909	-162.69158729	0	CRTD 13:09 08-AUG-05
128	69.95724142	-162.72561916	0	CRTD 13:11 08-AUG-05
129	69.93916869	-162.76639947	0	CRTD 13:13 08-AUG-05
130	69.92280722	-162.79605933	0	CRTD 13:15 08-AUG-05
131	69.90685344	-162.82059082	0	CRTD 13:17 08-AUG-05
132	69.89575982	-162.83796080	0	CRTD 13:19 08-AUG-05
133	69.88633454	-162.86568948	0	CRTD 13:21 08-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
134	69.87138391	-162.89266714	0	CRTD 13:23 08-AUG-05
135	69.85312343	-162.92971917	0	CRTD 13:25 08-AUG-05
136	69.83594656	-162.96420702	0	CRTD 13:27 08-AUG-05
137	69.81761098	-162.99765953	0	CRTD 13:29 08-AUG-05
138	69.79714036	-163.02323171	0	CRTD 13:31 08-AUG-05
139	69.77544665	-163.04056951	0	CRTD 13:33 08-AUG-05
140	69.75615621	-163.05446872	0	CRTD 13:35 08-AUG-05
141	69.73790109	-163.06269773	0	CRTD 13:37 08-AUG-05
142	69.72437203	-163.07857641	0	CRTD 13:39 08-AUG-05
143	69.70537663	-163.09143492	0	CRTD 13:41 08-AUG-05
144	69.68591988	-163.10192772	0	CRTD 13:43 08-AUG-05
145	69.66880739	-163.11083266	0	CRTD 13:45 08-AUG-05
146	69.65114772	-163.13105115	0	CRTD 13:47 08-AUG-05
147	69.63262439	-163.14114162	0	CRTD 13:49 08-AUG-05
148	69.61164951	-163.14935991	0	CRTD 13:51 08-AUG-05
149	69.59415078	-163.14810463	0	CRTD 13:53 08-AUG-05
150	69.57386255	-163.14443001	0	CRTD 13:55 08-AUG-05
151	69.55599904	-163.14153322	0	CRTD 13:57 08-AUG-05
152	69.53576446	-163.14144739	0	CRTD 13:59 08-AUG-05
153	69.51563179	-163.14065346	0	CRTD 14:01 08-AUG-05
154	69.49983358	-163.13827165	0	CRTD 14:03 08-AUG-05
155	69.48052168	-163.14432272	50	CRTD 14:05 08-AUG-05
156	69.46247041	-163.14508446	0	CRTD 14:07 08-AUG-05
157	69.44684386	-163.14537414	0	CRTD 14:09 08-AUG-05
158	69.43077207	-163.13962349	0	CRTD 14:11 08-AUG-05
159	69.41024244	-163.15020748	0	CRTD 14:13 08-AUG-05
160	69.38940704	-163.16243836	0	CRTD 14:15 08-AUG-05
161	69.37354982	-163.17382165	0	CRTD 14:17 08-AUG-05
162	69.35724735	-163.17938455	0	CRTD 14:19 08-AUG-05
163	69.34119701	-163.19393286	0	CRTD 14:21 08-AUG-05
164	69.32831168	-163.21075031	0	CRTD 14:23 08-AUG-05
165	69.31225061	-163.22702595	0	CRTD 14:25 08-AUG-05
166	69.29978371	-163.24975499	0	CRTD 14:27 08-AUG-05
167	69.28489745	-163.27090689	0	CRTD 14:30 08-AUG-05
168	69.28301990	-163.22827050	0	CRTD 14:32 08-AUG-05
169	69.31235254	-163.18812319	0	CRTD 14:34 08-AUG-05
170	69.33727562	-163.15017530	0	CRTD 14:36 08-AUG-05
171	69.36877549	-163.11746308	0	CRTD 14:38 08-AUG-05
172	69.39627886	-163.10122498	0	CRTD 14:40 08-AUG-05
173	69.42491412	-163.08650502	0	CRTD 14:42 08-AUG-05
174	69.45292711	-163.07788440	0	CRTD 14:44 08-AUG-05
175	69.48466301	-163.08673033	0	CRTD 14:46 08-AUG-05
176	69.49396491	-163.03584882	0	CRTD 14:48 08-AUG-05
177	69.52493370	-163.03600439	0	CRTD 14:50 08-AUG-05
178	69.53333437	-163.03323635	0	CRTD 15:18 08-AUG-05
179	69.56400275	-163.04149219	0	CRTD 15:20 08-AUG-05
180	69.58445728	-163.10143420	0	CRTD 15:22 08-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
181	69.63538706	-163.02901992	0	CRTD 15:26 08-AUG-05
182	69.66605544	-163.04007062	0	CRTD 15:28 08-AUG-05
183	69.69708323	-163.03573617	0	CRTD 15:30 08-AUG-05
184	69.76859093	-162.96302148	0	CRTD 15:34 08-AUG-05
185	69.79488194	-162.93646761	0	CRTD 15:36 08-AUG-05
186	69.81224120	-162.84591624	0	CRTD 15:38 08-AUG-05
187	69.83573735	-162.80697056	0	CRTD 15:40 08-AUG-05
188	69.86380935	-162.74236151	0	CRTD 15:42 08-AUG-05
189	69.88745034	-162.67277964	0	CRTD 15:44 08-AUG-05
190	69.91330147	-162.61863121	0	CRTD 15:46 08-AUG-05
191	69.92522120	-162.56495484	0	CRTD 15:48 08-AUG-05
192	69.97768521	-162.47397431	0	CRTD 15:52 08-AUG-05
193	70.01025259	-162.45619663	0	CRTD 15:54 08-AUG-05
194	70.03491282	-162.45811709	0	CRTD 15:56 08-AUG-05
195	70.04452586	-162.40443536	0	CRTD 15:58 08-AUG-05
196	70.07587016	-162.34742769	0	CRTD 16:00 08-AUG-05
197	70.09122312	-162.30535456	0	CRTD 16:02 08-AUG-05
198	70.11942387	-162.27273353	0	CRTD 16:04 08-AUG-05
199	70.13966382	-162.21846708	0	CRTD 16:06 08-AUG-05
200	70.15663675	-162.15613254	0	CRTD 16:08 08-AUG-05
201	70.15711963	-162.15620228	0	CRTD 16:08 08-AUG-05
202	70.17959654	-162.11517521	0	CRTD 16:10 08-AUG-05
203	70.20688534	-162.05736288	0	CRTD 16:12 08-AUG-05
204	70.20731449	-162.05656894	0	CRTD 16:12 08-AUG-05
205	70.20792067	-162.05549070	0	CRTD 16:12 08-AUG-05
206	70.22943735	-162.00824627	0	CRTD 16:14 08-AUG-05
207	70.25849104	-161.97116741	0	CRTD 16:16 08-AUG-05
208	70.29776931	-161.89817914	0	CRTD 16:19 08-AUG-05
209	70.29831111	-161.89653763	0	CRTD 16:19 08-AUG-05
210	70.30355215	-161.85501167	0	CRTD 17:51 08-AUG-05
211	70.28276503	-161.80113682	0	CRTD 17:53 08-AUG-05
212	70.26659131	-161.73564264	0	CRTD 17:55 08-AUG-05
213	70.25777221	-161.67408594	0	CRTD 17:57 08-AUG-05
214	70.24268746	-161.61620923	0	CRTD 17:59 08-AUG-05
215	70.24009109	-161.53242775	50	CRTD 18:01 08-AUG-05
216	70.24198472	-161.45586141	50	CRTD 18:03 08-AUG-05
217	70.24136245	-161.40671798	50	CRTD 18:05 08-AUG-05
218	70.24673223	-161.34758064	0	CRTD 18:07 08-AUG-05
219	70.25624335	-161.28672668	0	CRTD 18:09 08-AUG-05
220	70.27078629	-161.21333607	0	CRTD 18:11 08-AUG-05
221	70.28926671	-161.12898597	0	CRTD 18:13 08-AUG-05
222	70.30629337	-161.07851752	0	CRTD 18:15 08-AUG-05
223	70.32061100	-160.97284921	0	CRTD 18:19 08-AUG-05
224	70.33371091	-160.88940569	100	CRTD 18:21 08-AUG-05
225	70.35467505	-160.81269988	0	CRTD 18:23 08-AUG-05
226	70.36978662	-160.75559565	0	CRTD 18:25 08-AUG-05
227	70.39242446	-160.69470950	0	CRTD 18:27 08-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
228	70.41748166	-160.62787422	0	CRTD 18:29 08-AUG-05
229	70.43413281	-160.55809387	0	CRTD 18:31 08-AUG-05
230	70.45136333	-160.50420293	0	CRTD 18:33 08-AUG-05
231	70.47145307	-160.45385250	0	CRTD 18:35 08-AUG-05
232	70.49372613	-160.38238236	50	CRTD 18:37 08-AUG-05
233	70.51332772	-160.33113071	0	CRTD 18:39 08-AUG-05
234	70.53213000	-160.27207383	0	CRTD 18:41 08-AUG-05
235	70.56279302	-160.20151564	0	CRTD 18:43 08-AUG-05
236	70.58206737	-160.14487811	0	CRTD 18:45 08-AUG-05
237	70.61485469	-160.06938466	0	CRTD 18:47 08-AUG-05
001	71.34535432	-156.59427174	0	CRTD 09:51 10-AUG-05
002	71.32709384	-156.56618365	0	CRTD 09:53 10-AUG-05
003	71.29904330	-156.53555819	100	CRTD 09:55 10-AUG-05
004	71.28698945	-156.47983261	50	CRTD 09:57 10-AUG-05
005	71.28114760	-156.42756172	0	CRTD 09:59 10-AUG-05
006	71.26509718	-156.38524183	0	CRTD 10:01 10-AUG-05
007	71.25980258	-156.30037674	100	CRTD 10:03 10-AUG-05
008	71.25893354	-156.23386332	50	CRTD 10:05 10-AUG-05
009	71.24887526	-156.16196939	100	CRTD 10:07 10-AUG-05
010	71.24078035	-156.09519311	0	CRTD 10:09 10-AUG-05
011	71.22170985	-156.08778485	0	CRTD 10:11 10-AUG-05
012	71.20355666	-156.03564807	0	CRTD 10:13 10-AUG-05
013	71.18448615	-156.04884454	0	CRTD 10:15 10-AUG-05
014	71.16887033	-156.05252990	50	CRTD 10:17 10-AUG-05
015	71.18262470	-155.98465928	0	CRTD 10:19 10-AUG-05
016	71.20162010	-155.94241449	50	CRTD 10:21 10-AUG-05
017	71.19809031	-155.91385969	50	CRTD 10:23 10-AUG-05
018	71.18593454	-155.86574622	50	CRTD 10:25 10-AUG-05
019	71.19382560	-155.80310591	50	CRTD 10:27 10-AUG-05
020	71.19187295	-155.73983260	0	CRTD 10:29 10-AUG-05
021	71.18140161	-155.66350230	0	CRTD 10:31 10-AUG-05
022	71.16905808	-155.58665165	0	CRTD 10:33 10-AUG-05
023	71.14834070	-155.57308503	50	CRTD 10:35 10-AUG-05
024	71.11982882	-155.54722854	0	CRTD 10:37 10-AUG-05
025	71.09362364	-155.51490792	0	CRTD 10:39 10-AUG-05
026	71.06795490	-155.53505667	50	CRTD 10:41 10-AUG-05
027	71.04665279	-155.59308895	0	CRTD 10:43 10-AUG-05
028	71.03574157	-155.64548858	0	CRTD 10:45 10-AUG-05
029	71.02001309	-155.69995889	0	CRTD 10:47 10-AUG-05
030	70.99521875	-155.71404585	0	CRTD 10:49 10-AUG-05
031	70.98520875	-155.77866026	0	CRTD 10:51 10-AUG-05
032	70.96652985	-155.83062538	0	CRTD 10:53 10-AUG-05
033	70.96702337	-155.91459461	0	CRTD 10:55 10-AUG-05
034	70.96109569	-156.01064988	0	CRTD 10:57 10-AUG-05
035	70.93906939	-155.99306532	0	CRTD 10:59 10-AUG-05
036	70.90870678	-155.97531446	0	CRTD 11:01 10-AUG-05
037	70.81447542	-155.98325917	0	CRTD 12:42 10-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
038	70.78833997	-155.95304140	0	CRTD 12:44 10-AUG-05
040	70.77535808	-155.88367947	0	CRTD 12:51 10-AUG-05
041	70.80393970	-155.92141815	0	CRTD 12:53 10-AUG-05
042	70.82873404	-155.86516150	0	CRTD 12:55 10-AUG-05
043	70.83315432	-155.81060537	0	CRTD 12:57 10-AUG-05
044	70.83423793	-155.70850977	0	CRTD 12:59 10-AUG-05
045	70.82702816	-155.65655538	0	CRTD 13:01 10-AUG-05
046	70.82521498	-155.58973619	0	CRTD 13:03 10-AUG-05
047	70.83220482	-155.57538101	0	CRTD 13:05 10-AUG-05
048	70.84708571	-155.53973981	0	CRTD 13:07 10-AUG-05
049	70.84896863	-155.49220570	0	CRTD 13:09 10-AUG-05
050	70.87478757	-155.48415908	0	CRTD 13:11 10-AUG-05
051	70.90478003	-155.48680373	0	CRTD 13:13 10-AUG-05
052	70.93686461	-155.51116356	0	CRTD 13:15 10-AUG-05
053	70.95459402	-155.43600806	0	CRTD 13:17 10-AUG-05
054	70.98175943	-155.37550815	0	CRTD 13:19 10-AUG-05
055	71.00226223	-155.32525429	0	CRTD 13:21 10-AUG-05
056	70.98835230	-155.22689768	0	CRTD 13:25 10-AUG-05
057	70.98258555	-155.16920337	0	CRTD 13:27 10-AUG-05
058	71.01649404	-155.15882322	0	CRTD 13:29 10-AUG-05
059	71.03996336	-155.20374485	0	CRTD 13:31 10-AUG-05
060	71.06382966	-155.26406237	0	CRTD 13:33 10-AUG-05
061	71.09002948	-155.21552511	0	CRTD 13:35 10-AUG-05
062	71.10854208	-155.12566575	0	CRTD 13:37 10-AUG-05
063	71.08752429	-155.13502666	0	CRTD 13:39 10-AUG-05
064	71.06936566	-155.09884902	100	CRTD 13:41 10-AUG-05
065	71.04323566	-155.06754228	500	CRTD 13:43 10-AUG-05
066	71.04201257	-155.05592831	100	CRTD 13:45 10-AUG-05
067	71.09880567	-155.06498345	0	CRTD 13:49 10-AUG-05
068	71.12648606	-155.10978707	0	CRTD 13:51 10-AUG-05
069	71.14223599	-155.09061464	100	CRTD 13:53 10-AUG-05
070	71.13165200	-155.04882046	50	CRTD 13:55 10-AUG-05
071	71.11302137	-155.02617725	0	CRTD 13:57 10-AUG-05
072	71.09203577	-155.00433334	100	CRTD 14:15 10-AUG-05
073	71.10219061	-154.90078934	100	CRTD 14:17 10-AUG-05
074	71.08108163	-154.88091954	500	CRTD 14:19 10-AUG-05
075	71.08564130	-154.81301674	100	CRTD 14:21 10-AUG-05
076	71.06887758	-154.75722679	100	CRTD 14:23 10-AUG-05
077	71.04719996	-154.70880219	0	CRTD 14:35 10-AUG-05
078	71.02512538	-154.63556715	0	CRTD 14:37 10-AUG-05
079	70.99787414	-154.57853802	1000	CRTD 14:39 10-AUG-05
080	70.98387837	-154.56730493	100	CRTD 14:41 10-AUG-05
081	70.97011864	-154.60992523	0	CRTD 14:43 10-AUG-05
082	70.93927860	-154.61793968	50	CRTD 14:45 10-AUG-05
083	70.90830445	-154.61747834	0	CRTD 14:48 10-AUG-05
084	70.90234995	-154.66899821	0	CRTD 14:49 10-AUG-05
085	70.87152064	-154.61774656	0	CRTD 14:52 10-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
087	70.81904590	-154.53794547	0	CRTD 14:56 10-AUG-05
088	70.79332352	-154.30252262	0	CRTD 17:06 10-AUG-05
089	70.77995002	-154.26272937	0	CRTD 17:13 10-AUG-05
090	70.76826096	-154.18258497	0	CRTD 17:15 10-AUG-05
091	70.78057230	-154.11038526	0	CRTD 17:17 10-AUG-05
092	70.80557048	-154.03747209	0	CRTD 17:20 10-AUG-05
093	70.82569242	-153.98731478	0	CRTD 17:22 10-AUG-05
094	70.85306168	-153.95584711	0	CRTD 17:24 10-AUG-05
095	70.87539375	-153.94207665	0	CRTD 17:26 10-AUG-05
096	70.88310242	-153.87679704	0	CRTD 17:28 10-AUG-05
097	70.88742614	-153.77999076	0	CRTD 17:30 10-AUG-05
098	70.88413775	-153.67294916	50	CRTD 17:32 10-AUG-05
099	70.88373005	-153.57152411	0	CRTD 17:35 10-AUG-05
100	70.88381588	-153.49700161	50	CRTD 17:37 10-AUG-05
101	70.88911057	-153.42137941	0	CRTD 17:39 10-AUG-05
102	70.89998960	-153.34399232	0	CRTD 17:41 10-AUG-05
103	70.91436088	-153.27911505	0	CRTD 17:43 10-AUG-05
104	70.92108250	-153.19300541	50	CRTD 17:45 10-AUG-05
105	70.91798723	-153.12714108	0	CRTD 17:47 10-AUG-05
106	70.91778874	-153.12583753	0	CRTD 17:47 10-AUG-05
107	70.91238141	-153.06093344	100	CRTD 17:49 10-AUG-05
108	70.89601457	-153.00549754	0	CRTD 17:51 10-AUG-05
109	70.91062188	-153.24224004	0	CRTD 09:51 11-AUG-05
110	70.89478612	-153.00050327	500	CRTD 09:57 11-AUG-05
111	70.88288248	-152.90397056	50	CRTD 09:59 11-AUG-05
112	70.85844219	-152.88334438	50	CRTD 10:01 11-AUG-05
113	70.84772944	-152.81700262	0	CRTD 10:03 11-AUG-05
114	70.87457836	-152.78350719	0	CRTD 10:05 11-AUG-05
115	70.87534547	-152.72295901	0	CRTD 10:07 11-AUG-05
116	70.87823689	-152.64349588	0	CRTD 10:09 11-AUG-05
117	70.88022172	-152.57451483	0	CRTD 10:11 11-AUG-05
118	70.86975038	-152.51027056	0	CRTD 10:13 11-AUG-05
119	70.85926294	-152.42693969	50	CRTD 10:15 11-AUG-05
120	70.84500968	-152.36025461	0	CRTD 10:17 11-AUG-05
121	70.83356738	-152.28073784	0	CRTD 10:19 11-AUG-05
122	70.82417965	-152.22089776	100	CRTD 10:21 11-AUG-05
123	70.80463707	-152.19364651	0	CRTD 10:23 11-AUG-05
124	70.79816222	-152.20550724	0	CRTD 10:25 11-AUG-05
125	70.79354346	-152.26049789	0	CRTD 10:27 11-AUG-05
126	70.77371657	-152.31292435	0	CRTD 10:29 11-AUG-05
127	70.74946940	-152.34480509	0	CRTD 10:31 11-AUG-05
128	70.73737800	-152.38708206	0	CRTD 10:33 11-AUG-05
129	70.72184801	-152.39168474	0	CRTD 10:35 11-AUG-05
130	70.70489109	-152.41280981	0	CRTD 10:37 11-AUG-05
131	70.69322348	-152.46193179	0	CRTD 10:39 11-AUG-05
132	70.67375064	-152.47544476	0	CRTD 10:41 11-AUG-05
133	70.64811945	-152.46598729	0	CRTD 10:43 11-AUG-05

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IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
134	70.62439799	-152.44212099	0	CRTD 10:45 11-AUG-05
135	70.60613751	-152.38681384	0	CRTD 10:47 11-AUG-05
136	70.60564935	-152.31780597	0	CRTD 10:49 11-AUG-05
137	70.59202373	-152.25122818	0	CRTD 10:51 11-AUG-05
138	70.58542550	-152.17299887	0	CRTD 10:53 11-AUG-05
139	70.58472276	-152.08488830	0	CRTD 10:55 11-AUG-05
140	70.55220894	-152.03416237	0	CRTD 11:00 11-AUG-05
141	70.56189179	-151.99264177	0	CRTD 11:02 11-AUG-05
142	70.55448353	-151.92219623	0	CRTD 11:04 11-AUG-05
143	70.55175304	-151.84718021	0	CRTD 11:06 11-AUG-05
144	70.54978430	-151.76464328	0	CRTD 11:08 11-AUG-05
145	70.55084646	-151.70562395	0	CRTD 11:10 11-AUG-05
146	70.53990304	-151.73283764	0	CRTD 11:12 11-AUG-05
147	70.51786065	-151.76852711	0	CRTD 11:14 11-AUG-05
148	70.49860775	-151.78863295	0	CRTD 11:16 11-AUG-05
149	70.49875796	-151.73299857	0	CRTD 11:18 11-AUG-05
150	70.48755705	-151.79160484	0	CRTD 11:20 11-AUG-05
151	70.47924221	-151.85205110	0	CRTD 11:22 11-AUG-05
152	70.47086835	-151.92461559	0	CRTD 11:24 11-AUG-05
153	70.45546710	-151.95077249	0	CRTD 11:26 11-AUG-05
154	70.43626249	-151.96007439	0	CRTD 11:28 11-AUG-05
155	70.43143988	-151.93923899	0	CRTD 11:30 11-AUG-05
156	70.43564022	-151.90171489	0	CRTD 11:32 11-AUG-05
157	70.43205142	-151.73143753	0	CRTD 11:36 11-AUG-05
158	70.43354809	-151.65038117	0	CRTD 11:38 11-AUG-05
159	70.43362319	-151.54935845	0	CRTD 11:40 11-AUG-05
160	70.42478263	-151.48841330	0	CRTD 11:42 11-AUG-05
161	70.37113309	-151.22522959	0	CRTD 12:01 11-AUG-05
162	70.35256684	-151.20618590	0	CRTD 12:03 11-AUG-05
163	70.36396623	-151.20734998	0	CRTD 12:05 11-AUG-05
164	70.43892324	-151.02046438	100	CRTD 12:31 11-AUG-05
165	70.43885887	-151.02034100	0	CRTD 13:19 11-AUG-05
166	70.44632614	-150.97873458	0	CRTD 13:21 11-AUG-05
167	70.46056330	-150.92456468	0	CRTD 13:23 11-AUG-05
168	70.42162299	-150.28072723	0	CRTD 14:03 12-AUG-05
169	70.43280780	-150.20313093	0	CRTD 14:05 12-AUG-05
170	70.42847872	-150.11319109	0	CRTD 14:07 12-AUG-05
171	70.44107974	-150.06662794	0	CRTD 14:09 12-AUG-05
172	70.46015561	-150.00903019	0	CRTD 14:11 12-AUG-05
173	70.47874868	-149.95074579	0	CRTD 14:13 12-AUG-05
174	70.48609793	-149.76791569	50	CRTD 14:18 12-AUG-05
175	70.49801230	-149.69755598	0	CRTD 14:21 12-AUG-05
176	70.50239503	-149.63706144	0	CRTD 14:23 12-AUG-05
177	70.49625278	-149.58939859	0	CRTD 14:25 12-AUG-05
178	70.49790502	-149.52345380	0	CRTD 14:27 12-AUG-05
179	70.51412702	-149.46847388	0	CRTD 14:29 12-AUG-05
180	70.49142480	-149.42216822	0	CRTD 14:31 12-AUG-05

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IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
181	70.48195660	-149.37552460	0	CRTD 14:33 12-AUG-05
182	70.48615694	-149.34553214	0	CRTD 14:35 12-AUG-05
183	70.49504578	-149.31934842	0	CRTD 14:37 12-AUG-05
184	70.48942924	-149.25551721	0	CRTD 14:39 12-AUG-05
185	70.48431158	-149.17505094	0	CRTD 14:41 12-AUG-05
186	70.47202170	-149.13552591	0	CRTD 14:43 12-AUG-05
187	70.46369076	-149.07204338	0	CRTD 14:47 12-AUG-05
188	70.44390142	-149.01411303	0	CRTD 14:50 12-AUG-05
189	70.39871156	-148.79972943	0	CRTD 15:21 12-AUG-05
190	70.41162372	-148.72023412	0	CRTD 15:25 12-AUG-05
191	70.40495038	-148.65394601	0	CRTD 15:27 12-AUG-05
192	70.39669454	-148.58610758	0	CRTD 15:29 12-AUG-05
193	70.37803710	-148.53671738	0	CRTD 15:31 12-AUG-05
194	70.36629438	-148.49026152	0	CRTD 15:33 12-AUG-05
195	70.33551335	-148.46459814	0	CRTD 15:35 12-AUG-05
196	70.30998945	-148.48734864	0	CRTD 15:37 12-AUG-05
197	70.30706584	-148.42720815	0	CRTD 15:39 12-AUG-05
198	70.30261874	-148.35568436	0	CRTD 15:41 12-AUG-05
199	70.31947374	-148.29422959	0	CRTD 15:43 12-AUG-05
200	70.22486687	-147.78984555	0	CRTD 10:43 13-AUG-05
201	70.21319389	-147.72855171	0	CRTD 10:45 13-AUG-05
202	70.20066261	-147.67095395	0	CRTD 10:47 13-AUG-05
203	70.20262063	-147.61332401	0	CRTD 10:49 13-AUG-05
204	70.20125806	-147.54162856	0	CRTD 10:51 13-AUG-05
205	70.19613504	-147.47096845	0	CRTD 10:53 13-AUG-05
206	70.18565297	-147.40060874	0	CRTD 10:55 13-AUG-05
207	70.18903255	-147.33084985	0	CRTD 10:57 13-AUG-05
208	70.19644618	-147.27964112	0	CRTD 10:59 13-AUG-05
209	70.18622160	-147.23755189	0	CRTD 11:01 13-AUG-05
210	70.17092764	-147.21723148	0	CRTD 11:03 13-AUG-05
211	70.16021490	-147.18849429	0	CRTD 11:05 13-AUG-05
212	70.15526354	-147.12434658	0	CRTD 11:08 13-AUG-05
213	70.14643908	-147.06340143	0	CRTD 11:10 13-AUG-05
214	70.15331626	-147.02015349	0	CRTD 11:12 13-AUG-05
215	70.15199661	-146.96371445	0	CRTD 11:14 13-AUG-05
216	70.16678631	-146.91552588	0	CRTD 11:16 13-AUG-05
217	70.16846001	-146.87488505	0	CRTD 11:18 13-AUG-05
218	70.17893136	-146.83994659	0	CRTD 11:20 13-AUG-05
219	70.17708600	-146.75149807	0	CRTD 11:22 13-AUG-05
220	70.17449498	-146.68591806	0	CRTD 11:24 13-AUG-05
221	70.17925858	-146.61465176	0	CRTD 11:26 13-AUG-05
222	70.18438697	-146.53269419	0	CRTD 11:28 13-AUG-05
223	70.18142045	-146.46430858	0	CRTD 11:30 13-AUG-05
224	70.18004179	-146.41687104	50	CRTD 11:32 13-AUG-05
225	70.17826080	-146.36171409	0	CRTD 11:34 13-AUG-05
226	70.17376006	-146.29325875	0	CRTD 11:36 13-AUG-05
227	70.16582608	-146.24056407	0	CRTD 11:38 13-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
228	70.16056359	-146.18974158	0	CRTD 11:40 13-AUG-05
229	70.15882015	-146.13465437	0	CRTD 11:42 13-AUG-05
230	70.14344573	-146.08745822	0	CRTD 11:44 13-AUG-05
231	70.14363885	-146.08641752	0	CRTD 11:44 13-AUG-05
232	70.14228702	-146.03329905	0	CRTD 11:46 13-AUG-05
233	70.13795257	-145.98971316	0	CRTD 11:48 13-AUG-05
234	70.15143871	-145.82851776	0	CRTD 12:58 13-AUG-05
235	70.13676167	-145.79080590	0	CRTD 13:00 13-AUG-05
236	70.12258351	-145.73998877	0	CRTD 13:02 13-AUG-05
237	70.10839999	-145.69816777	0	CRTD 13:05 13-AUG-05
238	70.09547174	-145.65942057	0	CRTD 13:07 13-AUG-05
239	70.08327842	-145.60963341	0	CRTD 13:09 13-AUG-05
240	70.05009413	-145.47661194	0	CRTD 13:23 13-AUG-05
241	70.04998684	-145.47773310	0	CRTD 13:23 13-AUG-05
242	70.04029870	-145.44914075	0	CRTD 13:25 13-AUG-05
243	70.03046036	-145.39670357	100	CRTD 13:27 13-AUG-05
244	70.02340615	-145.35606273	100	CRTD 13:29 13-AUG-05
245	70.01581550	-145.30587324	0	CRTD 13:31 13-AUG-05
246	70.02042890	-145.24986872	0	CRTD 13:33 13-AUG-05
247	70.02775133	-145.19360670	0	CRTD 13:35 13-AUG-05
248	70.01222134	-145.22369036	0	CRTD 13:37 13-AUG-05
249	69.99052227	-145.23151704	0	CRTD 13:39 13-AUG-05
250	69.99040425	-145.17734178	0	CRTD 13:41 13-AUG-05
251	69.98497546	-145.10632225	0	CRTD 13:43 13-AUG-05
252	69.97988999	-145.02433249	0	CRTD 13:45 13-AUG-05
253	69.96475697	-144.97410544	0	CRTD 13:47 13-AUG-05
254	69.96214986	-144.93089505	0	CRTD 13:49 13-AUG-05
255	69.97242272	-144.85164651	0	CRTD 13:51 13-AUG-05
256	69.97955739	-144.79859241	0	CRTD 13:53 13-AUG-05
257	69.96898949	-144.73223456	0	CRTD 13:55 13-AUG-05
258	69.96532559	-144.65549120	0	CRTD 13:57 13-AUG-05
259	69.97316837	-144.59792563	50	CRTD 13:59 13-AUG-05
260	69.99119282	-144.54721042	50	CRTD 14:01 13-AUG-05
261	70.01722634	-144.49062117	0	CRTD 14:04 13-AUG-05
262	70.02231717	-144.42835637	0	CRTD 14:06 13-AUG-05
263	70.02898514	-144.37109658	0	CRTD 14:08 13-AUG-05
264	70.03059447	-144.29308721	0	CRTD 14:10 13-AUG-05
265	70.03287971	-144.23027524	0	CRTD 14:12 13-AUG-05
266	70.03478944	-144.16222760	0	CRTD 14:14 13-AUG-05
001	70.12483656	-143.60260614	0	CRTD 10:47 14-AUG-05
002	70.10037482	-143.66749951	0	CRTD 10:49 14-AUG-05
003	70.07581115	-143.66111048	50	CRTD 10:51 14-AUG-05
004	70.08078933	-143.55190166	0	CRTD 10:55 14-AUG-05
005	70.09182930	-143.51668962	0	CRTD 10:57 14-AUG-05
006	70.11294365	-143.52979481	0	CRTD 10:59 14-AUG-05
007	70.11466026	-143.51107844	0	CRTD 11:01 14-AUG-05
008	70.08809566	-143.44289132	0	CRTD 11:05 14-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
009	70.09395361	-143.38248261	0	CRTD 11:07 14-AUG-05
010	70.09295583	-143.34606358	0	CRTD 11:09 14-AUG-05
011	70.10770798	-143.19793590	0	CRTD 11:27 14-AUG-05
012	70.09217799	-143.14312228	0	CRTD 11:29 14-AUG-05
013	70.07916927	-143.08399566	0	CRTD 11:31 14-AUG-05
014	70.07754385	-143.01724621	0	CRTD 11:34 14-AUG-05
015	70.06029725	-142.99759098	0	CRTD 11:36 14-AUG-05
016	70.05485773	-142.93334135	0	CRTD 11:38 14-AUG-05
017	70.05667090	-142.87240156	0	CRTD 11:40 14-AUG-05
018	70.04700959	-142.81177291	0	CRTD 11:42 14-AUG-05
019	70.03917217	-142.75682517	0	CRTD 11:44 14-AUG-05
020	70.02556801	-142.68274792	0	CRTD 11:46 14-AUG-05
021	70.00543535	-142.60801085	0	CRTD 11:48 14-AUG-05
022	70.00507057	-142.60690042	0	CRTD 11:48 14-AUG-05
023	69.98248100	-142.57882842	0	CRTD 11:50 14-AUG-05
024	69.95961785	-142.56049820	0	CRTD 11:52 14-AUG-05
025	69.96665061	-142.50594744	0	CRTD 11:54 14-AUG-05
026	69.94655013	-142.47680255	0	CRTD 11:56 14-AUG-05
027	69.92949128	-142.40123400	0	CRTD 11:58 14-AUG-05
028	69.91140246	-142.40548798	0	CRTD 12:00 14-AUG-05
029	69.90723968	-142.33688244	0	CRTD 12:02 14-AUG-05
030	69.87996161	-142.31674441	0	CRTD 12:04 14-AUG-05
031	69.88014400	-142.27927395	0	CRTD 12:06 14-AUG-05
032	69.85634744	-142.25251623	0	CRTD 12:08 14-AUG-05
033	69.84878898	-142.18498358	50	CRTD 12:10 14-AUG-05
034	69.84201908	-142.08655723	0	CRTD 12:13 14-AUG-05
035	69.81939197	-142.02682972	0	CRTD 12:15 14-AUG-05
036	69.79891062	-141.99180015	0	CRTD 12:17 14-AUG-05
037	69.79137361	-141.94353112	0	CRTD 12:19 14-AUG-05
038	69.74144161	-141.58543476	0	CRTD 13:37 14-AUG-05
039	69.72490311	-141.53003641	0	CRTD 13:40 14-AUG-05
040	69.70613301	-141.48776480	0	CRTD 13:42 14-AUG-05
041	69.67479944	-141.43459805	0	CRTD 13:45 14-AUG-05
042	69.64950621	-141.40898296	0	CRTD 13:47 14-AUG-05
043	69.63138521	-141.35028013	0	CRTD 13:49 14-AUG-05
044	69.62985098	-141.25634381	0	CRTD 13:51 14-AUG-05
045	69.64318156	-141.24458500	0	CRTD 13:53 14-AUG-05
046	69.68065739	-141.20773681	0	CRTD 13:56 14-AUG-05
047	69.67568994	-141.13302120	0	CRTD 13:58 14-AUG-05
048	69.67549682	-141.13188931	0	CRTD 13:58 14-AUG-05
049	69.66046035	-141.06689938	0	CRTD 14:00 14-AUG-05
050	69.67792690	-141.24492832	0	CRTD 14:28 14-AUG-05
051	69.68378484	-141.36307963	100	CRTD 14:30 14-AUG-05
052	69.69928801	-141.44707032	0	CRTD 14:32 14-AUG-05
053	69.72807348	-141.51931294	0	CRTD 14:34 14-AUG-05
054	69.75316823	-141.58775219	0	CRTD 14:37 14-AUG-05
055	69.77564514	-141.66826137	0	CRTD 14:39 14-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
056	69.77592409	-141.66942545	0	CRTD 14:39 14-AUG-05
057	69.79129314	-141.73980125	0	CRTD 14:41 14-AUG-05
058	69.80664074	-141.83105537	0	CRTD 14:43 14-AUG-05
059	69.81876433	-141.90965482	0	CRTD 14:45 14-AUG-05
060	69.83306587	-141.99286767	50	CRTD 14:47 14-AUG-05
061	69.84729758	-142.05432245	0	CRTD 14:49 14-AUG-05
062	69.86656666	-142.15101608	100	CRTD 14:51 14-AUG-05
063	69.89625871	-142.25769826	0	CRTD 14:54 14-AUG-05
064	69.91390765	-142.31934079	0	CRTD 14:56 14-AUG-05
065	69.93472695	-142.38743671	100	CRTD 14:58 14-AUG-05
066	69.95487034	-142.44346269	50	CRTD 15:00 14-AUG-05
067	69.97543752	-142.51449295	0	CRTD 15:02 14-AUG-05
068	70.00070930	-142.59126314	0	CRTD 15:05 14-AUG-05
069	70.04253566	-142.75167533	0	CRTD 15:08 14-AUG-05
070	70.05725018	-142.84790763	0	CRTD 15:10 14-AUG-05
071	70.07334352	-142.93862530	100	CRTD 15:38 14-AUG-05
072	70.09086370	-143.01410266	0	CRTD 15:40 14-AUG-05
073	70.10776699	-143.09245535	100	CRTD 15:42 14-AUG-05
074	70.12741148	-143.17328640	100	CRTD 15:44 14-AUG-05
075	70.14746368	-143.24395188	0	CRTD 15:46 14-AUG-05
076	70.14189005	-143.31558832	0	CRTD 15:48 14-AUG-05
077	70.12462199	-143.42073091	0	CRTD 15:51 14-AUG-05
078	70.13795257	-143.52173218	50	CRTD 15:53 14-AUG-05
079	70.13620377	-143.58594426	0	CRTD 15:55 14-AUG-05
080	70.13609111	-143.59574505	50	CRTD 09:37 15-AUG-05
081	70.13477683	-143.67231139	0	CRTD 09:39 15-AUG-05
082	70.12896180	-143.73166868	0	CRTD 09:41 15-AUG-05
083	70.11337280	-143.71437379	0	CRTD 09:43 15-AUG-05
084	70.09212434	-143.67797085	50	CRTD 09:45 15-AUG-05
085	70.08640051	-143.69177886	0	CRTD 09:47 15-AUG-05
086	70.09861529	-143.68771263	0	CRTD 09:49 15-AUG-05
087	70.09904444	-143.72996815	0	CRTD 09:51 15-AUG-05
088	70.09158790	-143.75397393	0	CRTD 09:53 15-AUG-05
089	70.07364392	-143.79937836	0	CRTD 09:55 15-AUG-05
090	70.07653534	-143.82031032	0	CRTD 09:57 15-AUG-05
091	70.07542491	-143.88802537	0	CRTD 10:00 15-AUG-05
092	70.06444395	-143.91865083	0	CRTD 10:02 15-AUG-05
093	70.05838215	-143.95366975	0	CRTD 10:04 15-AUG-05
094	70.07790327	-143.99760433	0	CRTD 11:15 15-AUG-05
095	70.08847117	-144.03837928	0	CRTD 14:53 15-AUG-05
096	70.08105755	-144.11736497	0	CRTD 14:55 15-AUG-05
097	70.06055474	-144.19287452	0	CRTD 14:57 15-AUG-05
098	70.04636049	-144.28285726	0	CRTD 14:59 15-AUG-05
099	70.04051328	-144.37512525	100	CRTD 15:01 15-AUG-05
100	70.03167272	-144.46284958	0	CRTD 15:03 15-AUG-05
101	69.98359144	-144.84650203	0	CRTD 15:13 15-AUG-05
102	69.99775350	-145.20656177	0	CRTD 15:24 15-AUG-05

2005 helicopter survey

IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
103	70.02482235	-145.24952539	0	CRTD 15:26 15-AUG-05
104	70.04125357	-145.35467871	0	CRTD 15:29 15-AUG-05
105	70.05163372	-145.40611275	0	CRTD 15:32 15-AUG-05
106	70.20556033	-147.54229375	0	CRTD 16:38 15-AUG-05
107	70.20611823	-147.62682089	0	CRTD 16:40 15-AUG-05
108	70.25665641	-147.76884385	0	CRTD 16:45 15-AUG-05
109	70.27830175	-147.77699777	0	CRTD 16:47 15-AUG-05
110	70.29600978	-147.82036372	0	CRTD 16:49 15-AUG-05
111	70.39828241	-148.55741330	0	CRTD 09:47 16-AUG-05
112	70.42250276	-148.61998388	0	CRTD 09:49 16-AUG-05
113	70.43496966	-148.73434254	0	CRTD 09:52 16-AUG-05
114	70.45264006	-148.78772923	50	CRTD 09:54 16-AUG-05
115	70.47486484	-148.83736082	0	CRTD 09:56 16-AUG-05
116	70.48155427	-148.89340290	0	CRTD 09:58 16-AUG-05
117	70.48068523	-148.96265217	0	CRTD 10:00 16-AUG-05
118	70.48890889	-149.03491088	0	CRTD 10:02 16-AUG-05
119	70.49202561	-149.08343204	0	CRTD 10:04 16-AUG-05
120	70.51670730	-149.14664098	0	CRTD 10:06 16-AUG-05
121	70.52651882	-149.22802457	0	CRTD 10:08 16-AUG-05
122	70.53593329	-149.30820116	0	CRTD 10:10 16-AUG-05
123	70.54215610	-149.41572019	0	CRTD 10:13 16-AUG-05
124	70.55759490	-149.48429354	0	CRTD 10:15 16-AUG-05
125	70.56326509	-149.57553693	0	CRTD 10:17 16-AUG-05
126	70.56886554	-149.66400691	0	CRTD 10:19 16-AUG-05
127	70.56535184	-149.76175197	0	CRTD 10:21 16-AUG-05
128	70.55931151	-149.82454785	0	CRTD 10:23 16-AUG-05
129	70.55539548	-149.92806503	0	CRTD 10:25 16-AUG-05
130	70.54944098	-150.01344510	0	CRTD 10:27 16-AUG-05
131	70.54002106	-150.11828729	0	CRTD 10:29 16-AUG-05
132	70.54061651	-150.13425180	0	CRTD 10:31 16-AUG-05
133	70.55294394	-150.21091470	0	CRTD 10:33 16-AUG-05
134	71.14643633	-155.04851469	100	CRTD 13:30 16-AUG-05
135	71.16180539	-155.11847206	0	CRTD 13:32 16-AUG-05
136	71.17114484	-155.18900343	100	CRTD 13:34 16-AUG-05
137	71.18018925	-155.27763971	0	CRTD 13:36 16-AUG-05
138	71.18059695	-155.38128563	100	CRTD 13:38 16-AUG-05
139	71.19785964	-155.42337486	100	CRTD 13:40 16-AUG-05
140	71.21259570	-155.49741455	50	CRTD 13:42 16-AUG-05
141	71.22654855	-155.58167347	0	CRTD 13:44 16-AUG-05
142	71.23331308	-155.68281957	0	CRTD 13:46 16-AUG-05
143	71.23181105	-155.75058826	0	CRTD 13:48 16-AUG-05
144	71.25797331	-155.92256078	0	CRTD 13:52 16-AUG-05
145	71.28252089	-155.93871304	0	CRTD 13:54 16-AUG-05
146	71.30432189	-155.98867723	0	CRTD 13:56 16-AUG-05
147	71.32077992	-156.05863997	0	CRTD 13:58 16-AUG-05
148	71.33231878	-156.13131710	0	CRTD 14:00 16-AUG-05
149	71.34355724	-156.23767206	0	CRTD 14:02 16-AUG-05

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IDENT	LAT	LONG	FLOCK_SIZE	TIME_DATE
150	71.35421634	-156.29049012	0	CRTD 14:04 16-AUG-05
151	71.36138856	-156.37070426	100	CRTD 14:06 16-AUG-05
152	71.38103843	-156.43859097	0	CRTD 14:08 16-AUG-05
153	71.36577666	-156.50081285	0	CRTD 14:10 16-AUG-05
154	71.34815991	-156.59361728	0	CRTD 14:12 16-AUG-05

2006 fixed-wing survey 1

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number
22	july	2006	peardbay	wainwright	70.8222	-159.5140	phalarope	10
22	july	2006	peardbay	wainwright	70.8304	-159.4639	phalarope	2
22	july	2006	peardbay	wainwright	70.8314	-159.4568	phalarope	2
22	july	2006	peardbay	wainwright	70.8387	-159.4121	phalarope	1
22	july	2006	peardbay	wainwright	70.8411	-159.3978	phalarope	25
22	july	2006	peardbay	wainwright	70.8414	-159.3959	phalarope	2
22	july	2006	peardbay	wainwright	70.8419	-159.3923	phalarope	7
22	july	2006	peardbay	wainwright	70.8448	-159.3696	phalarope	3
22	july	2006	peardbay	wainwright	70.8449	-159.3542	phalarope	25
22	july	2006	peardbay	wainwright	70.8456	-159.3364	phalarope	30
22	july	2006	peardbay	wainwright	70.8455	-159.3474	phalarope	4
22	july	2006	peardbay	wainwright	70.8445	-159.3551	phalarope	7
22	july	2006	peardbay	wainwright	70.8448	-159.3153	phalarope	50
22	july	2006	peardbay	wainwright	70.8439	-159.3087	phalarope	1
22	july	2006	peardbay	wainwright	70.8498	-159.3190	phalarope	200
22	july	2006	peardbay	wainwright	70.8450	-159.3155	phalarope	30
22	july	2006	wainwright	barrow	70.8557	-159.1715	phalarope	9
22	july	2006	wainwright	barrow	70.8537	-159.1698	phalarope	20
22	july	2006	wainwright	barrow	70.8330	-159.1493	phalarope	20
22	july	2006	wainwright	barrow	70.8325	-159.1491	phalarope	3
22	july	2006	wainwright	barrow	70.8319	-159.1485	phalarope	10
22	july	2006	wainwright	barrow	70.7804	-159.3744	phalarope	12
22	july	2006	wainwright	barrow	71.1749	-157.0315	phalarope	2
22	july	2006	wainwright	barrow	71.2188	-156.9493	phalarope	1
22	july	2006	wainwright	barrow	71.2691	-156.8459	phalarope	1
22	july	2006	wainwright	barrow	71.3645	-156.5121	phalarope	1
22	july	2006	wainwright	barrow	71.3781	-156.4860	phalarope	1
22	july	2006	wainwright	barrow	71.3836	-156.4863	phalarope	1
22	july	2006	wainwright	barrow	71.3861	-156.4851	phalarope	6
22	july	2006	wainwright	barrow	71.3872	-156.4840	phalarope	1
22	july	2006	wainwright	barrow	71.3877	-156.4831	phalarope	12
22	july	2006	wainwright	barrow	71.3883	-156.4807	phalarope	4
22	july	2006	wainwright	barrow	71.3890	-156.4762	phalarope	20
22	july	2006	wainwright	barrow	71.3889	-156.4741	phalarope	20
22	july	2006	wainwright	barrow	71.3883	-156.4704	phalarope	10
22	july	2006	wainwright	barrow	71.3781	-156.4288	phalarope	30
22	july	2006	wainwright	barrow	71.3771	-156.4259	phalarope	20
22	july	2006	wainwright	barrow	71.3750	-156.4199	phalarope	3
22	july	2006	wainwright	barrow	71.3743	-156.4177	phalarope	1
22	july	2006	wainwright	barrow	71.3671	-156.3944	phalarope	4
22	july	2006	wainwright	barrow	71.3759	-156.4274	phalarope	6
22	july	2006	wainwright	barrow	71.3814	-156.4443	phalarope	3
22	july	2006	wainwright	barrow	71.3795	-156.4671	phalarope	11
22	july	2006	wainwright	barrow	71.3784	-156.4698	phalarope	8
22	july	2006	wainwright	barrow	71.3775	-156.4720	phalarope	13

2006 fixed-wing survey 1

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number
22	july	2006	wainwright	barrow	71.3764	-156.4745	phalarope	5
22	july	2006	wainwright	barrow	71.3753	-156.4773	phalarope	3
22	july	2006	wainwright	barrow	71.3727	-156.4831	phalarope	25
22	july	2006	wainwright	barrow	71.3667	-156.4949	phalarope	50
22	july	2006	wainwright	barrow	71.3654	-156.4971	phalarope	6
22	july	2006	wainwright	barrow	71.3644	-156.4989	phalarope	20
22	july	2006	wainwright	barrow	71.3638	-156.5002	phalarope	20
22	july	2006	wainwright	barrow	71.3626	-156.5031	phalarope	30
22	july	2006	wainwright	barrow	71.3613	-156.5060	phalarope	30
22	july	2006	wainwright	barrow	71.3607	-156.5072	phalarope	30
22	july	2006	wainwright	barrow	71.3591	-156.5107	phalarope	5
22	july	2006	wainwright	barrow	71.3581	-156.5132	phalarope	15
22	july	2006	wainwright	barrow	71.3574	-156.5148	phalarope	4
22	july	2006	wainwright	barrow	71.3565	-156.5185	phalarope	6
22	july	2006	wainwright	barrow	71.3559	-156.5211	phalarope	30
22	july	2006	wainwright	barrow	71.3556	-156.5230	phalarope	1
22	july	2006	wainwright	barrow	71.3548	-156.5316	phalarope	3
22	july	2006	wainwright	barrow	71.3544	-156.5335	phalarope	7
22	july	2006	wainwright	barrow	71.3538	-156.5368	phalarope	20
22	july	2006	wainwright	barrow	71.3541	-156.5455	phalarope	50
22	july	2006	wainwright	barrow	71.3532	-156.5493	phalarope	20
22	july	2006	wainwright	barrow	71.3526	-156.5525	phalarope	20
22	july	2006	wainwright	barrow	71.3521	-156.5553	phalarope	5
22	july	2006	wainwright	barrow	71.3509	-156.5625	phalarope	4
22	july	2006	wainwright	barrow	71.3496	-156.5708	phalarope	25
22	july	2006	wainwright	barrow	71.3493	-156.5726	phalarope	10
22	july	2006	wainwright	barrow	71.2902	-156.5342	radio	5607(35)
22	july	2006	barrow	capesimpson	71.2426	-156.1326	phalarope	2
22	july	2006	barrow	capesimpson	71.2344	-156.0793	phalarope	6
22	july	2006	barrow	capesimpson	71.2299	-156.0835	phalarope	3
22	july	2006	barrow	capesimpson	71.2284	-156.0858	phalarope	2
22	july	2006	barrow	capesimpson	71.2278	-156.0873	phalarope	10
22	july	2006	barrow	capesimpson	71.1878	-155.8378	phalarope	6
22	july	2006	capesimpson	barrow	71.0984	-154.9201	phalarope	6
22	july	2006	capesimpson	barrow	71.2558	-155.9319	phalarope	200
22	july	2006	capesimpson	barrow	71.2571	-155.9274	phalarope	3
22	july	2006	capesimpson	barrow	71.2581	-155.9250	phalarope	100
22	july	2006	capesimpson	barrow	71.2620	-155.9232	phalarope	300
22	july	2006	capesimpson	barrow	71.2652	-155.9246	phalarope	3
22	july	2006	capesimpson	barrow	71.2743	-155.9313	phalarope	2
22	july	2006	capesimpson	barrow	71.2808	-155.9390	phalarope	3
22	july	2006	capesimpson	barrow	71.2814	-155.9399	phalarope	1
22	july	2006	capesimpson	barrow	71.2819	-155.9409	phalarope	1
22	july	2006	capesimpson	barrow	71.2828	-155.9425	phalarope	2
22	july	2006	capesimpson	barrow	71.2842	-155.9454	phalarope	50
22	july	2006	capesimpson	barrow	71.2848	-155.9464	phalarope	1

2006 fixed-wing survey 1

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number
22	july	2006	capesimpson	barrow	71.2872	-155.9502	phalarope	2
22	july	2006	capesimpson	barrow	71.2880	-155.9514	phalarope	1
22	july	2006	capesimpson	barrow	71.2885	-155.9523	phalarope	1
22	july	2006	capesimpson	barrow	71.2915	-155.9584	phalarope	1
22	july	2006	capesimpson	barrow	71.2924	-155.9610	phalarope	10
22	july	2006	capesimpson	barrow	71.2935	-155.9649	phalarope	1
22	july	2006	capesimpson	barrow	71.2973	-155.9760	phalarope	20
22	july	2006	capesimpson	barrow	71.3000	-155.9824	phalarope	4
22	july	2006	capesimpson	barrow	71.3137	-156.0348	phalarope	6
22	july	2006	capesimpson	barrow	71.3194	-156.0595	phalarope	2
22	july	2006	capesimpson	barrow	71.3194	-156.0594	phalarope	2
22	july	2006	capesimpson	barrow	71.3204	-156.0645	phalarope	10
22	july	2006	capesimpson	barrow	71.3220	-156.0736	phalarope	5
22	july	2006	capesimpson	barrow	71.3229	-156.0783	phalarope	15
22	july	2006	capesimpson	barrow	71.3239	-156.0837	phalarope	20
22	july	2006	capesimpson	barrow	71.3268	-156.1002	phalarope	3
22	july	2006	capesimpson	barrow	71.3271	-156.1022	phalarope	5
22	july	2006	capesimpson	barrow	71.3272	-156.1025	phalarope	7
22	july	2006	capesimpson	barrow	71.3272	-156.1025	phalarope	10
22	july	2006	capesimpson	barrow	71.3286	-156.1112	phalarope	10
22	july	2006	capesimpson	barrow	71.3291	-156.1146	phalarope	10
22	july	2006	capesimpson	barrow	71.3302	-156.1239	phalarope	1
22	july	2006	capesimpson	barrow	71.3305	-156.1266	phalarope	5
22	july	2006	capesimpson	barrow	71.3307	-156.1285	phalarope	10
22	july	2006	capesimpson	barrow	71.3310	-156.1310	phalarope	50
22	july	2006	capesimpson	barrow	71.3318	-156.1376	phalarope	50
22	july	2006	capesimpson	barrow	71.3326	-156.1439	phalarope	50
22	july	2006	capesimpson	barrow	71.3333	-156.1488	phalarope	50
22	july	2006	capesimpson	barrow	71.3348	-156.1588	phalarope	50
22	july	2006	capesimpson	barrow	71.3360	-156.1679	phalarope	20
22	july	2006	capesimpson	barrow	71.3367	-156.1723	phalarope	20
22	july	2006	capesimpson	barrow	71.3379	-156.1801	phalarope	5
22	july	2006	capesimpson	barrow	71.3384	-156.1849	phalarope	10
22	july	2006	capesimpson	barrow	71.3400	-156.1995	phalarope	10
22	july	2006	capesimpson	barrow	71.3408	-156.2072	phalarope	3
22	july	2006	capesimpson	barrow	71.3420	-156.2267	phalarope	20
22	july	2006	capesimpson	barrow	71.3423	-156.2329	phalarope	5
22	july	2006	capesimpson	barrow	71.3427	-156.2370	phalarope	10
22	july	2006	capesimpson	barrow	71.3450	-156.2726	phalarope	2
22	july	2006	capesimpson	barrow	71.3457	-156.2737	phalarope	15
22	july	2006	capesimpson	barrow	71.3495	-156.2794	phalarope	5
22	july	2006	capesimpson	barrow	71.3521	-156.2872	phalarope	1
22	july	2006	capesimpson	barrow	71.3527	-156.2889	phalarope	1
22	july	2006	capesimpson	barrow	71.3535	-156.2913	phalarope	10
22	july	2006	capesimpson	barrow	71.3555	-156.2970	phalarope	3

2006 fixed-wing survey 1

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number
22	july	2006	capesimpson	barrow	71.3567	-156.3035	phalarope	15
22	july	2006	capesimpson	barrow	71.3572	-156.3080	phalarope	150
22	july	2006	capesimpson	barrow	71.3578	-156.3151	phalarope	10
22	july	2006	capesimpson	barrow	71.3588	-156.3233	phalarope	2
22	july	2006	capesimpson	barrow	71.3589	-156.3239	phalarope	1
22	july	2006	capesimpson	barrow	71.3601	-156.3321	phalarope	1
22	july	2006	capesimpson	barrow	71.3604	-156.3370	peep	1
22	july	2006	capesimpson	barrow	71.3604	-156.3373	phalarope	1
22	july	2006	capesimpson	barrow	71.3611	-156.3443	phalarope	30
24	july	2006	capesimpson	kogru_river	70.9459	-154.6585	phalarope	1
24	july	2006	capesimpson	kogru_river	70.9352	-154.6546	phalarope	2
24	july	2006	capesimpson	kogru_river	70.9307	-154.6439	peep	10
24	july	2006	capesimpson	kogru_river	70.9306	-154.6407	peep	5
24	july	2006	capesimpson	kogru_river	70.9307	-154.6392	peep	20
24	july	2006	capesimpson	kogru_river	70.9308	-154.6372	peep	30
24	july	2006	capesimpson	kogru_river	70.9312	-154.6298	peep	1
24	july	2006	capesimpson	kogru_river	70.9224	-154.6244	phalarope	4
24	july	2006	capesimpson	kogru_river	70.9211	-154.6186	phalarope	1
24	july	2006	capesimpson	kogru_river	70.8492	-154.7437	phalarope	1
24	july	2006	capesimpson	kogru_river	70.8550	-154.7493	phalarope	3
24	july	2006	capesimpson	kogru_river	70.8017	-154.4454	peep	50
24	july	2006	capesimpson	kogru_river	70.7920	-154.0712	phalarope	1
24	july	2006	capesimpson	kogru_river	70.8687	-153.6795	phalarope	4
24	july	2006	capesimpson	kogru_river	70.8807	-153.5438	phalarope	10
24	july	2006	capesimpson	kogru_river	70.8773	-153.5376	phalarope	15
24	july	2006	capesimpson	kogru_river	70.8701	-153.5070	phalarope	2
24	july	2006	capesimpson	kogru_river	70.9025	-153.1838	phalarope	10
24	july	2006	capesimpson	kogru_river	70.8956	-153.1821	phalarope	8
24	july	2006	capesimpson	kogru_river	70.9072	-153.1712	phalarope	3
24	july	2006	capesimpson	kogru_river	70.8043	-152.4847	peep	1
24	july	2006	capesimpson	kogru_river	70.8042	-152.4703	radio	5795(35)
24	july	2006	capesimpson	kogru_river	70.8588	-152.4538	peep	10
24	july	2006	capesimpson	kogru_river	70.8222	-152.3513	peep	3
24	july	2006	capesimpson	kogru_river	70.6953	-152.4281	peep	3
24	july	2006	capesimpson	kogru_river	70.6048	-152.3511	peep	7
25	july	2006	deadhorse	border	70.0589	-145.4829	phalarope	9
25	july	2006	deadhorse	border	70.0502	-145.4721	peep	15
25	july	2006	deadhorse	border	70.0492	-145.4785	peep	1
25	july	2006	deadhorse	border	70.0346	-144.1820	dunl	7
25	july	2006	deadhorse	border	70.1009	-143.7145	peep	20
25	july	2006	deadhorse	border	70.1207	-143.2577	phalarope	15
25	july	2006	deadhorse	border	70.0972	-143.2288	peep	2
25	july	2006	deadhorse	border	70.0790	-143.0198	phalarope	2
25	july	2006	deadhorse	border	69.8404	-142.0755	peep	100

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number
25	july	2006	deadhorse	border	69.7857	-141.7868	peep	4
25	july	2006	deadhorse	border	69.7563	-141.6612	phalarope	2
25	july	2006	deadhorse	border_fishcr	70.2846	-147.9614	phalarope	10
25	july	2006	deadhorse	border_fishcr	70.3057	-148.0553	peep	5
25	july	2006	deadhorse	border_fishcr	70.3076	-148.0467	pesa	2
25	july	2006	deadhorse	border_fishcr	70.3082	-148.0439	peep	5
25	july	2006	deadhorse	border_fishcr	70.3152	-148.0969	phalarope	3
25	july	2006	deadhorse	fish_creek	70.4033	-148.6542	peep	10
25	july	2006	deadhorse	fish_creek	70.4110	-148.8516	phalarope	1
25	july	2006	deadhorse	fish_creek	70.5076	-149.4959	peep	6
25	july	2006	deadhorse	fish_creek	70.4628	-150.7868	peep	20
25	july	2006	deadhorse	fish_creek	70.4223	-151.0959	dunl	3
25	july	2006	deadhorse	fish_creek	70.3995	-151.1773	phalarope	AT
25	july	2006	deadhorse	fish_creek	70.3778	-151.1444	phalarope	1
25	july	2006	deadhorse	fish_creek	70.4046	-151.3320	phalarope	15
25	july	2006	deadhorse	fish_creek	70.3971	-151.4123	peep	25
25	july	2006	deadhorse	fish_creek	70.4111	-151.4331	peep	2
26	july	2006	fish_creek	kogru_river	70.4356	-151.8372	phalarope	3
26	july	2006	fish_creek	kogru_river	70.4300	-151.9180	phalarope	7
26	july	2006	fish_creek	kogru_river	70.4552	-151.9954	plover	1
26	july	2006	fish_creek	kogru_river	70.5164	-151.7378	phalarope	2
26	july	2006	fish_creek	kogru_river	70.5151	-151.7245	peep	50
26	july	2006	fish_creek	kogru_river	70.5182	-151.7287	peep	7
26	july	2006	fish_creek	kogru_river	70.5029	-151.8593	phalarope	2
26	july	2006	fish_creek	kogru_river	70.5108	-151.8319	peep	2
26	july	2006	fish_creek	kogru_river	70.5393	-151.7340	peep	10
26	july	2006	fish_creek	kogru_river	70.5505	-151.7182	peep	50
26	july	2006	fish_creek	kogru_river	70.5544	-151.7367	phalarope	1
26	july	2006	fish_creek	kogru_river	70.5378	-151.7313	peep	20
26	july	2006	fish_creek	kogru_river	70.5457	-151.7498	dunl	3
26	july	2006	fish_creek	kogru_river	70.5526	-151.8787	peep	5
26	july	2006	fish_creek	kogru_river	70.5571	-151.9999	peep	3
26	july	2006	fish_creek	kogru_river	70.5514	-152.1441	phalarope	2
26	july	2006	fish_creek	kogru_river	70.5446	-152.3768	plover	1
							total	3233

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
3	Aug	2006	Barrow	Peard	71.1396	-157.0974	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.1346	-157.1073	phalarope	12	30
3	Aug	2006	Barrow	Peard	71.1312	-157.1132	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.1269	-157.1205	phalarope	3	30
3	Aug	2006	Barrow	Peard	71.1257	-157.1225	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.1250	-157.1238	phalarope	4	30
3	Aug	2006	Barrow	Peard	71.1224	-157.1283	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.1191	-157.1339	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.1137	-157.1427	phalarope	10	30
3	Aug	2006	Barrow	Peard	71.1116	-157.1461	phalarope	7	30
3	Aug	2006	Barrow	Peard	71.1092	-157.1499	phalarope	3	30
3	Aug	2006	Barrow	Peard	71.1072	-157.1529	phalarope	3	30
3	Aug	2006	Barrow	Peard	71.1070	-157.1533	phalarope	4	30
3	Aug	2006	Barrow	Peard	71.1056	-157.1554	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.1023	-157.1604	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.1023	-157.1603	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.0991	-157.1651	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.0984	-157.1661	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.0930	-157.1753	phalarope	6	30
3	Aug	2006	Barrow	Peard	71.0912	-157.1783	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.0885	-157.1830	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.0863	-157.1865	phalarope	2	30
3	Aug	2006	Barrow	Peard	71.0855	-157.1878	phalarope	3	30
3	Aug	2006	Barrow	Peard	71.0783	-157.1999	phalarope	5	30
3	Aug	2006	Barrow	Peard	71.0745	-157.2062	phalarope	4	30
3	Aug	2006	Barrow	Peard	71.0465	-157.2581	phalarope	1	30
3	Aug	2006	Barrow	Peard	71.0271	-157.2997	phalarope	3	30
3	Aug	2006	Barrow	Peard	71.0133	-157.3315	phalarope	3	20
3	Aug	2006	Barrow	Peard	70.9607	-157.4674	phalarope	1	20
3	Aug	2006	Barrow	Peard	70.9076	-157.6541	phalarope	2	50
3	Aug	2006	Barrow	Peard	70.8902	-157.7139	phalarope	4	30
3	Aug	2006	Barrow	Peard	70.8720	-157.7900	phalarope	12	20
3	Aug	2006	Barrow	Peard	70.8569	-157.8656	phalarope	1	30
3	Aug	2006	Peard	Kasegaluk	70.8020	-158.4526	phalarope	200	10
3	Aug	2006	Peard	Kasegaluk	70.8028	-158.4574	peep	50	30
3	Aug	2006	Peard	Kasegaluk	70.7997	-159.0388	phalarope	100	50
3	Aug	2006	Peard	Kasegaluk	70.7983	-159.0277	phalarope	7	50
3	Aug	2006	Peard	Kasegaluk	70.7848	-158.9519	phalarope	2	30
3	Aug	2006	Peard	Kasegaluk	70.7665	-158.9807	peep	1	40
3	Aug	2006	Peard	Kasegaluk	70.7716	-159.0443	phalarope	2	10
3	Aug	2006	Peard	Kasegaluk	70.7767	-159.0458	phalarope	3	10
3	Aug	2006	Peard	Kasegaluk	70.7667	-159.0711	peep	2	40
3	Aug	2006	Peard	Kasegaluk	70.7647	-159.0866	phalarope	1	50
3	Aug	2006	Peard	Kasegaluk	70.7761	-159.2618	phalarope	8	30
3	Aug	2006	Peard	Kasegaluk	70.7889	-159.3420	phalarope	10	60

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
3	Aug	2006	Peard	Kasegaluk	70.8100	-159.2835	peep	1	50
3	Aug	2006	Peard	Kasegaluk	70.8328	-159.1438	phalarope	1	10
3	Aug	2006	Peard	Kasegaluk	70.8359	-159.1480	phalarope	9	20
3	Aug	2006	Peard	Kasegaluk	70.8365	-159.1490	phalarope	2	20
3	Aug	2006	Peard	Kasegaluk	70.8594	-159.1631	phalarope	3	20
3	Aug	2006	Peard	Kasegaluk	70.8505	-159.3170	phalarope	20	20
3	Aug	2006	Peard	Kasegaluk	70.2934	-161.3733	phalarope	4	20
3	Aug	2006	Peard	Kasegaluk	70.3035	-161.6113	phalarope	1	10
3	Aug	2006	Peard	Kasegaluk	70.3051	-161.6327	phalarope	3	10
3	Aug	2006	Peard	Kasegaluk	70.3099	-161.9283	radio	5021(55)	
3	Aug	2006	Kasegaluk	UtukokRiver	70.2812	-162.0348	phalarope	3	20
3	Aug	2006	Kasegaluk	UtukokRiver	70.1405	-162.4360	phalarope	6	30
3	Aug	2006	Kasegaluk	UtukokRiver	70.0811	-162.5142	phalarope	10	30
3	Aug	2006	Kasegaluk	UtukokRiver	70.0215	-162.6191	phalarope	12	50
3	Aug	2006	UtukokRiver	Barrow	70.3060	-161.8434	radio	7071(35)	
4	Aug	2006	Barrow	Kuparuk	71.3271	-156.6872	dunl	20	30
4	Aug	2006	Barrow	Kuparuk	71.3501	-156.5855	phalarope	2	30
4	Aug	2006	Barrow	Kuparuk	71.3519	-156.5734	phalarope	50	50
4	Aug	2006	Barrow	Kuparuk	71.3558	-156.5509	dunl	30	50
4	Aug	2006	Barrow	Kuparuk	71.3571	-156.5437	phalarope	25	30
4	Aug	2006	Barrow	Kuparuk	71.3726	-156.4944	phalarope	50	30
4	Aug	2006	Barrow	Kuparuk	71.3734	-156.4932	phalarope	12	30
4	Aug	2006	Barrow	Kuparuk	71.3745	-156.4916	phalarope	3	30
4	Aug	2006	Barrow	Kuparuk	71.3768	-156.4885	phalarope	7	40
4	Aug	2006	Barrow	Kuparuk	71.3784	-156.4866	phalarope	20	50
4	Aug	2006	Barrow	Kuparuk	71.3887	-156.4831	phalarope	9	75
4	Aug	2006	Barrow	Kuparuk	71.3895	-156.4748	phalarope	25	60
4	Aug	2006	Barrow	Kuparuk	71.3877	-156.4628	phalarope	25	30
4	Aug	2006	Barrow	Kuparuk	71.3860	-156.4569	phalarope	12	0
4	Aug	2006	Barrow	Kuparuk	71.3799	-156.4648	phalarope	4	50
4	Aug	2006	Barrow	Kuparuk	71.3782	-156.4699	phalarope	3	50
4	Aug	2006	Barrow	Kuparuk	71.3539	-156.5426	phalarope	20	10
4	Aug	2006	Barrow	Kuparuk	71.3535	-156.5458	phalarope	100	50
4	Aug	2006	Barrow	Kuparuk	71.3526	-156.5530	phalarope	100	50
4	Aug	2006	Barrow	Kuparuk	71.3499	-156.5700	phalarope	3	10
4	Aug	2006	Barrow	Kuparuk	71.3476	-156.5843	phalarope	25	30
4	Aug	2006	Barrow	Kuparuk	71.3464	-156.5881	phalarope	100	40
4	Aug	2006	Barrow	Kuparuk	71.3432	-156.5923	phalarope	200	30
4	Aug	2006	Barrow	Kuparuk	71.3419	-156.5931	phalarope	100	30
4	Aug	2006	Barrow	Kuparuk	71.3391	-156.5933	phalarope	100	20
4	Aug	2006	Barrow	Kuparuk	71.3365	-156.5893	phalarope	25	20
4	Aug	2006	Barrow	Kuparuk	71.3131	-156.5585	phalarope	50	30
4	Aug	2006	Barrow	Kuparuk	71.3122	-156.5567	phalarope	50	50
4	Aug	2006	Barrow	Kuparuk	71.3116	-156.5551	phalarope	50	70
4	Aug	2006	Barrow	Kuparuk	71.3107	-156.5521	phalarope	50	100

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
4	Aug	2006	Barrow	Kuparuk	71.3043	-156.5399	phalarope	50	20
4	Aug	2006	Barrow	Kuparuk	71.3013	-156.5361	phalarope	3	20
4	Aug	2006	Barrow	Kuparuk	71.3006	-156.5353	phalarope	10	20
4	Aug	2006	Barrow	Kuparuk	71.2981	-156.5335	phalarope	15	20
4	Aug	2006	Barrow	Kuparuk	71.2952	-156.5278	phalarope	10	50
4	Aug	2006	Barrow	Kuparuk	71.2908	-156.4419	phalarope	50	60
4	Aug	2006	Barrow	Kuparuk	71.2813	-156.4261	phalarope	10	30
4	Aug	2006	Barrow	Kuparuk	71.2449	-156.1418	phalarope	30	50
4	Aug	2006	Barrow	Kuparuk	71.2182	-156.0656	phalarope	4	30
4	Aug	2006	Barrow	Kuparuk	71.1816	-156.0538	phalarope	8	10
4	Aug	2006	Barrow	Kuparuk	71.2018	-155.9451	phalarope	20	20
4	Aug	2006	Barrow	Kuparuk	71.2048	-155.9447	phalarope	50	20
4	Aug	2006	Barrow	Kuparuk	71.2067	-155.9442	phalarope	50	20
4	Aug	2006	Barrow	Kuparuk	71.2077	-155.9440	phalarope	50	20
4	Aug	2006	Barrow	Kuparuk	71.2110	-155.9433	phalarope	8	0
4	Aug	2006	Barrow	Kuparuk	71.1881	-155.8954	phalarope	4	20
4	Aug	2006	Barrow	Kuparuk	71.1594	-155.6003	phalarope	4	20
4	Aug	2006	Barrow	Kuparuk	71.1576	-155.5996	peep	12	30
4	Aug	2006	Barrow	Kuparuk	71.1505	-155.5922	peep	12	10
4	Aug	2006	Barrow	Kuparuk	71.1564	-155.5822	peep	20	20
4	Aug	2006	Barrow	Kuparuk	71.1584	-155.5831	peep	3	30
4	Aug	2006	Barrow	Kuparuk	71.1593	-155.5837	peep	12	30
4	Aug	2006	Barrow	Kuparuk	71.1612	-155.5853	peep	5	30
4	Aug	2006	Barrow	Kuparuk	71.1621	-155.5861	peep	8	30
4	Aug	2006	Barrow	Kuparuk	71.1685	-155.5902	peep	15	30
4	Aug	2006	Barrow	Kuparuk	71.1409	-155.5901	peep	12	20
4	Aug	2006	Barrow	Kuparuk	71.1390	-155.5766	peep	13	30
4	Aug	2006	Barrow	Kuparuk	71.1342	-155.5647	peep	3	30
4	Aug	2006	Barrow	Kuparuk	71.0893	-155.5112	phalarope	10	30
4	Aug	2006	Barrow	Kuparuk	71.0706	-155.5291	phalarope	2	30
4	Aug	2006	Barrow	Kuparuk	71.0602	-155.5471	peep	50	50
4	Aug	2006	Barrow	Kuparuk	71.0574	-155.5667	phalarope	3	20
4	Aug	2006	Barrow	Kuparuk	71.0559	-155.5746	phalarope	3	20
4	Aug	2006	Barrow	Kuparuk	71.0528	-155.5841	peep	5	100
4	Aug	2006	Barrow	Kuparuk	70.9597	-155.8238	peep	2	50
4	Aug	2006	Barrow	Kuparuk	70.9600	-156.0101	peep	10	50
4	Aug	2006	AdmiraltyBay	Kogru	70.8931	-156.0410	plover	4	70
4	Aug	2006	AdmiraltyBay	Kogru	70.7510	-156.0047	phalarope	50	10
4	Aug	2006	AdmiraltyBay	Kogru	70.7530	-156.0039	phalarope	10	1
4	Aug	2006	AdmiraltyBay	Kogru	70.7536	-156.0030	plover	2	10
4	Aug	2006	AdmiraltyBay	Kogru	70.7548	-156.0009	plover	20	10
4	Aug	2006	AdmiraltyBay	Kogru	70.7624	-155.9931	phalarope	3	30
4	Aug	2006	AdmiraltyBay	Kogru	70.7569	-155.8946	peep	3	30
4	Aug	2006	AdmiraltyBay	Kogru	70.8443	-155.6038	phalarope	1	30
4	Aug	2006	AdmiraltyBay	Kogru	70.8495	-155.6058	phalarope	1	20

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
6	Aug	2006	MilnePoint	border	70.4274	-148.9654	peep	5	100
6	Aug	2006	MilnePoint	border	70.4060	-148.9522	dunl	4	30
6	Aug	2006	MilnePoint	border	70.4142	-148.9461	peep	1	20
6	Aug	2006	MilnePoint	border	70.4142	-148.9028	phalarope	3	40
6	Aug	2006	MilnePoint	border	70.4271	-148.8912	peep	100	30
6	Aug	2006	MilnePoint	border	70.4083	-148.8795	phalarope	1	0
6	Aug	2006	MilnePoint	border	70.4152	-148.8424	peep	25	10
6	Aug	2006	MilnePoint	border	70.4102	-148.8587	phalarope	3	0
6	Aug	2006	MilnePoint	border	70.4074	-148.8654	phalarope	3	10
6	Aug	2006	MilnePoint	border	70.4041	-148.8730	peep	20	20
6	Aug	2006	MilnePoint	border	70.4048	-148.8286	peep	1	30
6	Aug	2006	MilnePoint	border	70.4030	-148.8333	peep	25	30
6	Aug	2006	MilnePoint	border	70.4014	-148.8372	peep	5	30
6	Aug	2006	MilnePoint	border	70.3990	-148.8037	peep	10	20
6	Aug	2006	MilnePoint	border	70.4103	-148.7404	peep	15	100
6	Aug	2006	MilnePoint	border	70.2034	-147.5356	peep	5	10
6	Aug	2006	MilnePoint	border	70.2028	-147.5320	peep	15	0
6	Aug	2006	MilnePoint	border	70.1846	-147.3151	peep	12	20
6	Aug	2006	MilnePoint	border	70.1833	-147.2949	peep	4	10
6	Aug	2006	MilnePoint	border	70.2025	-147.2735	peep	2	10
6	Aug	2006	MilnePoint	border	70.2217	-147.1965	peep	2	10
6	Aug	2006	MilnePoint	border	70.1924	-147.2566	dunl	1	20
6	Aug	2006	MilnePoint	border	70.1931	-147.2412	peep	20	30
6	Aug	2006	MilnePoint	border	70.1776	-147.2401	peep	2	30
6	Aug	2006	MilnePoint	border	70.1759	-147.2185	dunl	2	10
6	Aug	2006	MilnePoint	border	70.1605	-147.1896	peep	15	50
6	Aug	2006	MilnePoint	border	70.1511	-146.9946	peep	3	10
6	Aug	2006	MilnePoint	border	70.1799	-146.4797	peep	5	10
6	Aug	2006	MilnePoint	border	70.1783	-146.4110	peep	7	50
6	Aug	2006	MilnePoint	border	70.1811	-146.3985	peep	4	20
6	Aug	2006	MilnePoint	border	70.1809	-146.3887	phalarope	50	20
6	Aug	2006	MilnePoint	border	70.1785	-146.3659	peep	4	40
6	Aug	2006	MilnePoint	border	70.1797	-146.3572	phalarope	70	30
6	Aug	2006	MilnePoint	border	70.1789	-146.3513	phalarope	3	20
6	Aug	2006	MilnePoint	border	70.1774	-146.2880	phalarope	2	10
6	Aug	2006	MilnePoint	border	70.1760	-146.2846	phalarope	1	10
6	Aug	2006	MilnePoint	border	70.1469	-146.0543	phalarope	10	30
6	Aug	2006	MilnePoint	border	70.1405	-146.0218	phalarope	6	50
6	Aug	2006	MilnePoint	border	70.1375	-146.0077	phalarope	5	30
6	Aug	2006	MilnePoint	border	70.1397	-145.9905	phalarope	1	20
6	Aug	2006	MilnePoint	border	70.1311	-145.9275	peep	10	30
6	Aug	2006	MilnePoint	border	70.1433	-145.8989	phalarope	3	30
6	Aug	2006	MilnePoint	border	70.1313	-145.8597	phalarope	3	40
6	Aug	2006	MilnePoint	border	70.1573	-145.8326	phalarope	2	20
6	Aug	2006	MilnePoint	border	70.1351	-145.7826	dunl	20	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
6	Aug	2006	MilnePoint	border	70.0570	-145.4731	peep	2	10
6	Aug	2006	MilnePoint	border	70.0486	-145.4727	peep	25	0
6	Aug	2006	MilnePoint	border	70.0478	-145.4814	peep	3	10
6	Aug	2006	MilnePoint	border	70.0471	-145.4732	peep	4	10
6	Aug	2006	MilnePoint	border	70.0406	-145.4478	peep	2	40
6	Aug	2006	MilnePoint	border	70.0150	-145.2509	phalarope	50	30
6	Aug	2006	MilnePoint	border	70.0191	-145.2466	peep	20	0
6	Aug	2006	MilnePoint	border	70.0237	-145.2472	peep	5	0
6	Aug	2006	MilnePoint	border	70.0275	-145.1887	phalarope	15	0
6	Aug	2006	MilnePoint	border	69.9808	-145.0481	peep	3	20
6	Aug	2006	MilnePoint	border	69.9805	-145.0249	peep	9	30
6	Aug	2006	MilnePoint	border	69.9801	-145.0192	phalarope	1	0
6	Aug	2006	MilnePoint	border	69.9775	-145.0027	phalarope	10	50
6	Aug	2006	MilnePoint	border	69.9749	-144.9930	phalarope	2	20
6	Aug	2006	MilnePoint	border	69.9728	-144.9866	peep	3	30
6	Aug	2006	MilnePoint	border	69.9822	-144.8259	phalarope	10	0
6	Aug	2006	MilnePoint	border	69.9777	-144.5824	peep	3	30
6	Aug	2006	MilnePoint	border	70.0177	-144.4858	peep	20	20
6	Aug	2006	MilnePoint	border	70.0183	-144.4615	peep	5	60
6	Aug	2006	MilnePoint	border	70.0239	-144.4278	peep	10	120
6	Aug	2006	MilnePoint	border	70.0267	-144.4093	peep	150	50
6	Aug	2006	MilnePoint	border	70.0291	-144.4061	peep	100	30
6	Aug	2006	MilnePoint	border	70.0353	-144.1800	peep	4	30
6	Aug	2006	MilnePoint	border	70.0455	-144.1286	dunl	20	40
6	Aug	2006	MilnePoint	border	70.0426	-144.1182	peep	50	50
6	Aug	2006	MilnePoint	border	70.0396	-144.1059	peep	8	40
6	Aug	2006	MilnePoint	border	70.0385	-144.0903	peep	15	50
6	Aug	2006	MilnePoint	border	70.0392	-144.0870	peep	10	30
6	Aug	2006	MilnePoint	border	70.0690	-144.1190	peep	4	30
6	Aug	2006	MilnePoint	border	70.0759	-144.0817	peep	10	40
6	Aug	2006	MilnePoint	border	70.0803	-144.0175	peep	10	30
6	Aug	2006	MilnePoint	border	70.0809	-143.9777	peep	40	70
6	Aug	2006	MilnePoint	border	70.0821	-143.9551	peep	20	30
6	Aug	2006	MilnePoint	border	70.0817	-143.9510	peep	15	20
6	Aug	2006	MilnePoint	border	70.0799	-143.9458	peep	10	30
6	Aug	2006	MilnePoint	border	70.0752	-143.9532	lbdo	20	30
6	Aug	2006	MilnePoint	border	70.0777	-143.9148	peep	20	30
6	Aug	2006	MilnePoint	border	70.0778	-143.9092	peep	3	30
6	Aug	2006	MilnePoint	border	70.0859	-143.7763	peep	10	40
6	Aug	2006	MilnePoint	border	70.0882	-143.7671	peep	3	40
6	Aug	2006	MilnePoint	border	70.0891	-143.7638	peep	6	30
6	Aug	2006	MilnePoint	border	70.0909	-143.7571	phalarope	10	30
6	Aug	2006	MilnePoint	border	70.1008	-143.6926	peep	12	10
6	Aug	2006	MilnePoint	border	70.0955	-143.6663	peep	10	0
6	Aug	2006	MilnePoint	border	70.0973	-143.5123	peep	3	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
6	Aug	2006	MilnePoint	border	70.1063	-143.3409	peep	100	50
6	Aug	2006	MilnePoint	border	70.1093	-143.3465	plover	6	50
6	Aug	2006	MilnePoint	border	70.1143	-143.3520	peep	200	60
6	Aug	2006	MilnePoint	border	70.1135	-143.3394	peep	150	50
6	Aug	2006	MilnePoint	border	70.1226	-143.3090	peep	25	70
6	Aug	2006	MilnePoint	border	70.1162	-143.2059	peep	50	20
6	Aug	2006	MilnePoint	border	70.1004	-143.2390	peep	7	30
6	Aug	2006	MilnePoint	border	70.0594	-142.9889	peep	5	0
6	Aug	2006	MilnePoint	border	69.8556	-142.2485	peep	8	50
6	Aug	2006	MilnePoint	border	69.8511	-142.1561	peep	50	20
6	Aug	2006	MilnePoint	border	69.8504	-142.1689	plover	3	10
6	Aug	2006	MilnePoint	border	69.8460	-142.1384	phalarope	15	30
6	Aug	2006	MilnePoint	border	69.8463	-142.1151	dunl	2	20
6	Aug	2006	MilnePoint	border	69.8462	-142.1049	peep	20	30
6	Aug	2006	MilnePoint	border	69.8396	-142.1099	peep	2	10
6	Aug	2006	MilnePoint	border	69.8465	-142.0983	plover	7	20
6	Aug	2006	MilnePoint	border	69.8478	-142.0921	peep	35	30
6	Aug	2006	MilnePoint	border	69.8436	-142.0886	peep	75	20
6	Aug	2006	MilnePoint	border	69.8375	-142.0979	phalarope	4	20
6	Aug	2006	MilnePoint	border	69.8384	-142.0891	phalarope	20	20
6	Aug	2006	MilnePoint	border	69.8402	-142.0824	peep	20	50
6	Aug	2006	MilnePoint	border	69.8402	-142.0821	peep	25	60
6	Aug	2006	MilnePoint	border	69.8404	-142.0745	peep	75	70
6	Aug	2006	MilnePoint	border	69.8399	-142.0702	peep	200	70
6	Aug	2006	MilnePoint	border	69.8389	-142.0673	peep	100	70
6	Aug	2006	MilnePoint	border	69.8361	-142.0557	peep	150	50
6	Aug	2006	MilnePoint	border	69.8253	-142.0491	peep	15	60
6	Aug	2006	MilnePoint	border	69.8227	-142.0384	peep	10	50
6	Aug	2006	MilnePoint	border	69.8032	-142.0214	peep	20	50
6	Aug	2006	MilnePoint	border	69.8033	-141.9269	peep	30	0
6	Aug	2006	MilnePoint	border	69.7944	-141.8270	phalarope	7	50
6	Aug	2006	MilnePoint	border	69.7831	-141.7761	phalarope	7	0
6	Aug	2006	MilnePoint	border	69.7819	-141.7243	phalarope	25	50
6	Aug	2006	MilnePoint	border	69.7802	-141.7137	peep	10	50
6	Aug	2006	MilnePoint	border	69.7716	-141.6819	peep	50	50
6	Aug	2006	MilnePoint	border	69.7572	-141.6568	peep	50	30
6	Aug	2006	MilnePoint	border	69.7579	-141.6522	peep	75	30
6	Aug	2006	MilnePoint	border	69.7588	-141.6450	peep	120	50
6	Aug	2006	MilnePoint	border	69.7555	-141.6189	peep	40	50
6	Aug	2006	MilnePoint	border	69.7546	-141.6146	peep	40	50
6	Aug	2006	MilnePoint	border	69.7529	-141.6089	peep	20	30
6	Aug	2006	MilnePoint	border	69.7515	-141.6067	peep	50	50
6	Aug	2006	MilnePoint	border	69.7504	-141.6050	peep	100	50
6	Aug	2006	MilnePoint	border	69.7448	-141.5884	peep	400	50
6	Aug	2006	MilnePoint	border	69.6417	-141.3941	peep	15	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	Aug	2006	SagDelta	Barrow	70.4005	-148.7974	peep	7	20
7	Aug	2006	SagDelta	Barrow	70.4036	-148.6736	peep	10	10
7	Aug	2006	SagDelta	Barrow	70.3954	-148.6019	phalarope	100	50
7	Aug	2006	SagDelta	Barrow	70.3955	-148.6080	peep	20	50
7	Aug	2006	SagDelta	Barrow	70.3942	-148.5875	phalarope	30	50
7	Aug	2006	SagDelta	Barrow	70.3592	-148.4730	peep	20	70
7	Aug	2006	SagDelta	Barrow	70.3156	-148.2286	peep	30	50
7	Aug	2006	SagDelta	Barrow	70.3140	-148.2285	phalarope	3	30
7	Aug	2006	SagDelta	Barrow	70.3054	-148.2260	peep	7	40
7	Aug	2006	SagDelta	Barrow	70.3370	-148.1657	peep	10	10
7	Aug	2006	SagDelta	Barrow	70.3306	-148.1561	peep	30	30
7	Aug	2006	SagDelta	Barrow	70.3280	-148.1568	peep	30	60
7	Aug	2006	SagDelta	Barrow	70.3132	-148.1558	peep	10	60
7	Aug	2006	SagDelta	Barrow	70.3254	-148.1327	peep	15	40
7	Aug	2006	SagDelta	Barrow	70.3338	-148.1101	peep	15	50
7	Aug	2006	SagDelta	Barrow	70.3328	-148.1067	peep	20	50
7	Aug	2006	SagDelta	Barrow	70.3322	-148.1020	peep	20	50
7	Aug	2006	SagDelta	Barrow	70.3278	-148.0737	rutu	2	30
7	Aug	2006	SagDelta	Barrow	70.3210	-148.0570	peep	15	30
7	Aug	2006	SagDelta	Barrow	70.3140	-148.1164	peep	5	40
7	Aug	2006	SagDelta	Barrow	70.3178	-147.9898	peep	50	0
7	Aug	2006	SagDelta	Barrow	70.3059	-147.9841	peep	50	40
7	Aug	2006	SagDelta	Barrow	70.3012	-147.9855	dunl	6	50
7	Aug	2006	SagDelta	Barrow	70.2759	-148.0279	peep	13	70
7	Aug	2006	SagDelta	Barrow	70.2737	-148.0309	peep	20	70
7	Aug	2006	SagDelta	Barrow	70.2999	-147.9466	peep	500	30
7	Aug	2006	SagDelta	Barrow	70.2954	-147.9074	peep	40	60
7	Aug	2006	SagDelta	Barrow	70.2939	-147.9245	lbdo	1	30
7	Aug	2006	SagDelta	Barrow	70.2879	-147.9691	lbdo	6	0
7	Aug	2006	SagDelta	Barrow	70.2856	-147.9846	peep	50	30
7	Aug	2006	SagDelta	Barrow	70.2801	-147.9578	peep	3	20
7	Aug	2006	SagDelta	Barrow	70.2709	-147.7917	peep	2	50
7	Aug	2006	SagDelta	Barrow	70.2646	-147.7908	phalarope	10	40
7	Aug	2006	SagDelta	Barrow	70.2622	-147.7910	peep	10	50
7	Aug	2006	SagDelta	Barrow	70.2560	-147.8104	radio	5332(55)	
7	Aug	2006	SagDelta	Barrow	70.2635	-147.8389	peep	10	30
7	Aug	2006	SagDelta	Barrow	70.2498	-147.8537	radio	6219(35)	
7	Aug	2006	SagDelta	Barrow	70.2446	-147.7856	phalarope	6	50
7	Aug	2006	SagDelta	Barrow	70.5085	-149.4467	peep	6	30
7	Aug	2006	SagDelta	Barrow	70.5028	-149.6460	phalarope	20	40
7	Aug	2006	SagDelta	Barrow	70.5016	-149.8534	phalarope	25	30
7	Aug	2006	SagDelta	Barrow	70.4195	-150.1195	peep	3	10
7	Aug	2006	SagDelta	Barrow	70.4177	-150.1090	peep	6	10
7	Aug	2006	SagDelta	Barrow	70.4269	-150.1587	peep	7	10
7	Aug	2006	SagDelta	Barrow	70.4279	-150.1533	phalarope	6	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	Aug	2006	SagDelta	Barrow	70.4300	-150.1502	phalarope	6	0
7	Aug	2006	SagDelta	Barrow	70.4352	-150.1932	peep	5	0
7	Aug	2006	SagDelta	Barrow	70.4269	-150.2483	peep	3	20
7	Aug	2006	SagDelta	Barrow	70.4187	-150.2882	phalarope	4	30
7	Aug	2006	SagDelta	Barrow	70.4147	-150.3089	phalarope	5	40
7	Aug	2006	SagDelta	Barrow	70.4079	-150.3448	peep	4	50
7	Aug	2006	SagDelta	Barrow	70.4728	-150.3640	peep	20	50
7	Aug	2006	SagDelta	Barrow	70.4753	-150.3574	peep	70	50
7	Aug	2006	SagDelta	Barrow	70.4778	-150.3552	peep	25	10
7	Aug	2006	SagDelta	Barrow	70.4771	-150.3681	peep	3	50
7	Aug	2006	SagDelta	Barrow	70.4763	-150.5224	phalarope	7	20
7	Aug	2006	SagDelta	Barrow	70.4456	-150.5550	phalarope	3	20
7	Aug	2006	SagDelta	Barrow	70.4634	-150.5820	peep	12	60
7	Aug	2006	SagDelta	Barrow	70.4583	-150.5958	peep	2	50
7	Aug	2006	SagDelta	Barrow	70.4605	-150.5965	peep	3	30
7	Aug	2006	SagDelta	Barrow	70.4607	-150.5964	peep	3	20
7	Aug	2006	SagDelta	Barrow	70.4623	-150.5962	phalarope	1	30
7	Aug	2006	SagDelta	Barrow	70.4642	-150.5958	phalarope	3	30
7	Aug	2006	SagDelta	Barrow	70.4760	-150.6322	phalarope	3	20
7	Aug	2006	SagDelta	Barrow	70.4691	-150.6295	phalarope	15	10
7	Aug	2006	SagDelta	Barrow	70.4715	-150.6426	peep	5	30
7	Aug	2006	SagDelta	Barrow	70.4797	-150.6519	peep	25	50
7	Aug	2006	SagDelta	Barrow	70.4478	-150.9331	phalarope	3	20
7	Aug	2006	SagDelta	Barrow	70.4459	-150.9869	phalarope	3	40
7	Aug	2006	SagDelta	Barrow	70.3884	-151.2866	peep	10	50
7	Aug	2006	SagDelta	Barrow	70.4018	-151.3629	peep	25	30
7	Aug	2006	SagDelta	Barrow	70.3865	-151.4283	phalarope	35	20
7	Aug	2006	SagDelta	Barrow	70.4050	-151.4309	dunl	6	50
7	Aug	2006	SagDelta	Barrow	70.4078	-151.4313	peep	5	20
7	Aug	2006	SagDelta	Barrow	70.4489	-151.9620	rutu	4	50
7	Aug	2006	SagDelta	Barrow	70.4626	-151.9534	peep	2	10
7	Aug	2006	SagDelta	Barrow	70.4795	-151.8675	phalarope	9	15
7	Aug	2006	SagDelta	Barrow	70.4870	-151.8221	peep	3	40
7	Aug	2006	SagDelta	Barrow	70.5113	-151.7865	peep	15	30
7	Aug	2006	SagDelta	Barrow	70.5517	-151.8489	peep	25	50
7	Aug	2006	SagDelta	Barrow	70.5523	-151.8511	peep	15	20
7	Aug	2006	SagDelta	Barrow	70.5617	-151.9628	peep	7	20
7	Aug	2006	SagDelta	Barrow	70.5413	-152.6208	phalarope	1	50
7	Aug	2006	SagDelta	Barrow	70.5552	-152.6351	peep	25	10
7	Aug	2006	SagDelta	Barrow	70.5510	-152.6378	peep	15	70
7	Aug	2006	SagDelta	Barrow	70.5454	-152.6150	phalarope	8	10
7	Aug	2006	SagDelta	Barrow	70.5729	-152.1422	peep	7	10
7	Aug	2006	SagDelta	Barrow	70.6089	-152.4236	peep	2	50
7	Aug	2006	SagDelta	Barrow	70.6685	-152.5104	peep	30	60
7	Aug	2006	SagDelta	Barrow	70.7119	-152.3983	peep	10	20

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	Aug	2006	SagDelta	Barrow	70.7536	-152.3392	dunl	1	20
7	Aug	2006	SagDelta	Barrow	70.7966	-154.2266	peep	2	10
7	Aug	2006	SagDelta	Barrow	70.8034	-154.3373	peep	10	70
7	Aug	2006	SagDelta	Barrow	70.7979	-154.3417	peep	20	50
7	Aug	2006	SagDelta	Barrow	70.8051	-154.4900	phalarope	3	20
7	Aug	2006	SagDelta	Barrow	70.8253	-154.5418	peep	3	20
7	Aug	2006	SagDelta	Barrow	70.8106	-154.5501	dunl	4	30
7	Aug	2006	SagDelta	Barrow	70.7975	-154.5615	lbdo	7	20
7	Aug	2006	SagDelta	Barrow	70.8672	-154.6851	peep	2	50
7	Aug	2006	SagDelta	Barrow	70.8684	-154.6846	dunl	5	30
7	Aug	2006	SagDelta	Barrow	70.8754	-154.6837	dunl	5	50
7	Aug	2006	SagDelta	Barrow	70.9023	-154.6781	peep	4	0
7	Aug	2006	SagDelta	Barrow	70.9085	-154.6230	peep	5	30
7	Aug	2006	SagDelta	Barrow	70.9296	-154.6309	dunl	3	50
7	Aug	2006	SagDelta	Barrow	70.9292	-154.6377	peep	12	30
7	Aug	2006	SagDelta	Barrow	70.9293	-154.6455	peep	5	30
7	Aug	2006	SagDelta	Barrow	70.9303	-154.6492	peep	25	30
7	Aug	2006	SagDelta	Barrow	71.0431	-154.6870	pesa	1	20
7	Aug	2006	SagDelta	Barrow	71.0628	-154.7357	phalarope	6	20
7	Aug	2006	SagDelta	Barrow	71.0739	-154.7729	phalarope	20	50
7	Aug	2006	SagDelta	Barrow	71.0759	-154.7788	phalarope	20	30
7	Aug	2006	SagDelta	Barrow	71.0771	-154.7839	phalarope	20	30
7	Aug	2006	SagDelta	Barrow	71.0788	-154.7892	phalarope	2	20
7	Aug	2006	SagDelta	Barrow	71.0833	-154.8216	phalarope	300	70
7	Aug	2006	SagDelta	Barrow	71.0822	-154.8277	phalarope	50	50
7	Aug	2006	SagDelta	Barrow	71.0737	-154.8390	phalarope	7	0
7	Aug	2006	SagDelta	Barrow	71.0803	-154.8838	peep	7	50
7	Aug	2006	SagDelta	Barrow	71.0815	-154.8838	phalarope	4	30
7	Aug	2006	SagDelta	Barrow	71.0908	-154.8900	peep	25	30
7	Aug	2006	SagDelta	Barrow	71.0915	-154.8947	phalarope	20	30
7	Aug	2006	SagDelta	Barrow	71.0915	-154.8986	peep	30	30
7	Aug	2006	SagDelta	Barrow	71.0890	-154.9043	peep	10	20
7	Aug	2006	SagDelta	Barrow	71.1007	-154.8968	peep	20	20
7	Aug	2006	SagDelta	Barrow	71.1017	-154.9025	peep	20	20
7	Aug	2006	SagDelta	Barrow	71.1020	-154.9051	phalarope	30	20
7	Aug	2006	SagDelta	Barrow	71.0358	-155.0110	phalarope	3	20
7	Aug	2006	SagDelta	Barrow	71.0339	-155.0115	peep	8	30
7	Aug	2006	SagDelta	Barrow	71.0527	-155.0325	dunl	7	20
7	Aug	2006	SagDelta	Barrow	71.0538	-155.0330	peep	4	20
7	Aug	2006	SagDelta	Barrow	71.0701	-155.0426	peep	2	20
7	Aug	2006	SagDelta	Barrow	71.1183	-155.0316	peep	3	50
7	Aug	2006	SagDelta	Barrow	71.1319	-155.0499	peep	30	30
7	Aug	2006	SagDelta	Barrow	71.1338	-155.0597	peep	25	30
7	Aug	2006	SagDelta	Barrow	71.1363	-155.0640	peep	5	30
7	Aug	2006	SagDelta	Barrow	71.1430	-155.0845	dunl	20	30

2006 fixed-wing survey 2

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	Aug	2006	SagDelta	Barrow	71.1390	-155.0906	phalarope	15	20
7	Aug	2006	SagDelta	Barrow	71.1360	-155.0842	phalarope	10	20
7	Aug	2006	SagDelta	Barrow	71.1270	-155.0873	phalarope	2	40
7	Aug	2006	SagDelta	Barrow	71.1219	-155.1005	phalarope	15	50
7	Aug	2006	SagDelta	Barrow	71.1074	-155.0642	phalarope	2	60
7	Aug	2006	SagDelta	Barrow	71.0659	-155.0896	phalarope	5	20
7	Aug	2006	SagDelta	Barrow	71.0794	-155.1305	phalarope	100	60
7	Aug	2006	SagDelta	Barrow	71.0826	-155.1340	peep	50	20
7	Aug	2006	SagDelta	Barrow	71.0840	-155.1355	peep	7	20
7	Aug	2006	SagDelta	Barrow	71.0858	-155.1372	phalarope	50	60
7	Aug	2006	SagDelta	Barrow	71.0937	-155.1443	phalarope	50	70
7	Aug	2006	SagDelta	Barrow	71.1015	-155.1508	phalarope	50	70
7	Aug	2006	SagDelta	Barrow	70.9958	-155.2390	phalarope	25	50
7	Aug	2006	SagDelta	Barrow	70.9980	-155.2417	peep	50	50
7	Aug	2006	SagDelta	Barrow	71.0041	-155.2489	phalarope	6	50
7	Aug	2006	SagDelta	Barrow	71.0082	-155.2525	peep	15	50
							total	9853	

2006 fixed-wing survey 3

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
9	Aug	6	Barrow	Kasegaluk	0	0	phalarope	300	10
9	Aug	6	Barrow	Kasegaluk	71.3703	-156.488	phalarope	2	30
9	Aug	6	Barrow	Kasegaluk	71.3774	-156.472	phalarope	15	30
9	Aug	6	Barrow	Kasegaluk	71.3823	-156.45	phalarope	100	70
9	Aug	6	Barrow	Kasegaluk	71.3808	-156.442	phalarope	200	70
9	Aug	6	Barrow	Kasegaluk	71.3767	-156.431	phalarope	25	30
9	Aug	6	Barrow	Kasegaluk	71.3725	-156.419	phalarope	15	30
9	Aug	6	Barrow	Kasegaluk	71.3714	-156.416	phalarope	15	30
9	Aug	6	Barrow	Kasegaluk	71.3679	-156.406	phalarope	5	30
9	Aug	6	Barrow	Kasegaluk	71.3653	-156.396	phalarope	25	40
9	Aug	6	Barrow	Kasegaluk	71.3644	-156.393	phalarope	5	30
9	Aug	6	Barrow	Kasegaluk	71.3637	-156.39	phalarope	15	40
9	Aug	6	Barrow	Kasegaluk	71.3583	-156.364	phalarope	1	20
9	Aug	6	Barrow	Kasegaluk	71.3623	-156.364	phalarope	100	50
9	Aug	6	Barrow	Kasegaluk	71.3665	-156.391	phalarope	200	30
9	Aug	6	Barrow	Kasegaluk	71.3675	-156.395	phalarope	200	40
9	Aug	6	Barrow	Kasegaluk	71.3688	-156.399	phalarope	100	40
9	Aug	6	Barrow	Kasegaluk	71.371	-156.407	phalarope	75	30
9	Aug	6	Barrow	Kasegaluk	71.3733	-156.414	phalarope	50	40
9	Aug	6	Barrow	Kasegaluk	71.3756	-156.421	phalarope	50	40
9	Aug	6	Barrow	Kasegaluk	71.3776	-156.426	phalarope	50	40
9	Aug	6	Barrow	Kasegaluk	71.3848	-156.447	phalarope	200	40
9	Aug	6	Barrow	Kasegaluk	71.3867	-156.455	phalarope	200	50
9	Aug	6	Barrow	Kasegaluk	71.3879	-156.463	phalarope	100	50
9	Aug	6	Barrow	Kasegaluk	71.3886	-156.468	phalarope	100	50
9	Aug	6	Barrow	Kasegaluk	71.3891	-156.474	phalarope	100	50
9	Aug	6	Barrow	Kasegaluk	71.3875	-156.481	phalarope	100	20
9	Aug	6	Barrow	Kasegaluk	71.3856	-156.482	phalarope	200	50
9	Aug	6	Barrow	Kasegaluk	71.3821	-156.48	phalarope	100	20
9	Aug	6	Barrow	Kasegaluk	71.3734	-156.489	phalarope	15	40
9	Aug	6	Barrow	Kasegaluk	71.3723	-156.491	phalarope	25	40
9	Aug	6	Barrow	Kasegaluk	71.3697	-156.496	phalarope	5	40
9	Aug	6	Barrow	Kasegaluk	71.3596	-156.524	phalarope	10	50
9	Aug	6	Barrow	Kasegaluk	71.3581	-156.532	phalarope	50	50
9	Aug	6	Barrow	Kasegaluk	71.3564	-156.54	phalarope	50	50
9	Aug	6	Barrow	Kasegaluk	71.3556	-156.544	phalarope	50	50
9	Aug	6	Barrow	Kasegaluk	71.3541	-156.552	phalarope	100	30
9	Aug	6	Barrow	Kasegaluk	71.353	-156.557	phalarope	100	30
9	Aug	6	Barrow	Kasegaluk	71.3515	-156.566	phalarope	50	30
9	Aug	6	Barrow	Kasegaluk	71.3504	-156.573	phalarope	100	40
9	Aug	6	Barrow	Kasegaluk	71.3487	-156.585	phalarope	50	70
9	Aug	6	Barrow	Kasegaluk	71.3209	-156.702	phalarope	5	50
9	Aug	6	Barrow	Kasegaluk	71.3189	-156.709	phalarope	10	50
9	Aug	6	Barrow	Kasegaluk	71.2427	-156.898	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	71.2387	-156.906	phalarope	3	20

2006 fixed-wing survey 3

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
9	Aug	6	Barrow	Kasegaluk	71.0973	-157.166	phalarope	10	30
9	Aug	6	Barrow	Kasegaluk	71.0903	-157.178	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	71.0503	-157.247	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.9448	-157.514	phalarope	5	30
9	Aug	6	Barrow	Kasegaluk	70.8737	-157.777	phalarope	2	40
9	Aug	6	Barrow	Kasegaluk	70.8732	-157.779	phalarope	3	40
9	Aug	6	Barrow	Kasegaluk	70.8358	-157.996	phalarope	4	30
9	Aug	6	Barrow	Kasegaluk	70.8317	-158.025	phalarope	6	0
9	Aug	6	Barrow	Kasegaluk	70.8303	-158.037	phalarope	7	30
9	Aug	6	Barrow	Kasegaluk	70.8175	-158.208	phalarope	4	30
9	Aug	6	Barrow	Kasegaluk	70.8172	-158.217	phalarope	50	20
9	Aug	6	Barrow	Kasegaluk	70.8169	-158.228	phalarope	2	
9	Aug	6	Barrow	Kasegaluk	70.8169	-158.228	phalarope	25	30
9	Aug	6	Barrow	Kasegaluk	70.8166	-158.241	phalarope	25	30
9	Aug	6	Barrow	Kasegaluk	70.817	-158.268	phalarope	200	0
9	Aug	6	Barrow	Kasegaluk	70.817	-158.282	phalarope	20	10
9	Aug	6	Barrow	Kasegaluk	70.7982	-158.399	phalarope	5	30
9	Aug	6	Barrow	Kasegaluk	70.7965	-158.44	phalarope	4	30
9	Aug	6	Barrow	Kasegaluk	70.7927	-158.579	phalarope	10	50
9	Aug	6	Barrow	Kasegaluk	70.7869	-158.719	phalarope	3	20
9	Aug	6	Barrow	Kasegaluk	70.7869	-158.719	dunl	1	20
9	Aug	6	Barrow	Kasegaluk	70.7942	-158.919	phalarope	2	50
9	Aug	6	Barrow	Kasegaluk	70.7948	-158.927	phalarope	1	20
9	Aug	6	Barrow	Kasegaluk	70.8072	-159.013	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.804	-159.065	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.8003	-159.04	phalarope	100	30
9	Aug	6	Barrow	Kasegaluk	70.7997	-159.032	phalarope	50	20
9	Aug	6	Barrow	Kasegaluk	70.7839	-158.951	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.7718	-158.958	phalarope	15	50
9	Aug	6	Barrow	Kasegaluk	70.7683	-159.063	dunl	2	20
9	Aug	6	Barrow	Kasegaluk	70.8566	-159.178	phalarope	3	20
9	Aug	6	Barrow	Kasegaluk	70.8519	-159.188	lbdo	1	10
9	Aug	6	Barrow	Kasegaluk	70.8457	-159.247	peep	20	20
9	Aug	6	Barrow	Kasegaluk	70.8442	-159.253	phalarope	40	10
9	Aug	6	Barrow	Kasegaluk	70.8435	-159.285	peep	2	20
9	Aug	6	Barrow	Kasegaluk	70.843	-159.367	peep	25	20
9	Aug	6	Barrow	Kasegaluk	70.6734	-159.96	peep	3	30
9	Aug	6	Barrow	Kasegaluk	70.6149	-160.102	phalarope	25	40
9	Aug	6	Barrow	Kasegaluk	70.5442	-160.259	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.4399	-160.549	phalarope	2	30
9	Aug	6	Barrow	Kasegaluk	70.4382	-160.551	phalarope	4	30
9	Aug	6	Barrow	Kasegaluk	70.4373	-160.552	phalarope	4	50
9	Aug	6	Barrow	Kasegaluk	70.4367	-160.553	phalarope	10	50
9	Aug	6	Barrow	Kasegaluk	70.4334	-160.561	peep	10	50
9	Aug	6	Barrow	Kasegaluk	70.4184	-160.627	phalarope	4	20

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
9	Aug	6	Barrow	Kasegaluk	70.3698	-160.767	peep	10	20
9	Aug	6	Barrow	Kasegaluk	70.3368	-160.881	peep	3	40
9	Aug	6	Barrow	Kasegaluk	70.3127	-161.05	phalarope	2	20
9	Aug	6	Barrow	Kasegaluk	70.2815	-161.171	dunl	6	40
9	Aug	6	Barrow	Kasegaluk	70.2473	-161.321	phalarope	50	50
9	Aug	6	Barrow	Kasegaluk	70.2413	-161.461	phalarope	10	20
9	Aug	6	Barrow	Kasegaluk	70.2785	-161.805	peep	12	0
9	Aug	6	Barrow	Kasegaluk	70.3026	-161.834	peep	25	20
9	Aug	6	Barrow	Kasegaluk	70.18	-162.11	peep	25	70
9	Aug	6	Barrow	Kasegaluk	70.0892	-162.307	peep	3	40
9	Aug	6	Barrow	Kasegaluk	69.9628	-162.501	peep	25	0
9	Aug	6	Barrow	Kasegaluk	69.7637	-162.968	phalarope	10	20
9	Aug	6	Barrow	Kasegaluk	69.6731	-163.032	phalarope	12	20
9	Aug	6	Barrow	Kasegaluk	69.67	-163.029	phalarope	50	20
9	Aug	6	Barrow	Kasegaluk	69.6652	-163.041	peep	20	20
9	Aug	6	Barrow	Kasegaluk	69.6444	-163.003	peep	30	60
9	Aug	6	Barrow	Kasegaluk	69.6437	-163.027	phalarope	10	20
9	Aug	6	Barrow	Kasegaluk	69.6342	-163.045	dunl	5	20
9	Aug	6	Barrow	Kasegaluk	69.5976	-163.093	peep	3	50
9	Aug	6	Barrow	Kasegaluk	69.5932	-163.119	phalarope	10	0
9	Aug	6	Barrow	Kasegaluk	69.4828	-163.071	peep	10	70
11	Aug	6	Barrow	ScottPoint	71.3364	-156.588	rutu	9	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3059	-156.579	peep	10	0
11	Aug	6	Barrow	ScottPoint_barrier	71.3007	-156.591	peep	12	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3069	-156.572	dunl	3	10
11	Aug	6	Barrow	ScottPoint_barrier	71.3608	-156.342	phalarope	50	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3602	-156.334	phalarope	10	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3596	-156.328	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3591	-156.323	phalarope	20	10
11	Aug	6	Barrow	ScottPoint_barrier	71.3588	-156.321	phalarope	3	10
11	Aug	6	Barrow	ScottPoint_barrier	71.3579	-156.315	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3571	-156.309	phalarope	15	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3557	-156.298	phalarope	50	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3536	-156.292	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3523	-156.289	phalarope	10	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3507	-156.284	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3502	-156.282	phalarope	40	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3479	-156.276	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3465	-156.275	phalarope	6	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3443	-156.273	phalarope	5	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3416	-156.223	phalarope	15	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3413	-156.215	phalarope	1	10
11	Aug	6	Barrow	ScottPoint_barrier	71.3411	-156.207	phalarope	10	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3405	-156.202	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3394	-156.193	phalarope	20	10

2006 fixed-wing survey 3

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
11	Aug	6	Barrow	ScottPoint_barrier	71.3385	-156.184	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3376	-156.177	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3356	-156.161	phalarope	30	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3321	-156.139	phalarope	50	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3313	-156.133	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3302	-156.123	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3296	-156.118	phalarope	50	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3294	-156.115	phalarope	10	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3284	-156.108	phalarope	10	50
11	Aug	6	Barrow	ScottPoint_barrier	71.327	-156.099	phalarope	10	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3262	-156.094	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3256	-156.091	phalarope	10	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3246	-156.086	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3236	-156.08	phalarope	20	40
11	Aug	6	Barrow	ScottPoint_barrier	71.3228	-156.075	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3221	-156.07	phalarope	20	60
11	Aug	6	Barrow	ScottPoint_barrier	71.3207	-156.062	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3199	-156.059	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3191	-156.055	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3173	-156.047	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3154	-156.039	phalarope	50	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3145	-156.036	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3145	-156.036	phalarope	50	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3114	-156.019	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3108	-156.016	phalarope	20	40
11	Aug	6	Barrow	ScottPoint_barrier	71.3104	-156.014	phalarope	10	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3092	-156.009	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3081	-156.004	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3075	-156.002	phalarope	20	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3075	-156.002	phalarope	30	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3052	-155.996	phalarope	50	20
11	Aug	6	Barrow	ScottPoint_barrier	71.3042	-155.992	phalarope	50	50
11	Aug	6	Barrow	ScottPoint_barrier	71.3026	-155.987	phalarope	20	30
11	Aug	6	Barrow	ScottPoint_barrier	71.3013	-155.984	phalarope	30	30
11	Aug	6	Barrow	ScottPoint_barrier	71.2999	-155.981	phalarope	50	30
11	Aug	6	Barrow	ScottPoint_barrier	71.2946	-155.968	phalarope	20	50
11	Aug	6	Barrow	ScottPoint_barrier	71.2921	-155.96	phalarope	5	10
11	Aug	6	Barrow	ScottPoint_barrier	71.2909	-155.957	phalarope	5	10
11	Aug	6	Barrow	ScottPoint_barrier	71.2908	-155.956	phalarope	5	20
11	Aug	6	Barrow	ScottPoint_barrier	71.2884	-155.951	phalarope	10	20
11	Aug	6	Barrow	ScottPoint_barrier	71.2869	-155.949	phalarope	3	20
11	Aug	6	Barrow	ScottPoint_barrier	71.279	-155.935	phalarope	2	20
11	Aug	6	Barrow	ScottPoint_barrier	71.277	-155.934	phalarope	6	50
11	Aug	6	Barrow	ScottPoint_barrier	71.2612	-155.924	phalarope	5	30
11	Aug	6	ScottPoint	Barrow_coast	71.2202	-156.073	phalarope	2	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
11	Aug	6	ScottPoint	Barrow_coast	71.2212	-156.075	phalarope	2	50
11	Aug	6	ScottPoint	Barrow_coast	71.2227	-156.082	phalarope	4	50
11	Aug	6	ScottPoint	Barrow_coast	71.2229	-156.087	phalarope	4	50
11	Aug	6	ScottPoint	Barrow_coast	71.2223	-156.105	dunl	2	50
11	Aug	6	ScottPoint	Barrow_coast	71.221	-156.111	phalarope	4	50
11	Aug	6	ScottPoint	Barrow_coast	71.2246	-156.098	peep	3	30
11	Aug	6	ScottPoint	Barrow_coast	71.2246	-156.098	phalarope	3	30
11	Aug	6	ScottPoint	Barrow_coast	71.2259	-156.092	phalarope	5	20
11	Aug	6	ScottPoint	Barrow_coast	71.228	-156.093	phalarope	10	20
11	Aug	6	ScottPoint	Barrow_coast	71.2292	-156.093	phalarope	2	30
11	Aug	6	ScottPoint	Barrow_coast	71.2324	-156.083	phalarope	1	20
11	Aug	6	ScottPoint	Barrow_coast	71.2308	-156.084	phalarope	1	20
11	Aug	6	ScottPoint	Barrow_coast	71.2325	-156.082	phalarope	2	20
11	Aug	6	ScottPoint	Barrow_coast	71.2361	-156.079	phalarope	1	20
11	Aug	6	ScottPoint	Barrow_coast	71.24	-156.085	phalarope	20	20
11	Aug	6	ScottPoint	Barrow_coast	71.2415	-156.096	peep	1	20
11	Aug	6	ScottPoint	Barrow_coast	71.245	-156.141	peep	4	50
11	Aug	6	ScottPoint	Barrow_coast	71.2503	-156.164	phalarope	50	50
11	Aug	6	ScottPoint	Barrow_coast	71.2567	-156.201	phalarope	1	30
11	Aug	6	ScottPoint	Barrow_coast	71.2581	-156.212	peep	15	50
11	Aug	6	ScottPoint	Barrow_coast	71.2595	-156.229	peep	4	50
11	Aug	6	ScottPoint	Barrow_coast	71.2688	-156.311	phalarope	10	30
11	Aug	6	ScottPoint	Barrow_coast	71.2605	-156.297	peep	15	30
11	Aug	6	ScottPoint	Barrow_coast	71.265	-156.41	phalarope	2	50
11	Aug	6	ScottPoint	Barrow_coast	71.2663	-156.413	phalarope	2	10
11	Aug	6	ScottPoint	Barrow_coast	71.2669	-156.411	phalarope	5	30
11	Aug	6	ScottPoint	Barrow_coast	71.2927	-156.528	dunl	5	30
11	Aug	6	ScottPoint	FatigueBay	71.2084	-156.045	phalarope	5	20
11	Aug	6	ScottPoint	FatigueBay	71.205	-156.04	phalarope	8	30
11	Aug	6	ScottPoint	FatigueBay	71.2026	-156.035	phalarope	10	20
11	Aug	6	ScottPoint	FatigueBay	71.1986	-156.034	phalarope	3	10
11	Aug	6	ScottPoint	FatigueBay	71.1825	-156.053	phalarope	2	10
11	Aug	6	ScottPoint	FatigueBay	71.1822	-156.056	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay	71.1778	-156.072	phalarope	20	10
11	Aug	6	ScottPoint	FatigueBay	71.17	-156.096	phalarope	5	20
11	Aug	6	ScottPoint	FatigueBay	71.1645	-156.104	phalarope	2	70
11	Aug	6	ScottPoint	FatigueBay	71.1664	-156.092	phalarope	10	20
11	Aug	6	ScottPoint	FatigueBay	71.1685	-156.068	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay	71.171	-156.032	phalarope	2	20
11	Aug	6	ScottPoint	FatigueBay	71.1722	-156.019	phalarope	2	30
11	Aug	6	ScottPoint	FatigueBay	71.1759	-156.002	phalarope	1	30
11	Aug	6	ScottPoint	FatigueBay	71.1779	-155.992	phalarope	3	10
11	Aug	6	ScottPoint	FatigueBay	71.1808	-155.989	phalarope	2	50
11	Aug	6	ScottPoint	FatigueBay	71.1823	-155.979	phalarope	2	30
11	Aug	6	ScottPoint	FatigueBay	71.1823	-155.979	phalarope	2	20

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1846	-155.959	phalarope	4	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1882	-155.952	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1965	-155.946	phalarope	5	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2005	-155.943	phalarope	20	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2086	-155.942	phalarope	4	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2308	-155.752	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2322	-155.74	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2318	-155.721	phalarope	50	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2314	-155.692	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2336	-155.672	phalarope	50	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2338	-155.663	phalarope	50	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2328	-155.655	phalarope	50	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2321	-155.651	phalarope	50	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2312	-155.639	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2308	-155.635	phalarope	20	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.23	-155.629	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2291	-155.621	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.228	-155.613	phalarope	50	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2262	-155.603	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2256	-155.599	phalarope	20	60
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2241	-155.591	phalarope	10	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2237	-155.586	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2231	-155.561	phalarope	20	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2218	-155.554	phalarope	5	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2211	-155.552	phalarope	50	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2201	-155.549	phalarope	30	60
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2188	-155.547	phalarope	50	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2139	-155.514	phalarope	5	60
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2104	-155.491	phalarope	10	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2097	-155.487	phalarope	5	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2091	-155.482	phalarope	20	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2076	-155.459	phalarope	2	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2066	-155.453	phalarope	5	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2057	-155.449	phalarope	2	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.2045	-155.445	phalarope	15	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1967	-155.424	phalarope	3	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1843	-155.404	phalarope	15	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1785	-155.36	phalarope	2	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1768	-155.348	phalarope	3	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1801	-155.305	phalarope	5	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1801	-155.305	phalarope	5	60
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1796	-155.297	phalarope	10	60
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1795	-155.288	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1791	-155.277	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1788	-155.272	phalarope	10	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1784	-155.257	phalarope	20	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1782	-155.252	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1781	-155.246	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.177	-155.231	phalarope	8	20
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1758	-155.218	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1743	-155.21	phalarope	20	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1727	-155.201	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1717	-155.196	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1708	-155.192	phalarope	50	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1652	-155.184	phalarope	20	0
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1639	-155.174	phalarope	15	10
11	Aug	6	ScottPoint	FatigueBay_barrier	71.163	-155.164	phalarope	20	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1599	-155.115	phalarope	20	50
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1582	-155.103	phalarope	10	30
11	Aug	6	ScottPoint	FatigueBay_barrier	71.157	-155.095	phalarope	20	40
11	Aug	6	ScottPoint	FatigueBay_barrier	71.1554	-155.089	phalarope	10	30
11	Aug	6	ChristiePoint	?	71.1803	-155.685	phalarope	10	50
11	Aug	6	ChristiePoint	?	71.1796	-155.696	phalarope	10	30
11	Aug	6	ChristiePoint	?	71.1809	-155.715	phalarope	30	70
11	Aug	6	ChristiePoint	?	71.1825	-155.72	phalarope	30	20
11	Aug	6	ChristiePoint	?	71.1843	-155.724	phalarope	50	50
11	Aug	6	ChristiePoint	?	71.1902	-155.732	phalarope	20	30
11	Aug	6	ChristiePoint	?	71.1919	-155.737	phalarope	20	30
11	Aug	6	ChristiePoint	?	71.1925	-155.749	phalarope	15	50
11	Aug	6	ChristiePoint	?	71.19	-155.769	phalarope	50	50
11	Aug	6	ChristiePoint	?	71.1903	-155.772	phalarope	100	50
11	Aug	6	ChristiePoint	?	71.1919	-155.783	phalarope	15	30
11	Aug	6	ChristiePoint	?	71.1936	-155.79	phalarope	30	40
11	Aug	6	ChristiePoint	?	71.19	-155.831	phalarope	20	40
11	Aug	6	ChristiePoint	?	71.1874	-155.854	phalarope	9	50
11	Aug	6	ChristiePoint	?	71.1869	-155.878	phalarope	10	60
11	Aug	6	ChristiePoint	?	71.186	-155.889	phalarope	15	0
11	Aug	6	ChristiePoint	?	71.1819	-155.878	phalarope	20	50
11	Aug	6	ChristiePoint	?	71.1803	-155.877	phalarope	10	50
11	Aug	6	ChristiePoint	?	71.1774	-155.896	peep	15	60
11	Aug	6	ChristiePoint	?	71.187	-155.889	phalarope	40	10
11	Aug	6	ChristiePoint	?	71.2084	-155.918	phalarope	5	20
11	Aug	6	ChristiePoint	?	71.1358	-155.791	phalarope	2000	.
11	Aug	6	AnagruakPoint	?	70.777	-154.25	peep	6	30
11	Aug	6	AnagruakPoint	?	70.7762	-154.243	phalarope	2	30
11	Aug	6	AnagruakPoint	?	70.7712	-154.199	dunl	2	40
11	Aug	6	AnagruakPoint	?	70.8842	-153.564	peep	20	50
11	Aug	6	AnagruakPoint	?	70.8838	-153.52	phalarope	20	30
11	Aug	6	AnagruakPoint	?	70.8839	-153.507	phalarope	20	30
11	Aug	6	AnagruakPoint	?	70.8841	-153.501	rutu	3	10

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
11	Aug	6	AnagruakPoint	?	70.8845	-153.489	phalarope	50	50
11	Aug	6	AnagruakPoint	?	70.8892	-153.427	rutu	2	10
11	Aug	6	AnagruakPoint	?	70.8962	-153.373	dunl	10	50
11	Aug	6	AnagruakPoint	?	70.9103	-153.042	phalarope	5	20
11	Aug	6	AnagruakPoint	?	70.8857	-152.997	phalarope	4	10
11	Aug	6	AnagruakPoint	?	70.8884	-153.037	phalarope	3	20
11	Aug	6	AnagruakPoint	?	70.89	-153.008	phalarope	20	10
11	Aug	6	AnagruakPoint	?	70.8877	-152.913	phalarope	15	20
11	Aug	6	AnagruakPoint	?	70.8858	-152.907	phalarope	20	20
11	Aug	6	AnagruakPoint	?	70.8843	-152.904	phalarope	50	20
11	Aug	6	AnagruakPoint	?	70.8686	-152.9	phalarope	10	10
11	Aug	6	AnagruakPoint	?	70.8662	-152.898	phalarope	20	20
11	Aug	6	AnagruakPoint	?	70.8641	-152.893	phalarope	50	20
11	Aug	6	AnagruakPoint	?	70.8624	-152.89	phalarope	20	20
11	Aug	6	AnagruakPoint	?	70.8574	-152.88	phalarope	20	20
11	Aug	6	AnagruakPoint	?	70.8512	-152.866	phalarope	20	30
11	Aug	6	AnagruakPoint	?	70.8489	-152.855	phalarope	100	30
11	Aug	6	AnagruakPoint	?	70.8486	-152.846	phalarope	50	30
11	Aug	6	AnagruakPoint	?	70.864	-152.727	phalarope	2	10
11	Aug	6	AnagruakPoint	?	70.881	-152.688	phalarope	200	50
11	Aug	6	AnagruakPoint	?	70.8789	-152.589	peep	10	30
11	Aug	6	AnagruakPoint	?	70.881	-152.579	rutu	4	20
11	Aug	6	AnagruakPoint	?	70.8805	-152.573	rutu	1	20
11	Aug	6	AnagruakPoint	?	70.7415	-152.391	rutu	3	20
12	Aug	2006	Kuparuk	OliktokPoint	70.4961	-149.757	phalarope	4	30
12	Aug	2006	Kuparuk	OliktokPoint	70.5025	-149.725	phalarope	5	20
12	Aug	2006	Kuparuk	OliktokPoint	70.4992	-149.705	peep	25	30
12	Aug	2006	Kuparuk	OliktokPoint	70.495	-149.541	peep	1	20
12	Aug	2006	Kuparuk	OliktokPoint	70.4886	-149.274	dunl	1	60
12	Aug	2006	Kuparuk	OliktokPoint	70.4285	-148.874	peep	25	30
12	Aug	2006	Kuparuk	OliktokPoint	70.4163	-148.844	peep	20	60
12	Aug	2006	Kuparuk	OliktokPoint	70.3315	-148.466	peep	15	20
12	Aug	2006	Kuparuk	OliktokPoint	70.4923	-149.919	phalarope	2	30
12	Aug	2006	Kuparuk	OliktokPoint	70.4303	-150.223	phalarope	3	40
12	Aug	2006	Kuparuk	OliktokPoint	70.4751	-150.611	phalarope	5	30
12	Aug	2006	Kuparuk	OliktokPoint	70.4141	-151.195	phalarope	4	30
12	Aug	2006	Kuparuk	OliktokPoint	70.3699	-151.147	peep	25	50
12	Aug	2006	Kuparuk	OliktokPoint	70.3677	-151.153	peep	25	30
12	Aug	2006	Kuparuk	OliktokPoint	70.3645	-151.231	phalarope	3	40
12	Aug	2006	Kuparuk	OliktokPoint	70.4229	-151.422	peep	50	50
12	Aug	2006	Kuparuk	OliktokPoint	70.4017	-151.377	phalarope	25	0
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8	-154.247	dunl	2	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.7889	-154.234	dunl	3	20
12	Aug	2006	IkpikpukDelta	FatigueBay	70.7837	-154.269	phalarope	10	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8198	-154.454	dunl	10	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8229	-154.511	phalarope	1	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.807	-154.541	phalarope	2	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.802	-154.563	phalarope	50	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8299	-154.61	peep	2	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8489	-154.616	peep	3	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8607	-154.608	phalarope	25	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8671	-154.61	phalarope	50	0
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8863	-154.643	phalarope	100	0
12	Aug	2006	IkpikpukDelta	FatigueBay	70.89	-154.658	phalarope	100	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8898	-154.771	phalarope	4	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8968	-154.72	phalarope	4	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8965	-154.716	phalarope	2	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8962	-154.713	phalarope	5	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8926	-154.706	phalarope	20	50
12	Aug	2006	IkpikpukDelta	FatigueBay	70.892	-154.69	phalarope	200	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.896	-154.686	phalarope	10	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.8986	-154.683	phalarope	10	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9033	-154.666	phalarope	4	20
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9077	-154.637	phalarope	20	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9074	-154.634	phalarope	50	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.907	-154.627	phalarope	20	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9069	-154.623	phalarope	20	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.94	-154.635	phalarope	20	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9246	-154.638	phalarope	50	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9233	-154.631	peep	3	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9242	-154.624	peep	4	20
12	Aug	2006	IkpikpukDelta	FatigueBay	70.946	-154.62	dunl	15	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9479	-154.621	phalarope	10	40
12	Aug	2006	IkpikpukDelta	FatigueBay	70.948	-154.625	dunl	2	30
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9527	-154.614	phalarope	10	0
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9933	-154.572	radio	5720(55)	
12	Aug	2006	IkpikpukDelta	FatigueBay	70.9978	-154.577	phalarope	25	30
12	Aug	2006	IkpikpukDelta	FatigueBay	71.0391	-154.673	phalarope	20	30
12	Aug	2006	IkpikpukDelta	FatigueBay	71.0428	-154.684	phalarope	10	30
12	Aug	2006	IkpikpukDelta	FatigueBay	71.0443	-154.689	phalarope	50	20
12	Aug	2006	IkpikpukDelta	FatigueBay	71.0552	-154.717	phalarope	200	20
12	Aug	2006	IkpikpukDelta	FatigueBay	71.0775	-154.784	phalarope	500	30
12	Aug	2006	FatigueBay	Kuparuk (inland)	70.8474	-153.548	radio	5469(35)	
14	Aug	2006	BullenPoint	Kuparuk	70.1675	-146.916	phalarope	20	30
17	Aug	2006	Deadhorse	Canning	70.3226	-148.079	peep	3	100
17	Aug	2006	Deadhorse	Canning	70.2978	-148.069	phalarope	1	30
17	Aug	2006	Deadhorse	Canning	70.2973	-148.043	peep	5	50
17	Aug	2006	Deadhorse	Canning	70.2746	-148.023	phalarope	12	30
17	Aug	2006	Deadhorse	Canning	70.2347	-147.791	dunl	200	70
17	Aug	2006	Deadhorse	Canning	70.2313	-147.79	radio	5294(55)	

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
17	Aug	2006	Deadhorse	Canning	70.2084	-147.603	dunl	1	30
17	Aug	2006	Deadhorse	Canning	70.2074	-147.599	phalarope	1	30
17	Aug	2006	Deadhorse	Canning	70.1964	-147.255	phalarope	20	30
17	Aug	2006	Deadhorse	Canning	70.19	-147.259	dunl	5	40
17	Aug	2006	Deadhorse	Canning	70.19	-147.259	peep	1	40
17	Aug	2006	Deadhorse	Canning	70.185	-147.23	dunl	9	50
17	Aug	2006	Deadhorse	Canning	70.1705	-147.231	dunl	5	20
17	Aug	2006	Deadhorse	Canning	70.1677	-146.868	phalarope	9	40
17	Aug	2006	Deadhorse	Canning	70.1721	-146.722	peep	3	70
17	Aug	2006	Deadhorse	Canning	70.181	-146.615	phalarope	14	40
17	Aug	2006	Deadhorse	Canning	70.1818	-146.458	phalarope	3	20
17	Aug	2006	Deadhorse	Canning	70.1797	-146.382	phalarope	13	30
17	Aug	2006	Deadhorse	Canning	70.1795	-146.353	phalarope	15	40
17	Aug	2006	Deadhorse	Canning	70.1383	-146.006	phalarope	3	50
17	Aug	2006	Deadhorse	Canning	70.0735	-145.549	dunl	200	20
17	Aug	2006	Deadhorse	Canning	70.0209	-145.252	dunl	25	50
17	Aug	2006	Deadhorse	Canning	69.9911	-145.17	plover	1	70
17	Aug	2006	Deadhorse	Canning	69.9873	-145.129	plover	2	30
17	Aug	2006	Deadhorse	Canning	69.9825	-145.07	phalarope	20	30
17	Aug	2006	Deadhorse	Canning	69.9815	-145.037	plover	12	60
17	Aug	2006	Deadhorse	Canning	69.9753	-144.994	phalarope	4	40
17	Aug	2006	Deadhorse	Canning	69.9786	-144.837	dunl	5	40
17	Aug	2006	Deadhorse	Canning	70.1163	-145.93	radio	5107(35)	
							total	12844	

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
23	Aug	2006	Barrow	PeardBay	71.2441	-156.8965	phalarope	200	30
23	Aug	2006	Barrow	PeardBay	71.2361	-156.9138	phalarope	50	20
23	Aug	2006	Barrow	PeardBay	71.2216	-156.9433	phalarope	5	20
23	Aug	2006	Barrow	PeardBay	71.2157	-156.9554	phalarope	50	20
23	Aug	2006	Barrow	PeardBay	71.2066	-156.9734	phalarope	50	30
23	Aug	2006	Barrow	PeardBay	71.2043	-156.9778	phalarope	100	50
23	Aug	2006	Barrow	PeardBay	71.1949	-156.9965	phalarope	50	20
23	Aug	2006	Barrow	PeardBay	71.1749	-157.0311	phalarope	20	30
23	Aug	2006	Barrow	PeardBay	71.1641	-157.0492	phalarope	50	40
23	Aug	2006	Barrow	PeardBay	71.1399	-157.0961	phalarope	20	30
23	Aug	2006	Barrow	PeardBay	71.1173	-157.1354	phalarope	20	50
23	Aug	2006	Barrow	PeardBay	71.0841	-157.1925	phalarope	100	30
23	Aug	2006	Barrow	PeardBay	71.0231	-157.3082	phalarope	20	50
23	Aug	2006	Barrow	PeardBay	70.9837	-157.4041	phalarope	20	30
23	Aug	2006	Barrow	PeardBay	70.9795	-157.4152	phalarope	10	30
23	Aug	2006	PeardBay	IcyCape	70.8239	-158.3911	phalarope	50	30
23	Aug	2006	PeardBay	IcyCape	70.8400	-158.5461	phalarope	2	20
23	Aug	2006	PeardBay	IcyCape	70.7996	-159.0605	phalarope	5	20
23	Aug	2006	PeardBay	IcyCape	70.7970	-159.0203	phalarope	50	40
23	Aug	2006	PeardBay	IcyCape	70.7923	-158.9820	dunl	10	50
23	Aug	2006	PeardBay	IcyCape	70.7902	-158.9663	phalarope	8	50
23	Aug	2006	PeardBay	IcyCape	70.7693	-158.9531	phalarope	8	100
23	Aug	2006	PeardBay	IcyCape	70.7692	-158.9381	phalarope	12	30
23	Aug	2006	PeardBay	IcyCape	70.7592	-159.1961	phalarope	3	30
23	Aug	2006	PeardBay	IcyCape	70.7953	-159.3458	phalarope	12	30
23	Aug	2006	PeardBay	IcyCape	70.8430	-159.3839	phalarope	25	30
23	Aug	2006	PeardBay	IcyCape	70.8401	-159.4039	phalarope	50	10
23	Aug	2006	PeardBay	IcyCape	70.8359	-159.4300	phalarope	50	20
23	Aug	2006	PeardBay	IcyCape	70.8334	-159.4460	phalarope	50	50
23	Aug	2006	PeardBay	IcyCape	70.8283	-159.4774	phalarope	20	30
23	Aug	2006	PeardBay	IcyCape	70.8233	-159.5089	phalarope	50	50
23	Aug	2006	PeardBay	IcyCape	70.8186	-159.5386	phalarope	50	50
23	Aug	2006	PeardBay	IcyCape	70.8125	-159.5689	phalarope	50	40
23	Aug	2006	PeardBay	IcyCape	70.8054	-159.6072	phalarope	15	50
23	Aug	2006	PeardBay	IcyCape	70.8039	-159.6149	phalarope	50	40
23	Aug	2006	PeardBay	IcyCape	70.7972	-159.6439	phalarope	50	40
23	Aug	2006	PeardBay	IcyCape	70.7920	-159.6557	phalarope	10	30
23	Aug	2006	PeardBay	IcyCape	70.7644	-159.7147	phalarope	12	70
23	Aug	2006	PeardBay	IcyCape	70.7563	-159.7319	phalarope	20	60
23	Aug	2006	PeardBay	IcyCape	70.7333	-159.7960	phalarope	10	50
23	Aug	2006	PeardBay	IcyCape	70.7298	-159.8055	phalarope	10	30
23	Aug	2006	PeardBay	IcyCape	70.7201	-159.8323	phalarope	10	30
23	Aug	2006	PeardBay	IcyCape	70.7189	-159.8358	phalarope	50	30
23	Aug	2006	PeardBay	IcyCape	70.7141	-159.8503	phalarope	50	30
23	Aug	2006	PeardBay	IcyCape	70.7087	-159.8682	phalarope	100	50

2006 fixed-wing survey 4

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
23	Aug	2006	PeardBay	IcyCape	70.7016	-159.8905	phalarope	200	30
23	Aug	2006	PeardBay	IcyCape	70.6966	-159.9042	phalarope	50	50
23	Aug	2006	PeardBay	IcyCape	70.6762	-159.9552	phalarope	15	40
23	Aug	2006	PeardBay	IcyCape	70.6567	-159.9997	phalarope	20	20
23	Aug	2006	PeardBay	IcyCape	70.6317	-160.0559	phalarope	20	50
23	Aug	2006	PeardBay	IcyCape	70.6226	-160.0832	phalarope	10	50
23	Aug	2006	PeardBay	IcyCape	70.5531	-160.2333	phalarope	2	20
23	Aug	2006	PeardBay	IcyCape	70.5176	-160.3250	phalarope	10	70
23	Aug	2006	PeardBay	IcyCape	70.5094	-160.3505	phalarope	20	100
23	Aug	2006	PeardBay	IcyCape	70.4962	-160.3865	phalarope	20	100
23	Aug	2006	PeardBay	IcyCape	70.4831	-160.4317	phalarope	15	50
23	Aug	2006	PeardBay	IcyCape	70.4740	-160.4593	phalarope	10	10
23	Aug	2006	PeardBay	IcyCape	70.4690	-160.4706	phalarope	5	40
23	Aug	2006	PeardBay	IcyCape	70.4542	-160.5116	phalarope	10	80
23	Aug	2006	PeardBay	IcyCape	70.4239	-160.6154	phalarope	25	80
23	Aug	2006	PeardBay	IcyCape	70.4043	-160.6945	phalarope	8	70
23	Aug	2006	PeardBay	IcyCape	70.3953	-160.7304	phalarope	5	60
23	Aug	2006	PeardBay	IcyCape	70.3839	-160.7718	phalarope	4	60
23	Aug	2006	PeardBay	IcyCape	70.3729	-160.8191	phalarope	10	50
23	Aug	2006	PeardBay	IcyCape	70.3324	-161.0328	phalarope	5	20
23	Aug	2006	PeardBay	IcyCape	70.3099	-161.1917	phalarope	3	80
23	Aug	2006	PeardBay	IcyCape	70.2990	-161.5536	phalarope	15	20
23	Aug	2006	PeardBay	IcyCape	70.3137	-161.7222	phalarope	10	30
23	Aug	2006	IcyCape	endKasegaluk	70.2879	-162.0111	radio	5095(55)	
23	Aug	2006	IcyCape	endKasegaluk	70.1405	-162.4367	phalarope	11	70
23	Aug	2006	IcyCape	endKasegaluk	70.1258	-162.4658	phalarope	30	50
23	Aug	2006	IcyCape	endKasegaluk	70.0206	-162.6212	dunl	2	50
23	Aug	2006	IcyCape	endKasegaluk	70.0011	-162.6504	phalarope	1	20
23	Aug	2006	IcyCape	endKasegaluk	69.9764	-162.6649	phalarope	2	50
23	Aug	2006	IcyCape	endKasegaluk	69.9833	-162.6489	dunl	200	50
23	Aug	2006	IcyCape	endKasegaluk	69.9856	-162.6459	dunl	100	50
23	Aug	2006	IcyCape	endKasegaluk	69.9932	-162.6365	dunl	50	50
23	Aug	2006	IcyCape	endKasegaluk	69.9951	-162.6398	dunl	50	50
23	Aug	2006	IcyCape	endKasegaluk	69.9524	-162.7380	phalarope	30	50
23	Aug	2006	IcyCape	endKasegaluk	69.9385	-162.7674	dunl	10	70
23	Aug	2006	IcyCape	endKasegaluk	69.9044	-162.8059	dunl	10	50
23	Aug	2006	IcyCape	endKasegaluk	69.9028	-162.8022	dunl	50	40
23	Aug	2006	IcyCape	endKasegaluk	69.8916	-162.8517	phalarope	2	30
23	Aug	2006	IcyCape	endKasegaluk	69.8728	-162.8869	phalarope	15	30
23	Aug	2006	IcyCape	endKasegaluk	69.8710	-162.8906	dunl	7	50
23	Aug	2006	IcyCape	endKasegaluk	69.8512	-162.9349	phalarope	3	60
23	Aug	2006	IcyCape	endKasegaluk	69.8340	-162.9692	phalarope	15	50
23	Aug	2006	IcyCape	endKasegaluk	69.7928	-163.0288	dunl	30	50
23	Aug	2006	IcyCape	endKasegaluk	69.7496	-163.0593	dunl	25	60
23	Aug	2006	IcyCape	endKasegaluk	69.7459	-163.0622	dunl	5	60

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
23	Aug	2006	IcyCape	endKasegaluk	69.6019	-163.1475	phalarope	2	10
23	Aug	2006	IcyCape	endKasegaluk	69.5420	-163.1429	phalarope	15	30
23	Aug	2006	IcyCape	endKasegaluk	69.5239	-163.1428	phalarope	10	50
23	Aug	2006	IcyCape	endKasegaluk	69.5044	-163.1396	dunl	20	60
23	Aug	2006	IcyCape	endKasegaluk	69.5021	-163.1393	dunl	20	60
23	Aug	2006	IcyCape	endKasegaluk	69.4803	-163.1453	phalarope	4	50
23	Aug	2006	IcyCape	endKasegaluk	69.4737	-163.1445	dunl	75	60
23	Aug	2006	IcyCape	endKasegaluk	69.4737	-163.1445	phalarope	30	60
23	Aug	2006	IcyCape	endKasegaluk	69.4690	-163.1442	phalarope	50	70
23	Aug	2006	IcyCape	endKasegaluk	69.4631	-163.1420	phalarope	80	40
23	Aug	2006	IcyCape	endKasegaluk	69.4464	-163.1391	dunl	25	50
23	Aug	2006	IcyCape	endKasegaluk	69.4427	-163.1383	phalarope	10	60
23	Aug	2006	IcyCape	endKasegaluk	69.4317	-163.1412	dunl	25	60
23	Aug	2006	IcyCape	endKasegaluk	69.3506	-163.1810	phalarope	30	20
23	Aug	2006	IcyCape	endKasegaluk	69.3448	-163.1893	dunl	25	50
23	Aug	2006	IcyCape	endKasegaluk	69.3367	-163.1971	phalarope	25	50
23	Aug	2006	IcyCape	endKasegaluk	69.3367	-163.1971	dunl	25	50
23	Aug	2006	IcyCape	endKasegaluk	69.3078	-163.2189	dunl	300	50
23	Aug	2006	IcyCape	endKasegaluk	69.2920	-163.2505	dunl	6	50
23	Aug	2006	IcyCape	endKasegaluk	69.2761	-163.2617	dunl	100	50
23	Aug	2006	Barrow	AdmiraltyBay	71.3064	-156.7552	phalarope	20	30
23	Aug	2006	Barrow	AdmiraltyBay	71.3460	-156.6120	phalarope	5	20
23	Aug	2006	Barrow	AdmiraltyBay	71.3522	-156.5683	phalarope	20	20
23	Aug	2006	Barrow	AdmiraltyBay	71.3629	-156.5110	phalarope	100	50
23	Aug	2006	Barrow	AdmiraltyBay	71.3671	-156.5006	phalarope	4	40
23	Aug	2006	Barrow	AdmiraltyBay	71.3844	-156.4824	phalarope	5	60
23	Aug	2006	Barrow	AdmiraltyBay	71.3818	-156.4839	phalarope	20	40
23	Aug	2006	Barrow	AdmiraltyBay	71.3550	-156.5508	phalarope	5	50
23	Aug	2006	Barrow	AdmiraltyBay	71.1801	-155.6867	lbdo	50	100
23	Aug	2006	Barrow	AdmiraltyBay	71.1562	-155.5801	peep	20	0
23	Aug	2006	Barrow	AdmiraltyBay	71.1095	-155.5298	phalarope	30	30
23	Aug	2006	Barrow	AdmiraltyBay	70.9591	-156.0114	phalarope	10	50
23	Aug	2006	Barrow	AdmiraltyBay	70.9471	-155.9971	dunl	25	30
23	Aug	2006	Barrow	AdmiraltyBay	70.7569	-155.9205	phalarope	1	40
23	Aug	2006	Barrow	AdmiraltyBay	70.7569	-155.8980	plover	1	30
23	Aug	2006	Barrow	AdmiraltyBay	70.8540	-155.5021	phalarope	2	50
23	Aug	2006	Barrow	AdmiraltyBay	70.8598	-155.4860	phalarope	3	60
23	Aug	2006	Barrow	AdmiraltyBay	70.9884	-155.3751	dunl	2	20
23	Aug	2006	Barrow	AdmiraltyBay	70.9947	-155.2327	phalarope	10	50
23	Aug	2006	Barrow	AdmiraltyBay	71.0187	-155.1641	phalarope	1	30
23	Aug	2006	Barrow	AdmiraltyBay	71.0255	-155.1735	dunl	1	30
23	Aug	2006	Barrow	AdmiraltyBay	71.0406	-155.2088	phalarope	1	50
23	Aug	2006	Barrow	AdmiraltyBay	71.1082	-155.1388	phalarope	1	50
23	Aug	2006	Barrow	AdmiraltyBay	71.0972	-155.1472	dunl	15	20
23	Aug	2006	Barrow	AdmiraltyBay	71.0566	-155.0821	phalarope	50	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
23	Aug	2006	Barrow	AdmiraltyBay	71.0320	-155.0490	phalarope	2	30
23	Aug	2006	Barrow	AdmiraltyBay	71.0336	-155.0463	dunl	20	0
23	Aug	2006	Barrow	AdmiraltyBay	71.0355	-155.0446	dunl	10	0
23	Aug	2006	Barrow	AdmiraltyBay	71.0370	-155.0445	dunl	15	0
23	Aug	2006	Barrow	AdmiraltyBay	71.0465	-155.0493	phalarope	20	50
23	Aug	2006	Barrow	AdmiraltyBay	71.0529	-155.0507	phalarope	3	50
23	Aug	2006	Barrow	AdmiraltyBay	71.0546	-155.0516	phalarope	1	30
23	Aug	2006	Barrow	AdmiraltyBay	71.0970	-155.0669	phalarope	3	100
23	Aug	2006	Barrow	AdmiraltyBay	71.1037	-155.0680	phalarope	2	30
23	Aug	2006	Barrow	AdmiraltyBay	71.1139	-155.0767	peep	3	70
23	Aug	2006	Barrow	AdmiraltyBay	71.1358	-155.0802	phalarope	15	0
23	Aug	2006	Barrow	AdmiraltyBay	71.1248	-155.0322	peep	100	70
23	Aug	2006	Barrow	AdmiraltyBay	0.0000	0.0000	peep	100	50
23	Aug	2006	Barrow	AdmiraltyBay	0.0000	0.0000	phalarope	30	30
23	Aug	2006	Barrow	AdmiraltyBay	0.0000	0.0000	peep	7	50
23	Aug	2006	Barrow	CapeSimpson	71.0228	-155.0483	phalarope	50	50
23	Aug	2006	Barrow	CapeSimpson	71.0045	-155.0444	dunl	15	60
23	Aug	2006	Barrow	CapeSimpson	71.0201	-154.9991	phalarope	15	30
23	Aug	2006	Barrow	CapeSimpson	71.0327	-155.0166	dunl	8	30
23	Aug	2006	Barrow	CapeSimpson	71.0349	-155.0164	dunl	20	70
23	Aug	2006	Barrow	CapeSimpson	71.0420	-155.0140	dunl	50	50
23	Aug	2006	Barrow	CapeSimpson	71.0439	-154.9926	phalarope	10	30
23	Aug	2006	Barrow	CapeSimpson	71.0672	-154.9845	dunl	4	70
23	Aug	2006	Barrow	CapeSimpson	71.0481	-154.9281	dunl	30	30
23	Aug	2006	Barrow	CapeSimpson	71.0787	-154.9398	dunl	50	50
23	Aug	2006	Barrow	CapeSimpson	71.0853	-154.9472	dunl	30	50
23	Aug	2006	Barrow	CapeSimpson	71.1110	-154.9159	dunl	100	60
23	Aug	2006	Barrow	CapeSimpson	71.0913	-154.9084	phalarope	10	50
23	Aug	2006	Barrow	CapeSimpson	71.0862	-154.8862	dunl	30	100
23	Aug	2006	Barrow	CapeSimpson	71.0751	-154.8381	phalarope	15	0
23	Aug	2006	Barrow	CapeSimpson	71.0590	-154.8637	dunl	20	50
23	Aug	2006	Barrow	CapeSimpson	71.0607	-154.8604	dunl	20	10
23	Aug	2006	Barrow	CapeSimpson	71.0681	-154.8463	phalarope	100	10
23	Aug	2006	Barrow	CapeSimpson	71.0729	-154.8415	phalarope	100	50
23	Aug	2006	Barrow	CapeSimpson	71.0722	-154.7654	dunl	2	30
24	Aug	2006	SagDelta	FishCreek?	70.3348	-148.0923	dunl	100	30
24	Aug	2006	SagDelta	FishCreek?	70.3335	-148.1028	phalarope	4	0
24	Aug	2006	SagDelta	FishCreek?	70.4533	-150.5489	dunl	11	20
24	Aug	2006	SagDelta	FishCreek?	70.4594	-150.5443	dunl	25	20
24	Aug	2006	SagDelta	FishCreek?	70.4926	-150.5124	dunl	100	0
24	Aug	2006	SagDelta	FishCreek?	70.4940	-150.5098	dunl	50	0
24	Aug	2006	SagDelta	FishCreek?	70.4889	-150.5834	dunl	100	30
24	Aug	2006	SagDelta	FishCreek?	70.4951	-150.7368	dunl	50	0
24	Aug	2006	SagDelta	FishCreek?	70.4345	-151.0784	dunl	30	40
24	Aug	2006	SagDelta	FishCreek?	70.4144	-151.0795	dunl	2	20

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
24	Aug	2006	SagDelta	FishCreek?	70.4373	-151.1498	dunl	100	50
24	Aug	2006	SagDelta	FishCreek?	70.4164	-151.1959	dunl	25	20
24	Aug	2006	SagDelta	FishCreek?	70.3741	-151.2611	phalarope	7	30
27	Aug	2006	PogikBay	PtLonely	70.8322	-152.7196	plover	1	20
27	Aug	2006	PogikBay	PtLonely	70.8354	-152.7224	phalarope	2	50
27	Aug	2006	PogikBay	PtLonely	70.8624	-152.7551	dunl	25	30
27	Aug	2006	PogikBay	PtLonely	70.8790	-152.7712	dunl	25	20
27	Aug	2006	PogikBay	PtLonely	70.8526	-152.8078	plover	1	30
27	Aug	2006	PogikBay	PtLonely	70.8314	-152.8712	dunl	10	50
27	Aug	2006	PogikBay	PtLonely	70.8555	-152.9146	phalarope	7	30
27	Aug	2006	PogikBay	PtLonely	70.8539	-152.9272	dunl	50	30
27	Aug	2006	PogikBay	PtLonely	70.8655	-152.8955	phalarope	10	30
27	Aug	2006	PogikBay	PtLonely	70.8673	-152.9087	plover	1	50
27	Aug	2006	PogikBay	PtLonely	70.8643	-152.9255	dunl	20	60
27	Aug	2006	PogikBay	PtLonely	70.8685	-152.9159	dunl	20	50
27	Aug	2006	PogikBay	PtLonely	70.8823	-152.9582	dunl	25	50
27	Aug	2006	PogikBay	PtLonely	70.8944	-152.9998	dunl	25	30
27	Aug	2006	PogikBay	PtLonely	70.8959	-153.0845	dunl	50	70
27	Aug	2006	PogikBay	PtLonely	70.8983	-153.0909	dunl	50	70
27	Aug	2006	PogikBay	PtLonely	70.8984	-153.1130	dunl	80	50
27	Aug	2006	PogikBay	PtLonely	70.9033	-153.1220	phalarope	3	0
27	Aug	2006	PogikBay	PtLonely	70.9172	-153.1648	phalarope	15	30
27	Aug	2006	PogikBay	PtLonely	70.9132	-153.1842	dunl	10	20
27	Aug	2006	PogikBay	PtLonely	70.9178	-153.1803	dunl	50	0
27	Aug	2006	PogikBay	PtLonely	70.9205	-153.1837	phalarope	2	20
27	Aug	2006	PogikBay	PtLonely	70.9215	-153.2017	phalarope	50	20
27	Aug	2006	PogikBay	PtLonely	70.9210	-153.2355	phalarope	200	50
27	Aug	2006	PogikBay	PtLonely	70.9193	-153.2581	phalarope	100	50
27	Aug	2006	PogikBay	PtLonely	70.9171	-153.2741	phalarope	50	30
27	Aug	2006	PtLonely	CapeSimpson	70.8982	-153.3555	phalarope	4	30
27	Aug	2006	PtLonely	CapeSimpson	70.8938	-153.3842	phalarope	3	50
27	Aug	2006	PtLonely	CapeSimpson	70.8851	-153.4645	phalarope	20	30
27	Aug	2006	PtLonely	CapeSimpson	70.8840	-153.4883	phalarope	15	60
27	Aug	2006	PtLonely	CapeSimpson	70.8855	-153.6294	phalarope	3	50
27	Aug	2006	PtLonely	CapeSimpson	70.8834	-153.6468	phalarope	5	50
27	Aug	2006	PtLonely	CapeSimpson	70.8709	-153.6430	dunl	3	20
27	Aug	2006	PtLonely	CapeSimpson	70.8719	-153.6486	dunl	15	20
27	Aug	2006	PtLonely	CapeSimpson	70.8744	-153.9447	phalarope	10	20
27	Aug	2006	PtLonely	CapeSimpson	70.8667	-153.9368	phalarope	10	100
27	Aug	2006	PtLonely	CapeSimpson	70.8642	-153.9388	phalarope	10	30
27	Aug	2006	PtLonely	CapeSimpson	70.8328	-153.9794	dunl	35	50
27	Aug	2006	PtLonely	CapeSimpson	70.8296	-153.9828	phalarope	50	50
27	Aug	2006	PtLonely	CapeSimpson	70.8168	-154.0045	peep	10	50
27	Aug	2006	PtLonely	CapeSimpson	70.8018	-154.0446	dunl	15	50
27	Aug	2006	PtLonely	CapeSimpson	70.7973	-154.0549	phalarope	20	100

2006 fixed-wing survey 4

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
27	Aug	2006	PtLonely	CapeSimpson	70.7862	-154.0876	dunl	12	20
27	Aug	2006	PtLonely	CapeSimpson	70.7810	-154.1086	dunl	2	20
27	Aug	2006	PtLonely	CapeSimpson	70.7858	-154.2374	dunl	100	50
27	Aug	2006	PtLonely	CapeSimpson	70.7855	-154.2580	dunl	50	50
27	Aug	2006	PtLonely	CapeSimpson	70.7888	-154.2272	dunl	3	0
27	Aug	2006	PtLonely	CapeSimpson	70.7941	-154.2284	dunl	3	0
27	Aug	2006	PtLonely	CapeSimpson	70.7989	-154.2403	plover	1	40
27	Aug	2006	PtLonely	CapeSimpson	70.8103	-154.3141	dunl	15	100
27	Aug	2006	PtLonely	CapeSimpson	70.8193	-154.2980	dunl	5	50
27	Aug	2006	PtLonely	CapeSimpson	70.8000	-154.3877	plover	1	50
27	Aug	2006	PtLonely	CapeSimpson	70.8014	-154.3856	phalarope	3	50
27	Aug	2006	PtLonely	CapeSimpson	70.8158	-154.3528	dunl	25	20
27	Aug	2006	PtLonely	CapeSimpson	70.8303	-154.3400	dunl	100	10
27	Aug	2006	PtLonely	CapeSimpson	70.8287	-154.3531	dunl	25	100
27	Aug	2006	PtLonely	CapeSimpson	70.8162	-154.3769	dunl	25	80
27	Aug	2006	PtLonely	CapeSimpson	70.8269	-154.3773	dunl	75	60
27	Aug	2006	PtLonely	CapeSimpson	70.8251	-154.4289	dunl	8	40
27	Aug	2006	PtLonely	CapeSimpson	70.8156	-154.4581	dunl	10	60
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8131	-154.5132	dunl	10	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8135	-154.5601	phalarope	3	20
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8188	-154.5578	dunl	7	20
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8215	-154.5648	phalarope	10	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8352	-154.5846	dunl	20	20
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8557	-154.6052	phalarope	3	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8494	-154.6270	dunl	10	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8572	-154.6300	phalarope	15	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8590	-154.6263	phalarope	2	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8619	-154.6205	phalarope	1	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8643	-154.6159	phalarope	15	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8662	-154.6123	phalarope	3	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8729	-154.5999	dunl	200	70
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8750	-154.6049	dunl	25	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8634	-154.6389	dunl	25	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8750	-154.6394	phalarope	5	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8797	-154.6297	plover	2	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8812	-154.6651	phalarope	30	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8857	-154.6551	dunl	10	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8952	-154.7117	dunl	7	80
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8923	-154.7554	dunl	4	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8912	-154.7028	dunl	2	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8948	-154.6904	phalarope	5	10
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.8962	-154.6889	phalarope	4	20
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.9090	-154.6168	dunl	15	50
27	Aug	2006	IkpikpukDelta	CapeSimpson	70.9391	-154.6389	dunl	7	30
27	Aug	2006	IkpikpukDelta	CapeSimpson	71.0385	-154.6752	phalarope	50	30

2006 fixed-wing survey 4

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
27	Aug	2006	IkpikpukDelta	CapeSimpson	71.0450	-154.6929	phalarope	50	60
27	Aug	2006	IkpikpukDelta	CapeSimpson	71.0467	-154.6977	phalarope	50	60
27	Aug	2006	IkpikpukDelta	CapeSimpson	71.0478	-154.7009	phalarope	100	60
27	Aug	2006	IkpikpukDelta	CapeSimpson	71.0497	-154.7062	phalarope	100	60
							total	**8053**	**283465.6**

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	August	2007	Canada border	Barter	69.6347	-141.2387	peep	20	30
7	August	2007	Canada border	Barter	69.7542	-141.6169	phalarope	1	30
7	August	2007	Canada border	Barter	69.7544	-141.6294	phalarope	17	30
7	August	2007	Canada border	Barter	69.7550	-141.6462	phalarope	4	30
7	August	2007	Canada border	Barter	69.7686	-141.6627	peep	20	80
7	August	2007	Canada border	Barter	69.7544	-141.6711	phalarope	2	30
7	August	2007	Canada border	Barter	69.7741	-141.6716	peep	20	50
7	August	2007	Canada border	Barter	69.7640	-141.6816	phalarope	10	50
7	August	2007	Canada border	Barter	69.7506	-141.6902	phalarope	2	80
7	August	2007	Canada border	Barter	69.7670	-141.6909	peep	10	0
7	August	2007	Canada border	Barter	69.7719	-141.6995	peep	1	40
7	August	2007	Canada border	Barter	69.7514	-141.7000	peep	1	100
7	August	2007	Canada border	Barter	69.7395	-141.7275	phalarope	1	60
7	August	2007	Canada border	Barter	69.7624	-141.7271	phalarope	1	0
7	August	2007	Canada border	Barter	69.7769	-141.7274	phalarope	2	40
7	August	2007	Canada border	Barter	69.7813	-141.7478	phalarope	15	0
7	August	2007	Canada border	Barter	69.7348	-141.7576	phalarope	6	0
7	August	2007	Canada border	Barter	69.7699	-141.7658	phalarope	10	0
7	August	2007	Canada border	Barter	69.7720	-141.7659	phalarope	15	0
7	August	2007	Canada border	Barter	69.7742	-141.7768	phalarope	15	0
7	August	2007	Canada border	Barter	69.7364	-141.7775	phalarope	7	20
7	August	2007	Canada border	Barter	69.7536	-141.8050	plover	7	30
7	August	2007	Canada border	Barter	69.7787	-141.8133	phalarope	1	20
7	August	2007	Canada border	Barter	69.7937	-141.8690	phalarope	12	100
7	August	2007	Canada border	Barter	69.8010	-141.8760	phalarope	13	20

2007 fixed-wing survey in Arctic National Wildlife Refuge

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	August	2007	Canada border	Barter	69.7988	-141.8924	phalarope	3	10
7	August	2007	Canada border	Barter	69.8044	-141.8928	phalarope	3	80
7	August	2007	Canada border	Barter	69.7886	-141.9697	pesa	8	50
7	August	2007	Canada border	Barter	69.8080	-142.0270	stilt	3	100
7	August	2007	Canada border	Barter	69.8098	-142.0316	plover	5	20
7	August	2007	Canada border	Barter	69.8136	-142.0176	plover	2	20
7	August	2007	Canada border	Barter	69.8143	-142.0250	plover	2	50
7	August	2007	Canada border	Barter	69.8235	-142.0135	phalarope	9	20
7	August	2007	Canada border	Barter	69.8279	-142.0415	plover	30	20
7	August	2007	Canada border	Barter	69.8283	-142.0214	stilt	1	20
7	August	2007	Canada border	Barter	69.8223	-142.0613	peep	4	20
7	August	2007	Canada border	Barter	69.8341	-142.0465	phalarope	8	60
7	August	2007	Canada border	Barter	69.8341	-142.0606	peep	25	50
7	August	2007	Canada border	Barter	69.8365	-142.1038	peep	50	100
7	August	2007	Canada border	Barter	69.8366	-142.1239	peep	20	50
7	August	2007	Canada border	Barter	69.8480	-142.1434	phalarope	4	50
7	August	2007	Canada border	Barter	69.8464	-142.1576	phalarope	3	20
7	August	2007	Canada border	Barter	69.8490	-142.2553	phalarope	2	80
7	August	2007	Canada border	Barter	69.9589	-142.5116	pesa	20	100
7	August	2007	Canada border	Barter	70.0035	-142.6012	pesa	15	100
7	August	2007	Canada border	Barter	70.0613	-142.8728	phalarope	3	40
7	August	2007	Jago delta	Barter	70.1178	-143.2171	phalarope	4	100
7	August	2007	Jago delta	Barter	70.1158	-143.2158	phalarope	15	0
7	August	2007	Jago delta	Barter	70.1220	-143.2234	peep	40	50
7	August	2007	Jago delta	Barter	70.1097	-143.2620	phalarope	4	20

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
7	August	2007	Jago delta	Barter	70.1273	-143.3094	phalarope	20	80
7	August	2007	Jago delta	Barter	70.1015	-143.3301	plover	1	50
7	August	2007	Jago delta	Barter	70.0958	-143.3384	peep	1	100
7	August	2007	Jago delta	Barter	70.1172	-143.3458	plover	5	0
7	August	2007	Jago delta	Barter	70.1172	-143.3458	peep	10	0
7	August	2007	Jago delta	Barter	70.1082	-143.3523	plover	10	0
7	August	2007	Jago delta	Barter	70.0946	-143.3834	phalarope	5	0
7	August	2007	Jago delta	Barter	70.0858	-143.6716	plover	9	0
7	August	2007	Jago delta	Barter	70.0813	-143.6941	pesa	10	0
7	August	2007	Jago delta	Barter	70.0829	-143.7130	peep	30	60
7	August	2007	Jago delta	Barter	70.0836	-143.7034	peep	8	0
7	August	2007	Jago delta	Barter	70.0910	-143.6850	phalarope	9	0
7	August	2007	Jago delta	Barter	70.1039	-143.7071	peep	20	40
7	August	2007	Jago delta	Barter	70.1196	-143.7308	plover	1	50
7	August	2007	Jago delta	Barter	70.1212	-143.7324	plover	3	50
7	August	2007	Jago delta	Barter	70.1226	-143.7336	phalarope	3	50
7	August	2007	Jago delta	Barter	70.1337	-143.5501	phalarope	2	100
7	August	2007	Jago delta	Barter	70.1240	-143.5283	plover	1	70
8	August	2007	Okpilak	Okpilak	70.1360	-143.5121	phalarope	5	50
8	August	2007	Okpilak	Okpilak	70.1372	-143.5222	phalarope	3	30
8	August	2007	Okpilak	Okpilak	70.1452	-143.5628	phalarope	10	30
8	August	2007	Okpilak	Okpilak	70.1428	-143.5769	phalarope	6	30
8	August	2007	Okpilak	Okpilak	70.1392	-143.5814	phalarope	100	40
8	August	2007	Okpilak	Okpilak	70.1174	-143.7710	phalarope	3	60
8	August	2007	Okpilak	Okpilak	70.1156	-143.7732	phalarope	50	50

2007 fixed-wing survey in Arctic National Wildlife Refuge

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
8	August	2007	Okpilak	Okpilak	70.1135	-143.7755	phalarope	200	50
8	August	2007	Okpilak	Okpilak	70.1246	-143.7726	plover	6	70
8	August	2007	Okpilak	Okpilak	70.1083	-143.7916	phalarope	50	80
8	August	2007	Okpilak	Okpilak	70.1076	-143.8160	phalarope	25	70
8	August	2007	Okpilak	Okpilak	70.1033	-143.7028	phalarope	10	40
8	August	2007	Okpilak	Okpilak	70.0889	-143.7501	stilt	8	10
8	August	2007	Okpilak	Okpilak	70.0736	-143.8325	phalarope	4	60
8	August	2007	Okpilak	Okpilak	70.0733	-143.8473	phalarope	20	100
8	August	2007	Okpilak	Okpilak	70.0781	-143.9709	peep	4	10
8	August	2007	Okpilak	Okpilak	70.0750	-143.9524	plover	2	80
8	August	2007	Okpilak	Okpilak	70.0819	-143.9692	stilt	20	60
8	August	2007	Okpilak	Okpilak	70.0819	-143.9752	phalarope	10	100
8	August	2007	Okpilak	Okpilak	70.0910	-143.9925	peep	30	100
8	August	2007	Okpilak	Okpilak	70.0873	-144.0275	peep	25	50
8	August	2007	Okpilak	Okpilak	70.0392	-144.1122	peep	20	80
8	August	2007	Okpilak	Okpilak	70.0861	-144.0474	peep	9	80
8	August	2007	Okpilak	Okpilak	70.0790	-144.0677	peep	5	70
8	August	2007	Okpilak	Okpilak	70.0483	-144.1371	peep	10	50
8	August	2007	Okpilak	Okpilak	70.0641	-144.1206	peep	4	100
8	August	2007	Okpilak	Okpilak	70.0718	-144.1457	plover	5	0
8	August	2007	Okpilak	Okpilak	70.0360	-144.1501	peep	2	100
8	August	2007	Okpilak	Canning	70.0385	-144.1896	phalarope	2	30
8	August	2007	Okpilak	Canning	70.0358	-144.2128	phalarope	3	90
8	August	2007	Okpilak	Canning	70.0337	-144.2717	peep	50	30
8	August	2007	Okpilak	Canning	70.0264	-144.4331	peep	4	30
8	August	2007	Okpilak	Canning	70.0238	-144.4454	phalarope	3	30
8	August	2007	Okpilak	Canning	70.0280	-144.4560	peep	20	100
8	August	2007	Okpilak	Canning	70.0314	-144.4591	peep	2	60
8	August	2007	Okpilak	Canning	70.0212	-144.4757	peep	4	40
8	August	2007	Okpilak	Canning	70.0189	-144.4885	peep	8	50
8	August	2007	Okpilak	Canning	70.0036	-144.5185	phalarope	8	70
8	August	2007	Okpilak	Canning	70.0021	-144.5213	phalarope	5	60
8	August	2007	Okpilak	Canning	69.9773	-144.5807	phalarope	3	10
8	August	2007	Okpilak	Canning	69.9745	-144.5906	phalarope	6	20
8	August	2007	Okpilak	Canning	69.9697	-144.6117	peep	2	50
8	August	2007	Okpilak	Canning	69.9645	-144.6610	peep	1	80

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
8	August	2007	Okpilak	Canning	69.9654	-144.6911	peep	2	80
8	August	2007	Okpilak	Canning	69.9675	-144.7184	dunl	25	10
8	August	2007	Okpilak	Canning	69.9761	-144.7795	phalarope	1	80
8	August	2007	Okpilak	Canning	69.9804	-144.8129	phalarope	10	0
8	August	2007	Okpilak	Canning	69.9815	-144.8237	phalarope	4	20
8	August	2007	Okpilak	Canning	69.9819	-144.8287	phalarope	5	60
8	August	2007	Okpilak	Canning	69.9839	-144.8553	phalarope	300	20
8	August	2007	Okpilak	Canning	69.9785	-144.8330	phalarope	3	60
8	August	2007	Okpilak	Canning	69.9726	-144.8575	phalarope	200	40
8	August	2007	Okpilak	Canning	69.9726	-144.8641	phalarope	6	50
8	August	2007	Okpilak	Canning	69.9659	-144.9723	phalarope	4	20
8	August	2007	Okpilak	Canning	69.9743	-144.9955	phalarope	4	100
8	August	2007	Okpilak	Canning	69.9762	-145.0012	phalarope	2	30
8	August	2007	Okpilak	Canning	69.9784	-145.0130	peep	17	40
8	August	2007	Okpilak	Canning	69.9809	-145.0565	phalarope	5	80
8	August	2007	Okpilak	Canning	69.9781	-145.0246	phalarope	12	100
8	August	2007	Okpilak	Canning	69.9810	-145.0700	phalarope	2	30
8	August	2007	Okpilak	Canning	69.9879	-145.1453	phalarope	7	60
8	August	2007	Okpilak	Canning	69.9901	-145.1791	phalarope	10	50
8	August	2007	Okpilak	Canning	69.9966	-145.2027	phalarope	7	0
8	August	2007	Okpilak	Canning	70.0087	-145.2313	phalarope	8	30
8	August	2007	Okpilak	Canning	70.0246	-145.2137	peep	150	50
8	August	2007	Okpilak	Canning	70.0235	-145.2194	phalarope	50	50
8	August	2007	Okpilak	Canning	70.0225	-145.1935	phalarope	200	50
8	August	2007	Okpilak	Canning	70.0246	-145.1796	phalarope	6	50
8	August	2007	Okpilak	Canning	70.0121	-145.2519	phalarope	20	40
8	August	2007	Okpilak	Canning	70.0163	-145.2572	phalarope	12	0
8	August	2007	Okpilak	Canning	70.0129	-145.2814	phalarope	2	50
8	August	2007	Okpilak	Canning	70.0118	-145.2925	phalarope	20	50
8	August	2007	Okpilak	Canning	70.0116	-145.3031	phalarope	5	100
8	August	2007	Okpilak	Canning	70.0324	-145.4281	phalarope	2	70
8	August	2007	Okpilak	Canning	70.0478	-145.4542	phalarope	4	100
8	August	2007	Okpilak	Canning	70.0474	-145.4841	phalarope	7	50
8	August	2007	Okpilak	Canning	70.0549	-145.4682	phalarope	3	30
8	August	2007	Okpilak	Canning	70.0816	-145.5505	stilt	50	100
8	August	2007	Okpilak	Canning	70.0900	-145.5566	phalarope	30	50
8	August	2007	Okpilak	Canning	70.0896	-145.5538	phalarope	50	50
8	August	2007	Okpilak	Canning	70.0909	-145.5636	phalarope	10	50
8	August	2007	Okpilak	Canning	70.0905	-145.5607	phalarope	50	50
8	August	2007	Canning	west border	70.1166	-145.7261	phalarope	6	100
8	August	2007	Canning	west border	70.1387	-145.7973	phalarope	1	30

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Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
8	August	2007	Canning	west border	70.1567	-145.8332	stilt	1	100
8	August	2007	Canning	west border	70.1229	-145.8893	phalarope	1	40
8	August	2007	Canning	west border	70.1453	-145.8991	phalarope	6	100
8	August	2007	Canning	west border	70.1322	-145.9957	peep	8	80
8	August	2007	Canning	west border	70.1388	-145.7636	phalarope	8	50
8	August	2007	Canning	west border	70.1375	-145.7599	phalarope	17	80
8	August	2007	Canning	west border	70.1141	-145.6879	phalarope	2	50
8	August	2007	Canning	west border	70.0988	-145.6353	plover	1	100
8	August	2007	Canning	west border	70.0972	-145.6191	phalarope	15	100
8	August	2007	Canning	west border	70.0963	-145.6054	plover	1	100
8	August	2007	Canning	west border	70.0924	-145.5729	plover	1	80
8	August	2007	Canning	west border	70.0917	-145.5672	phalarope	100	100
8	August	2007	Canning	west border	70.0914	-145.5650	plover	3	80
8	August	2007	Canning	west border	70.0910	-145.5621	phalarope	20	80
8	August	2007	Canning	west border	70.0904	-145.5585	phalarope	100	80
8	August	2007	Canning	west border	70.0899	-145.5549	plover	3	80
8	August	2007	Canning	west border	70.0894	-145.5520	phalarope	20	20
8	August	2007	Canning	west border	70.0868	-145.5351	plover	1	90
8	August	2007	Canning	west border	70.0863	-145.5291	plover	1	20
8	August	2007	Canning	west border	70.0806	-145.5588	plover	3	20
8	August	2007	Canning	west border	70.0806	-145.5588	phalarope	20	20
8	August	2007	Canning	west border	70.0810	-145.5559	phalarope	2	0
8	August	2007	Canning	west border	70.0719	-145.5448	phalarope	2	100
8	August	2007	Canning	west border	70.0748	-145.5448	phalarope	12	20
8	August	2007	Canning	west border	70.0721	-145.5385	stilt	20	70

2007 fixed-wing survey in Arctic National Wildlife Refuge

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
8	August	2007	Canning	west border	70.0766	-145.5254	stilt	12	0
8	August	2007	Canning	Barter	70.0753	-145.5171	plover	2	100
8	August	2007	Canning	Barter	70.0780	-145.5191	stilt	60	100
8	August	2007	Canning	Barter	70.0819	-145.5016	plover	1	10
8	August	2007	Canning	Barter	70.0834	-145.5057	plover	1	50
8	August	2007	Canning	Barter	70.0848	-145.5123	plover	1	80
8	August	2007	Canning	Barter	70.0851	-145.5319	peep	10	30
8	August	2007	Canning	Barter	70.0822	-145.5031	plover	2	80
8	August	2007	Canning	Barter	70.0799	-145.4946	phalarope	5	90
8	August	2007	Canning	Barter	70.0786	-145.4907	plover	1	80
8	August	2007	Canning	Barter	70.0782	-145.4889	plover	1	100
8	August	2007	Canning	Barter	70.0770	-145.4837	plover	2	100
8	August	2007	Canning	Barter	70.0766	-145.4821	plover	2	90
8	August	2007	Canning	Barter	70.0752	-145.4770	plover	8	100
8	August	2007	Canning	Barter	70.0726	-145.4690	plover	1	100
8	August	2007	Canning	Barter	70.0716	-145.4662	plover	2	100
8	August	2007	Canning	Barter	70.0712	-145.4651	plover	3	0
8	August	2007	Canning	Barter	70.0708	-145.4640	plover	1	100
8	August	2007	Canning	Barter	70.0697	-145.4616	plover	5	100
8	August	2007	Canning	Barter	70.0690	-145.4603	plover	4	100
8	August	2007	Canning	Barter	70.0682	-145.4586	plover	8	80
8	August	2007	Canning	Barter	70.0677	-145.4575	plover	1	80
8	August	2007	Canning	Barter	70.0657	-145.4531	phalarope	50	80
8	August	2007	Canning	Barter	70.0609	-145.4442	plover	1	100
8	August	2007	Canning	Barter	70.0577	-145.4387	phalarope	5	100
8	August	2007	Canning	Barter	70.0562	-145.4341	phalarope	7	60
8	August	2007	Canning	Barter	70.0543	-145.4214	phalarope	40	100
8	August	2007	Canning	Barter	70.0434	-145.3609	phalarope	50	100
8	August	2007	Canning	Barter	70.0374	-145.3538	phalarope	120	40
8	August	2007	Canning	Barter	70.0385	-145.2380	phalarope	200	30
8	August	2007	Canning	Barter	70.0390	-145.2308	phalarope	140	40
8	August	2007	Canning	Barter	70.0393	-145.2158	phalarope	500	40
8	August	2007	Canning	Barter	70.0382	-145.2062	dunl	300	40
8	August	2007	Canning	Barter	69.9893	-144.9301	phalarope	30	100
8	August	2007	Canning	Barter	69.9903	-144.9240	phalarope	100	60
8	August	2007	Canning	Barter	69.9845	-144.8902	phalarope	12	30
8	August	2007	Canning	Barter	70.0220	-144.4878	peep	3	100
8	August	2007	Canning	Barter	70.0403	-144.2752	plover	1	40
8	August	2007	Canning	Barter	70.0561	-144.2550	phalarope	7	30
8	August	2007	Canning	Barter	70.0577	-144.2486	phalarope	4	30
8	August	2007	Canning	Barter	70.0597	-144.2318	phalarope	3	30

2007 fixed-wing survey in Arctic National Wildlife Refuge

Day	Month	Year	FromLoc	ToLoc	GPS_N	GPS_W	Species	Number	PerpDist
8	August	2007	Canning	Barter	70.0661	-144.1469	phalarope	2	50
8	August	2007	Canning	Barter	70.0735	-144.1468	plover	2	50
8	August	2007	Canning	Barter	70.0764	-144.1375	plover	1	40
8	August	2007	Canning	Barter	70.0991	-143.9519	phalarope	9	50
8	August	2007	Canning	Barter	70.1020	-143.9383	plover	1	50
8	August	2007	Canning	Barter	70.1187	-143.8714	phalarope	1	50

Appendix 3a. Kasegaluk 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	25-Jul-06	206	1	45	1	1	0	0	0	1	0	0	0	0
2006	1	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	3	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	4	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	5	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	6	45	1	25	25	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	7	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	8	90	1	1	0	0	1	0	0	0	0	0
2006	1	25-Jul-06	206	9	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	TOTALS					27	25	0	1	1	0	0	0	0
2006	2	28-Jul-06	209	1	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	3	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	4	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	5	45	1	13	13	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	6	45	1	360	360	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	7	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	8	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	9	45	1	9	0	0	0	9	0	0	0	0
2006	2	TOTALS					382	373	0	0	9	0	0	0	0
2006	3	31-Jul-06	212	1	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	2	270	1	39	0	39	0	0	0	0	0	0
2006	3	31-Jul-06	212	3	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	4	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	5	270	1	1	0	0	0	1	0	0	0	0
2006	3	31-Jul-06	212	6	270	1	56	56	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	7	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	8	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	9	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	TOTALS					96	56	39	0	1	0	0	0	0
2006	4	3-Aug-06	215	1	0	2	203	191	2	0	0	0	0	0	0
2006	4	3-Aug-06	215	2	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	3-Aug-06	215	3	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	3-Aug-06	215	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	3-Aug-06	215	5	45	2	1	1	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	6	45	2	438	433	0	0	5	0	0	0	0
2006	4	3-Aug-06	215	7	45	2	6	0	0	6	0	0	0	0	0
2006	4	3-Aug-06	215	8	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	3-Aug-06	215	9	45	2	1	0	1	0	0	0	0	0	0
2006	4	TOTALS					649	625	3	6	5	0	0	0	0
2006	5	6-Aug-06	218	1	225	3	3	3	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	2	225	3	3	0	3	0	0	0	0	0	0
2006	5	6-Aug-06	218	3	270	3	10	8	0	0	2	0	0	0	0
2006	5	6-Aug-06	218	4	225	3	2	0	2	0	0	0	0	0	0
2006	5	6-Aug-06	218	5	225	3	27	27	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	6	225	2	47	47	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	7	225	1	44	44	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	8	225	2	3	0	0	3	0	0	0	0	0
2006	5	6-Aug-06	218	9	225	1	4	0	4	0	0	0	0	0	0
2006	5	TOTALS					143	129	9	3	2	0	0	0	0

Appendix 3a. Kasegaluk 2006 transect data by habitat.																
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	6	9-Aug-06	221	1	180	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	9-Aug-06	221	2	203	1	4	0	4	0	0	0	0	0	0
2006	6	9-Aug-06	221	3	225	0	39	6	0	33	0	0	0	0	0
2006	6	9-Aug-06	221	4	225	0	2	0	2	0	0	0	0	0	0
2006	6	9-Aug-06	221	5	225	0	9	9	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	6	225	1	106	96	7	3	0	0	0	0	0
2006	6	9-Aug-06	221	7	180	1	25	0	0	0	25	0	0	0	0
2006	6	9-Aug-06	221	8	180	1	15	0	0	0	15	0	0	0	0
2006	6	9-Aug-06	221	9	180	1	12	3	4	0	5	0	0	0	0
2006	6	TOTALS					212	114	17	36	45	0	0	0	0
2006	7	12-Aug-06	224	1	90	4	21	1	20	0	0	0	0	0	0
2006	7	12-Aug-06	224	2	90	4	22	0	22	0	0	0	0	0	0
2006	7	12-Aug-06	224	3	90	4	85	66	0	19	0	0	0	0	0
2006	7	12-Aug-06	224	4	90	4	2	0	0	2	0	0	0	0	0
2006	7	12-Aug-06	224	5	90	4	78	54	0	24	0	0	0	0	0
2006	7	12-Aug-06	224	6	90	4	139	136	3	0	0	0	0	0	0
2006	7	12-Aug-06	224	7	90	4	4	1	0	3	0	0	0	0	0
2006	7	12-Aug-06	224	8	90	4	4	3	0	1	0	0	0	0	0
2006	7	12-Aug-06	224	9	90	4	15	0	11	4	0	0	0	0	0
2006	7	TOTALS					370	261	56	53	0	0	0	0	0
2006	8	15-Aug-06	227	1	0	3	56	56	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	2	0	3	13	0	13	0	0	0	0	0	0
2006	8	15-Aug-06	227	3	23	4	29	25	0	4	0	0	0	0	0
2006	8	15-Aug-06	227	4	45	4	12	0	0	12	0	0	0	0	0
2006	8	15-Aug-06	227	5	23	4	77	2	10	65	0	0	0	0	0
2006	8	15-Aug-06	227	6	0	3	79	66	0	0	13	0	0	0	0
2006	8	15-Aug-06	227	7	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	15-Aug-06	227	8	315	1	19	0	0	14	0	5	0	0	0
2006	8	15-Aug-06	227	9	315	0	18	0	4	14	0	0	0	0	0
2006	8	TOTALS					303	149	27	109	13	5	0	0	0
2008	9	18-Aug-06	230	1	45	3	14	14	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	2	45	3	5	4	1	0	0	0	0	0	0
2008	9	18-Aug-06	230	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	9	18-Aug-06	230	4	45	3	29	3	20	6	0	0	0	0	0
2008	9	18-Aug-06	230	5	45	3	14	7	0	7	0	0	0	0	0
2008	9	18-Aug-06	230	6	45	3	24	24	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	7	45	3	5	5	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	8	23	3	3	0	0	1	2	0	0	0	0
2008	9	18-Aug-06	230	9	23	3	5	2	3	0	0	0	0	0	0
2006	9	TOTALS					99	59	24	14	2	0	0	0	0
2006	10	21-Aug-06	233	1	45	3	7	2	5	0	0	0	0	0	0
2006	10	21-Aug-06	233	2	45	4	38	38	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	21-Aug-06	233	4	45	3	7	0	4	0	2	0	1	0	0
2006	10	21-Aug-06	233	5	45	3	13	0	0	13	0	0	0	0	0
2006	10	21-Aug-06	233	6	45	4	15	15	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	7	45	3	1	0	1	0	0	0	0	0	0
2006	10	21-Aug-06	233	8	45	3	2	0	2	0	0	0	0	0	0
2006	10	21-Aug-06	233	9	45	3	2	0	2	0	0	0	0	0	0

Appendix 3a. Kasegaluk 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	10	TOTALS					85	55	14	13	2	0	1	0	0
2006	11	24-Aug-06	236	1	90	3	3	0	0	0	3	0	0	0	0
2006	11	24-Aug-06	236	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	24-Aug-06	236	3	90	2	1	1	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	4	90	2	13	0	1	8	0	4	0	0	0
2006	11	24-Aug-06	236	5	90	2	14	0	0	9	0	5	0	0	0
2006	11	24-Aug-06	236	6	90	3	28	27	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	7	90	2	20	0	0	17	3	0	0	0	0
2006	11	24-Aug-06	236	8	90	2	1	0	0	1	0	0	0	0	0
2006	11	24-Aug-06	236	9	90	2	1	0	0	1	0	0	0	0	0
2006	11	TOTALS					81	28	1	36	6	9	0	0	0
2006	12	27-Aug-06	239	1	90	4	15	9	0	0	6	0	0	0	0
2006	12	27-Aug-06	239	2	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	27-Aug-06	239	3	90	3	11	8	0	3	0	0	0	0	0
2006	12	27-Aug-06	239	4	90	4	1	0	1	0	0	0	0	0	0
2006	12	27-Aug-06	239	5	90	4	24	21	0	3	0	0	0	0	0
2006	12	27-Aug-06	239	6	90	4	21	21	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	7	90	3	12	0	0	12	0	0	0	0	0
2006	12	27-Aug-06	239	8	90	3	17	0	0	17	0	0	0	0	0
2006	12	27-Aug-06	239	9	90	3	1	0	0	1	0	0	0	0	0
2006	12	TOTALS					102	59	1	36	6	0	0	0	0
2006	13	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	30-Aug-06	242	2	315	1	17	17	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	3	315	1	13	13	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	4	0	1	9	0	9	0	0	0	0	0	0
2006	13	30-Aug-06	242	5	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	30-Aug-06	242	6	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	30-Aug-06	242	7	0	1	2	0	0	2	0	0	0	0	0
2006	13	30-Aug-06	242	8	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	30-Aug-06	242	9	0	1	4	0	0	4	0	0	0	0	0
2006	13	TOTALS					45	30	9	6	0	0	0	0	0
2006	14	1-Sep-06	244	1	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	2	90	4	16	16	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	3	90	3	1	1	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	4	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	5	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	6	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	7	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	8	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	1-Sep-06	244	9	90	3	7	0	0	7	0	0	0	0	0
2006	14	TOTALS					24	17	0	7	0	0	0	0	0
2006		TOTAL FOR SPECIES													

Appendix 3b. Kasegaluk 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	1	25-Jul-06	206	1	45	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	25-Jul-06	206	3	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	4	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	5	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	6	45	1	25	1	9	0	0	0	0	0	15	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	7	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	8	90	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	1	25-Jul-06	206	9	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	TOTALS					27	2	9	0	0	0	0	0	16	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	1	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	28-Jul-06	209	3	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	4	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	5	45	1	13	1	2	0	0	1	0	0	9	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	6	45	1	360	42	203	0	18	8	0	0	89	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	7	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	8	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	28-Jul-06	209	9	45	1	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
2006	2	TOTALS					382	43	205	0	18	9	0	0	107	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	1	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	2	270	1	39	2	37	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	3	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	4	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	5	270	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	6	270	1	56	53	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	7	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	8	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	9	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	TOTALS					96	56	40	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	1	0	2	203	142	41	0	0	10	0	0	10	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	2	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	3	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	5	45	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	6	45	2	438	240	175	0	0	9	0	14	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	7	45	2	6	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0

Appendix 3b. Kasegaluk 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	4	3-Aug-06	215	8	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	9	45	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	TOTALS					649	384	219	0	0	22	0	14	10	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	1	225	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	2	225	3	3	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	3	270	3	10	0	2	0	0	0	0	0	8	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	4	225	3	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	5	225	3	27	10	0	0	0	0	0	0	17	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	6	225	2	47	18	4	0	0	0	0	0	25	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	7	225	1	44	5	0	0	0	0	0	0	39	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	8	225	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	9	225	1	4	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0
2006	5	TOTALS					143	39	7	0	0	0	0	0	97	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	1	180	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	2	203	1	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	3	225	0	39	0	3	0	0	0	0	0	36	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	4	225	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	5	225	0	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	6	225	1	106	0	72	0	0	0	0	0	34	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	7	180	1	25	0	5	0	0	0	0	16	4	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	8	180	1	15	0	0	0	0	0	0	10	4	0	0	0	0	1	0	0
2006	6	9-Aug-06	221	9	180	1	12	0	0	0	0	0	0	2	10	0	0	0	0	0	0	0
2006	6	TOTALS					212	1	80	0	0	0	0	29	101	0	0	0	0	1	0	0
2006	7	12-Aug-06	224	1	90	4	21	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	2	90	4	22	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	3	90	4	85	1	8	0	0	0	0	1	75	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	4	90	4	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	5	90	4	78	0	38	0	0	0	0	0	40	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	6	90	4	139	0	115	0	0	0	0	0	24	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	7	90	4	4	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	8	90	4	4	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	9	90	4	15	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0
2006	7	TOTALS					370	2	164	0	0	0	0	1	203	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	1	0	3	56	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	2	0	3	13	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	3	23	4	29	0	4	0	0	0	0	0	25	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	4	45	4	12	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0

Appendix 3b. Kasegaluk 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	8	15-Aug-06	227	5	23	4	77	0	29	0	1	2	0	0	45	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	6	0	3	79	0	43	0	0	0	0	0	36	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	7	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	8	315	1	19	0	5	0	0	0	0	0	14	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	9	315	0	18	0	2	0	0	0	0	0	16	0	0	0	0	0	0	0
2006	8	TOTALS					303	0	83	0	1	2	0	0	217	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	1	45	3	14	0	4	0	0	0	0	0	10	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	2	45	3	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	4	45	3	29	0	16	0	0	0	0	0	13	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	5	45	3	14	0	3	0	0	1	0	0	10	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	6	45	3	24	0	11	0	0	0	0	0	13	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	7	45	3	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	8	23	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
2008	9	18-Aug-06	230	9	23	3	5	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0
2006	9	TOTALS					99	0	35	0	0	1	0	0	63	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	1	45	3	7	0	5	0	0	0	0	0	2	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	2	45	4	38	0	17	0	0	0	0	0	21	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	4	45	3	7	0	1	0	1	0	0	3	0	0	0	0	0	2	0	0
2006	10	21-Aug-06	233	5	45	3	13	0	5	0	0	0	0	0	8	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	6	45	4	15	0	4	0	0	0	0	0	11	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	7	45	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	8	45	3	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	9	45	3	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	TOTALS					85	0	34	0	1	1	0	5	42	0	0	0	0	2	0	0
2006	11	24-Aug-06	236	1	90	3	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	3	90	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	4	90	2	13	0	7	0	0	0	0	2	4	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	5	90	2	14	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	6	90	3	28	0	27	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	7	90	2	20	0	19	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	8	90	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	24-Aug-06	236	9	90	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	TOTALS					81	0	66	0	0	1	0	2	12	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	1	90	4	15	0	12	0	0	0	0	0	3	0	0	0	0	0	0	0

Appendix 3b. Kasegaluk 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	12	27-Aug-06	239	2	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	3	90	3	11	0	9	0	0	0	0	0	2	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	4	90	4	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	5	90	4	24	0	10	0	0	2	0	2	10	0	0	0	0	0	0	0
2006	12	27-Aug-06	239	6	90	4	21	0	15	0	0	0	0	0	5	0	0	0	0	1	0	0
2006	12	27-Aug-06	239	7	90	3	12	0	1	0	0	1	0	0	0	0	0	0	0	0	10	0
2006	12	27-Aug-06	239	8	90	3	17	0	1	0	0	0	0	6	3	0	0	0	0	0	7	0
2006	12	27-Aug-06	239	9	90	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	12	TOTALS					102	0	48	0	0	3	0	8	25	0	0	0	0	1	17	0
2006	13	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	30-Aug-06	242	2	315	1	17	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	3	315	1	13	0	5	0	0	0	0	0	8	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	4	0	1	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	5	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	6	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	7	0	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	30-Aug-06	242	9	0	1	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	TOTALS					45	0	37	0	0	0	0	0	8	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	1	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	2	90	4	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	3	90	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	4	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	5	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	6	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	7	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	8	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	1-Sep-06	244	9	90	3	7	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	14	TOTALS					24	0	23	0	0	0	0	0	1	0	0	0	0	0	0	0
2006		TOTAL FOR SPECIES						527	1050	0	20	39	0	59	902	0	0	0	0	4	17	0

Appendix 4a. Peard 2005 transect data by habitat.															
Year	SurveyPd	Date	Jul Date	Transect	WindDir	Beaufort	Total birds	Mudflat	G beach	S marsh	Tundra	P edge	Pond	Lagoon	Ocean
2005	1	28-Jul-05	209	1	45	4	3	0	3	0	0	0	0	0	0
2005	1	28-Jul-05	209	2	45	3	1	0	0	1	0	0	0	0	0
2005	1	28-Jul-05	209	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	29-Jul-05	210	4	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	29-Jul-05	210	5	45	3	3	0	3	0	0	0	0	0	0
2005	1	29-Jul-05	210	6	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	30-Jul-05	211	7	45	2	35	33	0	0	0	2	0	0	0
2005	1	30-Jul-05	211	8	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	30-Jul-05	211	9	45	3	8	8	0	0	0	0	0	0	0
2005	1	TOTALS					50	41	6	1	0	2	0	0	0
2005	2	1-Aug-05	213	1	45	3	149	0	149	0	0	0	0	0	0
2005	2	1-Aug-05	213	2	45	2	62	58	0	4	0	0	0	0	0
2005	2	1-Aug-05	213	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	2-Aug-05	214	4	68	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	2-Aug-05	214	5	45	2	55	47	8	0	0	0	0	0	0
2005	2	2-Aug-05	214	6	45	3	108	0	108	0	0	0	0	0	0
2005	2	3-Aug-05	215	7	45	2	166	0	43	0	7	116	0	0	0
2005	2	3-Aug-05	215	8	90	2	9	0	9	0	0	0	0	0	0
2005	2	3-Aug-05	215	9	45	2	119	0	119	0	0	0	0	0	0
2005	2	TOTALS					668	105	436	4	7	116	0	0	0
2005	3	5-Aug-05	217	1	45	2	433	0	178	0	0	9	0	0	246
2005	3	5-Aug-05	217	2	68	2	34	10	1	9	0	2	12	0	0
2005	3	5-Aug-05	217	3	68	2	48	44	0	0	0	0	0	0	0
2005	3	6-Aug-05	218	4	135	1	32	0	32	0	0	0	0	0	0
2005	3	6-Aug-05	218	5	135	2	11	0	11	0	0	0	0	0	0
2005	3	6-Aug-05	218	6	135	2	70	0	21	0	0	0	0	0	49
2005	3	7-Aug-05	219	7	225	2	13	0	13	0	0	0	0	0	0
2005	3	7-Aug-05	219	8	135	1	236	0	236	0	0	0	0	0	0
2005	3	7-Aug-05	219	9	180	3	111	0	111	0	0	0	0	0	0
2005	3	TOTALS					988	54	603	9	0	11	12	0	295
2005	4	9-Aug-05	221	1	270	3	37	0	37	0	0	0	0	0	0
2005	4	9-Aug-05	221	2	225	3	130	0	112	18	0	0	0	0	0
2005	4	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	10-Aug-05	222	4	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	10-Aug-05	222	5	225	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	10-Aug-05	222	6	225	2	10	0	10	0	0	0	0	0	0
2005	4	11-Aug-05	223	7	180	2	18	0	18	0	0	0	0	0	0
2005	4	11-Aug-05	223	8	225	2	7	0	7	0	0	0	0	0	0
2005	4	11-Aug-05	223	9	225	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	TOTALS					202	0	184	18	0	0	0	0	0
2005	5	13-Aug-05	225	1	45	2	2	0	2	0	0	0	0	0	0
2005	5	13-Aug-05	225	2	45	2	26	0	0	0	22	4	0	0	0
2005	5	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	4	0	2	1	0	1	0	0	0	0	0	0
2005	5	14-Aug-05	226	5	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	6	0	2	5	0	5	0	0	0	0	0	0
2005	5	15-Aug-05	227	7	0	1	60	0	32	0	0	28	0	0	0
2005	5	15-Aug-05	227	8	45	3	2	0	2	0	0	0	0	0	0
2005	5	15-Aug-05	227	9	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	TOTALS					96	0	42	0	22	32	0	0	0
2005	6	17-Aug-05	229	1	45	2	8	0	8	0	0	0	0	0	0

Appendix 4a. Peard 2005 transect data by habitat.															
Year	SurveyPd	Date	Jul Date	Transect	WindDir	Beaufort	Total birds	Mudflat	G beach	S marsh	Tundra	P edge	Pond	Lagoon	Ocean
2005	6	17-Aug-05	229	2	45	2	5	0	4	1	0	0	0	0	0
2005	6	17-Aug-05	229	3	45	2	27	27	0	0	0	0	0	0	0
2005	6	18-Aug-05	230	4	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	18-Aug-05	230	5	90	3	5	0	5	0	0	0	0	0	0
2005	6	18-Aug-05	230	6	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	19-Aug-05	231	7	135	3	37	0	14	0	0	23	0	0	0
2005	6	19-Aug-05	231	8	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	19-Aug-05	231	9	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	TOTALS					82	27	31	1	0	23	0	0	0
2005	7	20-Aug-05	232	1	90	2	3	0	3	0	0	0	0	0	0
2005	7	20-Aug-05	232	2	90	3	3	0	0	3	0	0	0	0	0
2005	7	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	21-Aug-05	233	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	20-Aug-05	232	5	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	20-Aug-05	232	6	90	2	6	0	6	0	0	0	0	0	0
2005	7	21-Aug-05	233	7	90	1	32	0	3	0	0	29	0	0	0
2005	7	21-Aug-05	233	8	180	2	1	0	1	0	0	0	0	0	0
2005	7	21-Aug-05	233	9	45	2	6	0	6	0	0	0	0	0	0
2005	67	TOTALS					51	0	19	3	0	29	0	0	0
2005		TOTAL FOR SPECIES						2137							

Appendix 4b. Peard 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	18-Jul-06	199	1	180	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	18-Jul-06	199	2	180	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	17-Jul-06	198	4	315	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	18-Jul-06	199	5	180	3	3	0	3	0	0	0	0	0	0
2006	1	18-Jul-06	199	6	180	3	50	0	50	0	0	0	0	0	0
2006	1	18-Jul-06	199	7	180	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	17-Jul-06	198	8	315	2	2	0	2	0	0	0	0	0	0
2006	1	17-Jul-06	198	9	315	2	6	0	6	0	0	0	0	0	0
2006	1	TOTALS					61	0	61	0	0	0	0	0	0
2006	2	20-Jul-06	201	1	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	21-Jul-06	202	2	270	3	1	0	0	1	0	0	0	0	0
2006	2	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	19-Jul-06	200	4	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	20-Jul-06	201	5	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	20-Jul-06	201	6	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	21-Jul-06	202	7	270	3	6	0	6	0	0	0	0	0	0
2006	2	19-Jul-06	200	8	270	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	19-Jul-06	200	9	270	3	7	0	7	0	0	0	0	0	0
2006	2	TOTALS					14	0	13	1	0	0	0	0	0
2006	3	24-Jul-06	205	1	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	25-Jul-06	206	2	45	1	1	0	0	1	0	0	0	0	0
2006	3	24-Jul-06	205	3	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	23-Jul-06	204	4	270	2	1	0	1	0	0	0	0	0	0
2006	3	24-Jul-06	205	5	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	24-Jul-06	205	6	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	25-Jul-06	206	7	45	1	2	0	2	0	0	0	0	0	0
2006	3	23-Jul-06	204	8	315	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	23-Jul-06	204	9	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	TOTALS					4	0	3	1	0	0	0	0	0
2006	4	28-Jul-06	209	1	135	1	17	0	17	0	0	0	0	0	0
2006	4	29-Jul-06	210	2	90	1	46	0	46	0	0	0	0	0	0
2006	4	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	27-Jul-06	208	4	45	1	3	0	3	0	0	0	0	0	0
2006	4	28-Jul-06	209	5	.	.	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	28-Jul-06	209	6	45	2	53	0	53	0	0	0	0	0	0
2006	4	30-Jul-06	211	7	270	4	1	0	1	0	0	0	0	0	0
2006	4	27-Jul-06	208	8	45	1	7	0	7	0	0	0	0	0	0
2006	4	27-Jul-06	208	9	45	1	12	0	12	0	0	0	0	0	0
2006	4	TOTALS					139	0	139	0	0	0	0	0	0
2006	5	2-Aug-06	214	1	45	1	93	0	93	0	0	0	0	0	0
2006	5	3-Aug-06	215	2	315	1	29	0	10	19	0	0	0	0	0
2006	5	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	4	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	2-Aug-06	214	5	45	1	243	0	243	0	0	0	0	0	0
2006	5	2-Aug-06	214	6	45	1	121	0	121	0	0	0	0	0	0
2006	5	3-Aug-06	215	7	45	1	5	0	5	0	0	0	0	0	0
2006	5	1-Aug-06	213	8	45	1	1	0	1	0	0	0	0	0	0

Appendix 4b. Peard 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	5	1-Aug-06	213	9	45	1	41	0	41	0	0	0	0	0	0
2006	5	TOTALS					533	0	514	19	0	0	0	0	0
2006	6	5-Aug-06	217	1	45	2	13	0	13	0	0	0	0	0	0
2006	6	6-Aug-06	218	2	45	1	20	0	4	16	0	0	0	0	0
2006	6	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	4-Aug-06	216	4	0	1	4	0	4	0	0	0	0	0	0
2006	6	5-Aug-06	217	5	45	2	4	0	4	0	0	0	0	0	0
2006	6	5-Aug-06	217	6	45	2	90	0	90	0	0	0	0	0	0
2006	6	6-Aug-06	218	7	45	2	6	0	6	0	0	0	0	0	0
2006	6	4-Aug-06	216	8	0	1	3	0	3	0	0	0	0	0	0
2006	6	4-Aug-06	216	9	0	1	17	0	17	0	0	0	0	0	0
2006	6	TOTALS					157	0	141	16	0	0	0	0	0
2006	7	9-Aug-06	221	1	135	2	43	0	43	0	0	0	0	0	0
2006	7	10-Aug-06	222	2	45	1	27	0	10	17	0	0	0	0	0
2006	7	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	8-Aug-06	220	4	315	3	10	0	10	0	0	0	0	0	0
2006	7	9-Aug-06	221	5	135	2	3	0	3	0	0	0	0	0	0
2006	7	9-Aug-06	221	6	135	1	2	0	2	0	0	0	0	0	0
2006	7	10-Aug-06	222	7	45	1	18	0	18	0	0	0	0	0	0
2006	7	8-Aug-06	220	8	270	3	2	0	2	0	0	0	0	0	0
2006	7	8-Aug-06	220	9	315	3	1	0	1	0	0	0	0	0	0
2006	7	TOTALS					106	0	89	17	0	0	0	0	0
2006	8	13-Aug-06	225	1	45	3	85	0	85	0	0	0	0	0	0
2006	8	14-Aug-06	226	2	135	1	51	0	3	48	0	0	0	0	0
2006	8	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	13-Aug-06	225	4	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	13-Aug-06	225	5	45	4	209	0	209	0	0	0	0	0	0
2006	8	13-Aug-06	225	6	45	4	91	0	91	0	0	0	0	0	0
2006	8	14-Aug-06	226	7	135	1	50	0	50	0	0	0	0	0	0
2006	8	12-Aug-06	224	8	45	4	15	0	15	0	0	0	0	0	0
2006	8	12-Aug-06	224	9	0	4	8	0	8	0	0	0	0	0	0
2006	8	TOTALS					509	0	461	48	0	0	0	0	0
2006	9	17-Aug-06	229	1	315	4	42	0	42	0	0	0	0	0	0
2006	9	18-Aug-06	230	2	45	3	36	0	27	9	0	0	0	0	0
2006	9	18-Aug-06	230	3	45	2	27	27	0	0	0	0	0	0	0
2006	9	16-Aug-06	228	4	315	3	17	17	0	0	0	0	0	0	0
2006	9	17-Aug-06	229	5	315	4	21	0	21	0	0	0	0	0	0
2006	9	17-Aug-06	229	6	315	4	51	0	51	0	0	0	0	0	0
2006	9	18-Aug-06	230	7	45	1	52	0	52	0	0	0	0	0	0
2006	9	16-Aug-06	228	8	315	2	23	0	23	0	0	0	0	0	0
2006	9	16-Aug-06	228	9	315	2	4	0	4	0	0	0	0	0	0
2006	9	TOTALS					273	44	220	9	0	0	0	0	0
2006	10	21-Aug-06	233	1	0	2	73	0	73	0	0	0	0	0	0
2006	10	22-Aug-06	234	2	45	2	14	0	4	10	0	0	0	0	0
2006	10	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	20-Aug-06	232	4	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	21-Aug-06	233	5	0	2	43	0	43	0	0	0	0	0	0
2006	10	21-Aug-06	233	6	0	2	28	0	28	0	0	0	0	0	0

Appendix 4b. Peard 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	10	22-Aug-06	234	7	45	2	60	0	60	0	0	0	0	0	0
2006	10	20-Aug-06	232	8	45	4	2	0	2	0	0	0	0	0	0
2006	10	20-Aug-06	232	9	45	4	17	0	17	0	0	0	0	0	0
2006	10	TOTALS					237	0	227	10	0	0	0	0	0
2006	11	26-Aug-06	238	1	45	2	10	0	10	0	0	0	0	0	0
2006	11	27-Aug-06	239	2	90	2	15	0	0	15	0	0	0	0	0
2006	11	27-Aug-06	239	3	90	2	5	5	0	0	0	0	0	0	0
2006	11	25-Aug-06	237	4	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	26-Aug-06	238	5	90	2	12	0	12	0	0	0	0	0	0
2006	11	26-Aug-06	238	6	90	2	16	0	16	0	0	0	0	0	0
2006	11	27-Aug-06	239	7	90	3	21	0	21	0	0	0	0	0	0
2006	11	25-Aug-06	237	8	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	25-Aug-06	237	9	45	4	3	0	3	0	0	0	0	0	0
2006	11	TOTALS					82	5	62	15	0	0	0	0	0
2006	12	30-Aug-06	242	1	315	2	23	0	23	0	0	0	0	0	0
2006	12	30-Aug-06	242	2	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	29-Aug-06	241	3	315	2	57	0	57	0	0	0	0	0	0
2006	12	30-Aug-06	242	5	315	1	1	0	1	0	0	0	0	0	0
2006	12	30-Aug-06	242	6	315	1	82	0	82	0	0	0	0	0	0
2006	12	2-Sep-06	245	7	45	2	2	0	2	0	0	0	0	0	0
2006	12	29-Aug-06	241	8	315	1	66	0	66	0	0	0	0	0	0
2006	12	29-Aug-06	241	9	315	1	63	0	63	0	0	0	0	0	0
2006	12	TOTALS					294	0	294	0	0	0	0	0	0
2006		TOTAL FOR SPECIES						2392							

Appendix 4c. Peard 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	1	28-Jul-05	209	1	45	4	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2005	1	28-Jul-05	209	2	45	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	28-Jul-05	209	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	29-Jul-05	210	4	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	29-Jul-05	210	5	45	3	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2005	1	29-Jul-05	210	6	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	30-Jul-05	211	7	45	2	35	22	0	0	0	11	0	0	2	0	0	0	0	0	0	0
2005	1	30-Jul-05	211	8	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	30-Jul-05	211	9	45	3	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
2005	1	TOTALS					50	23	0	0	0	25	0	0	2	0	0	0	0	0	0	0
2005	2	1-Aug-05	213	1	45	3	149	0	0	0	5	144	0	0	0	0	0	0	0	0	0	0
2005	2	1-Aug-05	213	2	45	2	62	19	0	0	0	43	0	0	0	0	0	0	0	0	0	0
2005	2	1-Aug-05	213	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	2-Aug-05	214	4	68	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	2-Aug-05	214	5	45	2	55	4	0	0	0	51	0	0	0	0	0	0	0	0	0	0
2005	2	2-Aug-05	214	6	45	3	108	9	0	0	4	92	0	0	1	0	2	0	0	0	0	0
2005	2	3-Aug-05	215	7	45	2	166	47	14	0	7	82	0	6	10	0	0	0	0	0	0	0
2005	2	3-Aug-05	215	8	90	2	9	5	0	0	0	1	0	0	0	0	3	0	0	0	0	0
2005	2	3-Aug-05	215	9	45	2	119	8	0	0	12	99	0	0	0	0	0	0	0	0	0	0
2005	2	TOTALS					668	92	14	0	28	512	0	6	11	0	5	0	0	0	0	0
2005	3	5-Aug-05	217	1	45	2	433	0	0	0	46	385	0	0	2	0	0	0	0	0	0	0
2005	3	5-Aug-05	217	2	68	2	34	1	0	0	0	33	0	0	0	0	0	0	0	0	0	0
2005	3	5-Aug-05	217	3	68	2	48	0	4	0	0	44	0	0	0	0	0	0	0	0	0	0
2005	3	6-Aug-05	218	4	135	1	32	0	5	0	0	26	0	0	1	0	0	0	0	0	0	0
2005	3	6-Aug-05	218	5	135	2	11	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0
2005	3	6-Aug-05	218	6	135	2	70	0	0	0	4	66	0	0	0	0	0	0	0	0	0	0
2005	3	7-Aug-05	219	7	225	2	13	10	0	0	0	0	0	0	1	0	0	0	0	2	0	0
2005	3	7-Aug-05	219	8	135	1	236	0	0	0	2	234	0	0	0	0	0	0	0	0	0	0
2005	3	7-Aug-05	219	9	180	3	111	0	0	0	7	101	0	0	3	0	0	0	0	0	0	0
2005	3	TOTALS					988	11	9	0	60	899	0	0	7	0	0	0	0	2	0	0
2005	4	9-Aug-05	221	1	270	3	37	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0
2005	4	9-Aug-05	221	2	225	3	130	0	1	0	5	109	0	0	15	0	0	0	0	0	0	0
2005	4	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	10-Aug-05	222	4	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	10-Aug-05	222	5	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	10-Aug-05	222	6	225	2	10	1	0	0	0	7	0	0	0	2	0	0	0	0	0	0
2005	4	11-Aug-05	223	7	180	2	18	1	0	0	0	14	0	0	2	0	0	0	0	1	0	0
2005	4	11-Aug-05	223	8	225	2	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0

Appendix 4c. Peard 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	4	11-Aug-05	223	9	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	TOTALS					202	2	1	0	5	174	0	0	17	2	0	0	0	1	0	0
2005	5	13-Aug-05	225	1	45	2	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2005	5	13-Aug-05	225	2	45	2	26	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0
2005	5	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	4	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2005	5	14-Aug-05	226	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	6	0	2	5	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0
2005	5	15-Aug-05	227	7	0	1	60	3	27	0	0	0	0	0	30	0	0	0	0	0	0	0
2005	5	15-Aug-05	227	8	45	3	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
2005	5	15-Aug-05	227	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	TOTALS					96	3	27	0	0	1	0	1	61	2	1	0	0	0	0	0
2005	6	17-Aug-05	229	1	45	2	8	0	3	0	0	2	0	0	0	3	0	0	0	0	0	0
2005	6	17-Aug-05	229	2	45	2	5	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	3	45	2	27	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	18-Aug-05	230	4	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	18-Aug-05	230	5	90	3	5	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0
2005	6	18-Aug-05	230	6	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	19-Aug-05	231	7	135	3	37	0	26	0	0	0	0	0	9	0	2	0	0	0	0	0
2005	6	19-Aug-05	231	8	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	19-Aug-05	231	9	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	TOTALS					82	1	60	0	0	4	0	0	9	6	2	0	0	0	0	0
2005	7	20-Aug-05	232	1	90	2	3	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
2005	7	20-Aug-05	232	2	90	3	3	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
2005	7	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	21-Aug-05	233	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	20-Aug-05	232	5	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	20-Aug-05	232	6	90	2	6	0	0	0	0	0	0	2	0	2	2	0	0	0	0	0
2005	7	21-Aug-05	233	7	90	1	32	0	6	0	0	0	0	2	2	1	0	0	0	0	20	1
2005	7	21-Aug-05	233	8	180	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2005	7	21-Aug-05	233	9	45	2	6	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0
2005	67	TOTALS					51	0	7	0	0	2	0	5	4	10	2	0	0	0	20	1
2005		TOTAL FOR SPECIES						132	118	0	93	1617	0	12	111	20	10	0	0	3	20	1

Appendix 4d. Peard 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	1	18-Jul-06	199	1	180	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	18-Jul-06	199	2	180	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	17-Jul-06	198	4	315	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	18-Jul-06	199	5	180	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
2006	1	18-Jul-06	199	6	180	3	50	0	0	0	0	46	0	0	0	4	0	0	0	0	0	0
2006	1	18-Jul-06	199	7	180	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	17-Jul-06	198	8	315	2	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
2006	1	17-Jul-06	198	9	315	2	6	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0
2006	1	TOTALS					61	0	0	0	0	50	0	0	0	11	0	0	0	0	0	0
2006	2	20-Jul-06	201	1	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	21-Jul-06	202	2	270	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	19-Jul-06	200	4	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	20-Jul-06	201	5	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	20-Jul-06	201	6	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	21-Jul-06	202	7	270	3	6	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	2	19-Jul-06	200	8	270	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	19-Jul-06	200	9	270	3	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0
2006	2	TOTALS					14	4	0	0	0	3	0	0	0	7	0	0	0	0	0	0
2006	3	24-Jul-06	205	1	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	25-Jul-06	206	2	45	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	24-Jul-06	205	3	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	23-Jul-06	204	4	270	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	3	24-Jul-06	205	5	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	24-Jul-06	205	6	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	25-Jul-06	206	7	45	1	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	3	23-Jul-06	204	8	315	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	23-Jul-06	204	9	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	TOTALS					4	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2006	4	28-Jul-06	209	1	135	1	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	2	90	1	46	45	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	4	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	27-Jul-06	208	4	45	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 4d. Peard 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	4	28-Jul-06	209	5	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	28-Jul-06	209	6	45	2	53	1	0	0	0	52	0	0	0	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	7	270	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	27-Jul-06	208	8	45	1	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
2006	4	27-Jul-06	208	9	45	1	12	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0
2006	4	TOTALS					139	67	0	0	0	71	0	0	0	0	0	1	0	0	0	0
2006	5	2-Aug-06	214	1	45	1	93	3	0	0	7	82	0	0	1	0	0	0	0	0	0	0
2006	5	3-Aug-06	215	2	315	1	29	16	1	0	0	12	0	0	0	0	0	0	0	0	0	0
2006	5	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	4	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	2-Aug-06	214	5	45	1	243	0	0	0	1	242	0	0	0	0	0	0	0	0	0	0
2006	5	2-Aug-06	214	6	45	1	121	0	0	0	6	115	0	0	0	0	0	0	0	0	0	0
2006	5	3-Aug-06	215	7	45	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	8	45	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	9	45	1	41	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0
2006	5	TOTALS					533	24	1	0	14	493	0	0	1	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	1	45	2	13	1	0	0	0	10	0	2	0	0	0	0	0	0	0	0
2006	6	6-Aug-06	218	2	45	1	20	8	0	0	0	6	0	0	6	0	0	0	0	0	0	0
2006	6	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	4-Aug-06	216	4	0	1	4	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	5	45	2	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	6	45	2	90	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0
2006	6	6-Aug-06	218	7	45	2	6	4	0	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	8	0	1	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	9	0	1	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	TOTALS					157	14	0	0	0	116	0	4	6	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	1	135	2	43	0	0	0	31	12	0	0	0	0	0	0	0	0	0	0
2006	7	10-Aug-06	222	2	45	1	27	0	4	0	3	12	0	0	8	0	0	0	0	0	0	0
2006	7	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	8-Aug-06	220	4	315	3	10	0	0	0	2	8	0	0	0	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	5	135	2	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	6	135	1	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2006	7	10-Aug-06	222	7	45	1	18	0	0	0	2	12	0	0	4	0	0	0	0	0	0	0
2006	7	8-Aug-06	220	8	270	3	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0

Appendix 4d. Peard 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	7	8-Aug-06	220	9	315	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	7	TOTALS					106	0	4	0	39	51	0	0	12	0	0	0	0	0	0	0
2006	8	13-Aug-06	225	1	45	3	85	0	0	0	5	76	0	0	4	0	0	0	0	0	0	0
2006	8	14-Aug-06	226	2	135	1	51	0	8	0	0	10	0	0	30	0	0	0	0	0	3	0
2006	8	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	13-Aug-06	225	4	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	13-Aug-06	225	5	45	4	209	0	0	0	0	209	0	0	0	0	0	0	0	0	0	0
2006	8	13-Aug-06	225	6	45	4	91	0	0	0	0	91	0	0	0	0	0	0	0	0	0	0
2006	8	14-Aug-06	226	7	135	1	50	0	18	0	0	18	0	0	14	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	8	45	4	15	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	9	0	4	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
2006	8	TOTALS					509	0	26	0	5	427	0	0	48	0	0	0	0	0	3	0
2006	9	17-Aug-06	229	1	315	4	42	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	2	45	3	36	0	0	0	0	35	0	0	1	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	3	45	2	27	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	16-Aug-06	228	4	315	3	17	0	3	0	0	14	0	0	0	0	0	0	0	0	0	0
2006	9	17-Aug-06	229	5	315	4	21	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0
2006	9	17-Aug-06	229	6	315	4	51	0	0	0	0	51	0	0	0	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	7	45	1	52	0	47	0	0	2	0	0	3	0	0	0	0	0	0	0
2006	9	16-Aug-06	228	8	315	2	23	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0
2006	9	16-Aug-06	228	9	315	2	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	9	TOTALS					273	0	77	0	0	192	0	0	4	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	1	0	2	73	0	3	0	0	70	0	0	0	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	2	45	2	14	0	4	0	0	5	0	0	5	0	0	0	0	0	0	0
2006	10	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	20-Aug-06	232	4	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	5	0	2	43	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0
2006	10	21-Aug-06	233	6	0	2	28	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	7	45	2	60	0	16	0	0	2	0	0	0	0	0	0	0	1	41	0
2006	10	20-Aug-06	232	8	45	4	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	10	20-Aug-06	232	9	45	4	17	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0
2006	10	TOTALS					237	0	23	0	0	167	0	0	5	0	0	0	0	1	41	0
2006	11	26-Aug-06	238	1	45	2	10	0	1	0	0	9	0	0	0	0	0	0	0	0	0	0
2006	11	27-Aug-06	239	2	90	2	15	0	2	0	0	12	0	0	1	0	0	0	0	0	0	0

Appendix 4d. Peard 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	11	27-Aug-06	239	3	90	2	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	25-Aug-06	237	4	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	5	90	2	12	0	0	0	0	8	0	0	0	4	0	0	0	0	0	0
2006	11	26-Aug-06	238	6	90	2	16	0	0	0	0	14	0	0	0	2	0	0	0	0	0	0
2006	11	27-Aug-06	239	7	90	3	21	12	0	0	0	7	0	0	0	0	0	0	0	0	2	0
2006	11	25-Aug-06	237	8	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	25-Aug-06	237	9	45	4	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	11	TOTALS					82	12	8	0	0	53	0	0	1	6	0	0	0	0	2	0
2006	12	30-Aug-06	242	1	315	2	23	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	2	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	29-Aug-06	241	3	315	2	57	0	0	0	0	57	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	5	315	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2006	12	30-Aug-06	242	6	315	1	82	0	0	0	0	78	0	0	0	4	0	0	0	0	0	0
2006	12	2-Sep-06	245	7	45	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	29-Aug-06	241	8	315	1	66	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0
2006	12	29-Aug-06	241	9	315	1	63	0	0	0	2	61	0	0	0	0	0	0	0	0	0	0
2006	12	TOTALS					294	0	2	0	2	285	0	0	0	5	0	0	0	0	0	0
2006		TOTAL FOR SPECIES					123	141	0	60	1909	0	5	77	29	0	1	0	1	46	0	2392

Appendix 5a. Barrow 2005 transect data by habitat.																
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	1	24-Jul-05	205	1	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	24-Jul-05	205	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	24-Jul-05	205	3	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	24-Jul-05	205	4	90	3	4	0	0	4	0	0	0	0	0
2005	1	25-Jul-05	205	5	90	4	9	3	0	6	0	0	0	0	0
2005	1	25-Jul-05	205	6	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	25-Jul-05	205	7	90	4	8	0	0	8	0	0	0	0	0
2005	1	25-Jul-05	205	8	90	4	1	0	1	0	0	0	0	0	0
2005	1	25-Jul-05	205	9	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	TOTALS					22	3	1	18	0	0	0	0	0
2005	2	27-Jul-05	208	1	45	4	18	0	18	0	0	0	0	0	0
2005	2	27-Jul-05	208	2	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	27-Jul-05	208	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	27-Jul-05	208	4	68	5	11	0	0	11	0	0	0	0	0
2005	2	28-Jul-05	209	5	90	2	24	0	23	1	0	0	0	0	0
2005	2	28-Jul-05	209	6	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	28-Jul-05	209	7	90	3	9	0	0	9	0	0	0	0	0
2005	2	28-Jul-05	209	8	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	28-Jul-05	209	9	90	4	1	0	0	1	0	0	0	0	0
2005	2	TOTALS					63	0	41	22	0	0	0	0	0
2005	3	30-Jul-05	211	1	90	2	13	0	13	0	0	0	0	0	0
2005	3	30-Jul-05	211	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	30-Jul-05	211	3	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	30-Jul-05	211	4	90	3	21	0	0	21	0	0	0	0	0
2005	3	31-Jul-05	212	5	90	2	57	0	4	53	0	0	0	0	0
2005	3	31-Jul-05	212	6	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	31-Jul-05	212	7	90	2	92	0	0	92	0	0	0	0	0
2005	3	31-Jul-05	212	8	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	31-Jul-05	212	9	90	2	2	0	0	2	0	0	0	0	0
2005	3	TOTALS					185	0	17	168	0	0	0	0	0
2005	4	2-Aug-05	214	1	68	1	18	0	18	0	0	0	0	0	0
2005	4	2-Aug-05	214	2	90	2	1	0	1	0	0	0	0	0	0
2005	4	2-Aug-05	214	3	68	2	126	0	0	126	0	0	0	0	0
2005	4	2-Aug-05	214	4	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	3-Aug-05	215	5	90	1	37	0	3	34	0	0	0	0	0
2005	4	3-Aug-05	215	6	90	2	2	0	0	2	0	0	0	0	0
2005	4	3-Aug-05	215	7	90	2	126	0	0	126	0	0	0	0	0
2005	4	3-Aug-05	215	8	90	1	11	0	11	0	0	0	0	0	0
2005	4	3-Aug-05	215	9	90	1	7	0	3	4	0	0	0	0	0
2005	4	TOTALS					328	0	36	292	0	0	0	0	0
2005	5	5-Aug-05	217	1	90	3	7	0	7	0	0	0	0	0	0
2005	5	5-Aug-05	217	2	90	3	-	0	1007	0	0	0	0	0	0
2005	5	5-Aug-05	217	3	90	3	101	0	101	0	0	0	0	0	0
2005	5	5-Aug-05	217	4	90	3	88	0	0	88	0	0	0	0	0
2005	5	6-Aug-05	218	5	135	2	196	0	0	0	0	10	0	0	0
2005	5	6-Aug-05	218	6	135	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	6-Aug-05	218	7	90	1	79	0	0	79	0	0	0	0	0
2005	5	6-Aug-05	218	8	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	6-Aug-05	218	9	135	2	150	0	145	4	0	1	0	0	0

Appendix 5a. Barrow 2005 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	5	TOTALS					-	0	1260	171	0	11	0	0	0
2005	6	8-Aug-05	220	1	135	6	85	0	85	0	0	0	0	0	0
2005	6	8-Aug-05	220	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	8-Aug-05	220	3	135	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	8-Aug-05	220	4	90	3	50	0	0	50	0	0	0	0	0
2005	6	10-Aug-05	222	5	45	1	69	0	16	0	0	53	0	0	0
2005	6	10-Aug-05	222	6	90	1	1	0	0	0	1	0	0	0	0
2005	6	10-Aug-05	222	7	90	2	11	0	9	2	0	0	0	0	0
2005	6	10-Aug-05	222	8	45	2	5	0	5	0	0	0	0	0	0
2005	6	10-Aug-05	222	9	45	1	4	0	4	0	0	0	0	0	0
2005	6	TOTALS					225	0	119	52	1	53	0	0	0
2005	7	11-Aug-05	223	1	90	2	3	0	3	0	0	0	0	0	0
2005	7	11-Aug-05	223	2	90	2	77	0	77	0	0	0	0	0	0
2005	7	11-Aug-05	223	3	90	2	1	0	1	0	0	0	0	0	0
2005	7	11-Aug-05	223	4	90	2	12	0	5	7	0	0	0	0	0
2005	7	13-Aug-05	225	5	90	1	40	0	40	0	0	0	0	0	0
2005	7	13-Aug-05	225	6	90	1	1	0	0	1	0	0	0	0	0
2005	7	13-Aug-05	225	7	90	1	10	0	0	10	0	0	0	0	0
2005	7	13-Aug-05	225	8	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	13-Aug-05	225	9	90	1	21	0	21	0	0	0	0	0	0
2005	7	TOTALS					165	0	147	18	0	0	0	0	0
2005	8	14-Aug-05	226	1	90	1	31	0	31	0	0	0	0	0	0
2005	8	14-Aug-05	226	2	90	2	91	0	91	0	0	0	0	0	0
2005	8	14-Aug-05	226	3	90	2	271	0	271	0	0	0	0	0	0
2005	8	14-Aug-05	226	4	90	2	189	0	152	37	0	0	0	0	0
2005	8	15-Aug-05	227	5	45	1	294	0	271	23	0	0	0	0	0
2005	8	15-Aug-05	227	6	45	1	6	0	0	3	0	3	0	0	0
2005	8	15-Aug-05	227	7	90	2	15	0	0	0	0	15	0	0	0
2005	8	15-Aug-05	227	8	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	15-Aug-05	227	9	45	1	19	0	15	4	0	0	0	0	0
2005	8	TOTALS					916	0	831	67	0	18	0	0	0
2005	9	17-Aug-05	229	1	45	1	33	0	33	0	0	0	0	0	0
2005	9	17-Aug-05	229	2	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	9	17-Aug-05	229	3	90	1	3	0	3	0	0	0	0	0	0
2005	9	17-Aug-05	229	4	90	2	27	0	0	27	0	0	0	0	0
2005	9	18-Aug-05	230	5	90	3	5	0	5	0	0	0	0	0	0
2005	9	18-Aug-05	230	6	90	2	1	0	1	0	0	0	0	0	0
2005	9	18-Aug-05	230	7	90	3	4	0	0	0	0	4	0	0	0
2005	9	18-Aug-05	230	8	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	9	18-Aug-05	230	9	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	9	TOTALS					73	0	42	27	0	4	0	0	0
2005	10	20-Aug-05	232	1	90	2	2	0	2	0	0	0	0	0	0
2005	10	20-Aug-05	232	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	10	20-Aug-05	232	3	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	10	20-Aug-05	232	4	90	3	6	0	0	6	0	0	0	0	0
2005	10	21-Aug-05	233	5	90	1	597	0	596	1	0	0	0	0	0
2005	10	21-Aug-05	233	6	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	10	21-Aug-05	233	7	90	1	1	0	1	0	0	0	0	0	0
2005	10	21-Aug-05	233	8	90	1	8	0	8	0	0	0	0	0	0

Appendix 5a. Barrow 2005 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	10	21-Aug-05	233	9	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	10	TOTALS					614	0	607	7	0	0	0	0	0
2005	11	23-Aug-05	235	1	90	2	10	0	10	0	0	0	0	0	0
2005	11	23-Aug-05	235	2	90	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	11	23-Aug-05	235	3	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	11	23-Aug-05	235	4	45	3	6	0	0	6	0	0	0	0	0
2005	11	24-Aug-05	236	5	90	1	537	0	537	0	0	0	0	0	0
2005	11	24-Aug-05	236	6	45	2	11	0	0	11	0	0	0	0	0
2005	11	24-Aug-05	236	7	45	1	12	0	12	0	0	0	0	0	0
2005	11	24-Aug-05	236	8	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	11	24-Aug-05	236	9	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	11	TOTALS					576	0	559	17	0	0	0	0	0
2005	12	26-Aug-05	238	1	45	1	19	0	19	0	0	0	0	0	0
2005	12	26-Aug-05	238	2	45	2	1	0	1	0	0	0	0	0	0
2005	12	26-Aug-05	238	3	45	1	161	0	161	0	0	0	0	0	0
2005	12	26-Aug-05	238	4	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	12	27-Aug-05	239	5	90	1	7	0	0	7	0	0	0	0	0
2005	12	27-Aug-05	239	6	135	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	12	27-Aug-05	239	7	90	1	1	0	1	0	0	0	0	0	0
2005	12	27-Aug-05	239	8	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	12	27-Aug-05	239	9	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	12	TOTALS					189	0	182	7	0	0	0	0	0
2005	13	29-Aug-05	241	1	45	1	14	0	14	0	0	0	0	0	0
2005	13	29-Aug-05	241	2	90	2	33	0	33	0	0	0	0	0	0
2005	13	29-Aug-05	241	3	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	29-Aug-05	241	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	30-Aug-05	242	5	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	30-Aug-05	242	6	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	30-Aug-05	242	7	0	3	1	0	0	1	0	0	0	0	0
2005	13	30-Aug-05	242	8	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	30-Aug-05	242	9	315	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	13	TOTALS					48	0	47	1	0	0	0	0	0
2005		TOTAL FOR SPECIES						5032							

Appendix 5b. Barrow 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	21-Jul-06	202	1	225	3	16	0	16	0	0	0	0	0	0
2006	1	21-Jul-06	202	2	225	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	21-Jul-06	202	3	225	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	21-Jul-06	202	4	225	3	103	0	95	8	0	0	0	0	0
2006	1	22-Jul-06	203	5	225	2	119	0	1	1	0	20	97	0	0
2006	1	22-Jul-06	203	6	225	2	7	0	0	5	0	2	0	0	0
2006	1	22-Jul-06	203	7	225	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	22-Jul-06	203	8	315	1	30	0	30	0	0	0	0	0	0
2006	1	22-Jul-06	203	9	225	2	29	2	0	0	0	0	27	0	0
2006	1	TOTALS					304	2	142	14	0	22	124	0	0
2006	2	24-Jul-06	205	1	90	3	75	0	75	0	0	0	0	0	0
2006	2	24-Jul-06	205	2	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	24-Jul-06	205	3	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	24-Jul-06	205	4	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	25-Jul-06	206	5	225	4	33	12	11	0	0	0	10	0	0
2006	2	25-Jul-06	206	6	225	4	2	0	0	0	2	0	0	0	0
2006	2	25-Jul-06	206	7	225	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	25-Jul-06	206	8	225	4	1	0	1	0	0	0	0	0	0
2006	2	25-Jul-06	206	9	225	4	3	0	3	0	0	0	0	0	0
2006	2	TOTALS					114	12	90	0	2	0	10	0	0
2006	3	27-Jul-06	208	1	135	2	110	0	110	0	0	0	0	0	0
2006	3	27-Jul-06	208	2	135	2	23	0	23	0	0	0	0	0	0
2006	3	27-Jul-06	208	3	135	2	1	0	1	0	0	0	0	0	0
2006	3	27-Jul-06	208	4	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	28-Jul-06	209	5	90	3	140	14	111	0	0	7	8	0	0
2006	3	28-Jul-06	209	6	90	3	1	0	0	0	1	0	0	0	0
2006	3	28-Jul-06	209	7	90	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	28-Jul-06	209	8	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	28-Jul-06	209	9	90	3	1	0	1	0	0	0	0	0	0
2006	3	TOTALS					276	14	246	0	1	7	8	0	0
2006	4	30-Jul-06	211	1	180	4	27	0	27	0	0	0	0	0	0
2006	4	30-Jul-06	211	2	180	3	17	0	11	0	0	0	0	0	6
2006	4	30-Jul-06	211	3	180	4	1	0	1	0	0	0	0	0	0
2006	4	30-Jul-06	211	4	180	4	2	0	1	1	0	0	0	0	0
2006	4	31-Jul-06	212	5	45	2	222	0	3	8	0	0	211	0	0
2006	4	31-Jul-06	212	6	45	2	20	0	3	16	1	0	0	0	0
2006	4	31-Jul-06	212	7	45	2	4	0	4	0	0	0	0	0	0
2006	4	31-Jul-06	212	8	45	2	2	0	1	0	0	0	0	0	1
2006	4	31-Jul-06	212	9	45	2	6	0	0	6	0	0	0	0	0
2006	4	TOTALS					301	0	51	31	1	0	211	0	7
2006	5	2-Aug-06	214	1	0	1	3	0	0	0	0	0	0	0	3
2006	5	2-Aug-06	214	2	0	1	9	0	6	0	0	0	0	0	3
2006	5	2-Aug-06	214	3	0	2	221	0	221	0	0	0	0	0	0
2006	5	2-Aug-06	214	4	0	2	16	0	0	2	0	0	0	0	14
2006	5	3-Aug-06	215	5	45	3	218	0	208	8	0	0	2	0	0
2006	5	3-Aug-06	215	6	45	2	17	0	0	7	0	10	0	0	0
2006	5	3-Aug-06	215	7	45	3	26	0	15	0	0	0	0	0	11
2006	5	3-Aug-06	215	8	45	1	349	0	6	44	0	10	0	0	289
2006	5	3-Aug-06	215	9	45	1	645	0	1	2	0	0	642	0	0
2006	5	TOTALS					1504	0	457	63	0	20	644	0	320
2006	6	5-Aug-06	217	1	23	3	5	0	5	0	0	0	0	0	0

Appendix 5b. Barrow 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	6	5-Aug-06	217	2	23	3	55	0	11	0	0	0	0	0	44
2006	6	5-Aug-06	217	3	23	3	22	0	16	0	0	0	0	0	4
2006	6	5-Aug-06	217	4	23	3	50	0	0	0	0	0	0	0	50
2006	6	6-Aug-06	218	5	135	3	3073	0	-	58	0	0	0	0	0
2006	6	6-Aug-06	218	6	135	3	22	0	0	13	5	0	4	0	0
2006	6	6-Aug-06	218	7	225	1	11	0	11	0	0	0	0	0	0
2006	6	6-Aug-06	218	8	90	1	13	0	0	0	0	0	0	0	13
2006	6	6-Aug-06	218	9	135	1	528	0	501	25	0	2	0	0	0
2006	6	TOTALS					3779	0	-	96	5	2	4	0	111
2006	7	8-Aug-06	220	1	315	4	2	0	2	0	0	0	0	0	0
2006	7	8-Aug-06	220	2	315	5	218	0	61	0	0	0	0	0	157
2006	7	8-Aug-06	220	3	315	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	8-Aug-06	220	4	315	4	209	0	36	12	0	0	0	0	161
2006	7	9-Aug-06	221	5	45	1	1766	0	0	2	0	6	1758	0	0
2006	7	9-Aug-06	221	6	45	2	235	0	0	2	0	0	233	0	0
2006	7	9-Aug-06	221	7	90	2	15	0	0	0	0	0	0	0	15
2006	7	9-Aug-06	221	8	90	1	132	1	11	0	0	0	0	0	120
2006	7	9-Aug-06	221	9	90	2	261	0	1	4	0	0	0	0	256
2006	7	TOTALS					2838	1	111	20	0	6	1991	0	709
2006	8	11-Aug-06	223	1	90	2	13	0	4	0	0	0	0	0	9
2006	8	11-Aug-06	223	2	90	2	46	0	19	0	0	0	0	0	27
2006	8	11-Aug-06	223	3	90	1	485	0	6	0	0	0	0	0	479
2006	8	11-Aug-06	223	4	90	1	17	4	0	0	0	0	0	0	13
2006	8	12-Aug-06	224	5	68	4	2060	0	200	10	0	0	1850	0	0
2006	8	12-Aug-06	224	6	68	4	65	0	1	10	0	0	54	0	0
2006	8	12-Aug-06	224	7	68	2	3	0	0	0	0	0	0	0	3
2006	8	12-Aug-06	224	8	90	1	1	1	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	9	68	4	10			2			8		
2006	8	TOTALS					2700	5	230	22	0	0	1912	0	531
2006	9	14-Aug-06	226	1	90	2	70	0	70	0	0	0	0	0	0
2006	9	14-Aug-06	226	2	90	1	29	4	0	0	0	0	0	0	25
2006	9	14-Aug-06	226	3	90	2	15	0	15	0	0	0	0	0	0
2006	9	14-Aug-06	226	4	45	3	368	85	76	144	0	0	0	0	63
2006	9	15-Aug-06	227	5	0	1	8	0	3	0	0	5	0	0	0
2006	9	15-Aug-06	227	6	.	.	5	0	2	3	0	0	0	0	0
2006	9	15-Aug-06	227	7	0	2	16	0	16	0	0	0	0	0	0
2006	9	15-Aug-06	227	8	.	.	164	2	15	0	0	0	0	0	147
2006	9	15-Aug-06	227	9	0	1	9	0	6	0	0	3	0	0	0
2006	9	TOTALS					684	91	203	147	0	8	0	0	235
2006	10	17-Aug-06	229	1	45	2	66	0	1	0	0	0	0	0	65
2006	10	17-Aug-06	229	2	45	2	381	0	1	0	0	0	0	0	380
2006	10	17-Aug-06	229	3	45	2	847	0	42	0	0	0	0	0	805
2006	10	17-Aug-06	229	4	45	2	65	0	0	25	0	0	0	0	40
2006	10	18-Aug-06	230	5	0	2	327	0	326	0	0	1	0	0	0
2006	10	18-Aug-06	230	6	0	0	0	0	0	23	0	0	190	0	0
2006	10	18-Aug-06	230	7	45	3	10	0	10	0	0	0	0	0	0
2006	10	18-Aug-06	230	8	0	0	58	3	5	0	0	0	0	0	50
2006	10	18-Aug-06	230	9	0	2	3	0	0	3	0	0	0	0	0
2006	10	TOTALS					1757	3	385	51	0	1	190	0	###
2006	11	20-Aug-06	232	1	45	4	14	0	0	0	0	0	0	0	14
2006	11	20-Aug-06	232	2	45	4	36	0	0	0	0	0	0	0	36

Appendix 5b. Barrow 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	11	20-Aug-06	232	3	45	4	6	0	0	0	0	0	0	0	6
2006	11	20-Aug-06	232	4	45	4	39	0	0	22	0	0	0	0	17
2006	11	21-Aug-06	233	5	0	0	0	0	2	0	0	1	92	0	0
2006	11	21-Aug-06	233	6	0	2	205	0	4	3	1	0	197	0	0
2006	11	21-Aug-06	233	7	315	3	2	0	0	0	0	0	0	0	2
2006	11	21-Aug-06	233	8	0	2	44	1	12	0	0	0	0	0	32
2006	11	21-Aug-06	233	9	315	3	11	0	0	0	0	0	11	0	0
2006	11	TOTALS					357	1	18	25	1	1	300	0	107
2006	12	23-Aug-06	235	1	0	3	87	0	0	0	0	0	0	0	87
2006	12	23-Aug-06	235	2	0	3	181	0	0	0	0	0	0	0	181
2006	12	23-Aug-06	235	3	45	2	88	0	6	0	0	0	0	0	82
2006	12	23-Aug-06	235	4	45	2	6	0	2	0	0	0	0	0	4
2006	12	24-Aug-06	236	5	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	24-Aug-06	236	6	.	.	3	0	2	0	0	0	1	0	0
2006	12	24-Aug-06	236	7	45	2	38	0	0	0	0	0	0	0	38
2006	12	24-Aug-06	236	8	90	2	48	0	9	0	0	0	0	0	39
2006	12	24-Aug-06	236	9	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	TOTALS					451	0	19	0	0	0	1	0	431
2006	13	26-Aug-06	238	1	135	2	351	0	37	0	0	0	0	0	314
2006	13	26-Aug-06	238	2	135	2	76	0	2	0	0	0	0	0	74
2006	13	26-Aug-06	238	3	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	26-Aug-06	238	4	135	2	29	1	7	0	0	0	0	0	24
2006	13	27-Aug-06	239	5	135	2	120	0	0	9	0	0	111	0	0
2006	13	27-Aug-06	239	6	135	4	1	0	0	1	0	0	0	0	0
2006	13	27-Aug-06	239	7	45	2	8	0	0	0	0	0	0	0	8
2006	13	27-Aug-06	239	8	180	2	96	0	26	0	0	0	0	0	70
2006	13	27-Aug-06	239	9	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	TOTALS					681	1	72	10	0	0	111	0	490
2006	14	29-Aug-06	241	1	0	1	117	0	0	0	0	0	0	0	117
2006	14	29-Aug-06	241	2	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	29-Aug-06	241	3	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	29-Aug-06	241	4	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	30-Aug-06	242	5	0	1	1	0	0	0	1	0	0	0	0
2006	14	30-Aug-06	242	6	225	1	3	0	0	3	0	0	0	0	0
2006	14	30-Aug-06	242	7	0	1	372	0	0	0	0	0	0	0	372
2006	14	30-Aug-06	242	8	225	1	1	0	0	1	0	0	0	0	0
2006	14	30-Aug-06	242	9	0	1	6	0	1	0	0	4	1	0	0
2006	14	TOTALS					500	0	1	4	1	4	1	0	489
2006	15	1-Sep-06	244	1	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	1-Sep-06	244	2	135	2	1	0	0	0	0	0	0	0	1
2006	15	1-Sep-06	244	3	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	1-Sep-06	244	4	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	2-Sep-06	245	5	135	2	13	0	2	0	6	0	5	0	0
2006	15	2-Sep-06	245	6	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	2-Sep-06	245	7	135	2	5	0	1	0	0	0	0	0	4
2006	15	2-Sep-06	245	8	135	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	2-Sep-06	245	9	135	2	2	0	2	0	0	0	0	0	0
2006	15	TOTALS					21	0	5	0	6	0	5	0	5
2006		TOTAL FOR SPECIES						16575							

Appendix 5c. Barrow 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	1	24-Jul-05	205	1	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	24-Jul-05	205	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	24-Jul-05	205	3	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	24-Jul-05	205	4	90	3	4	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
2005	1	25-Jul-05	205	5	90	4	9	7	0	0	1	0	0	1	0	0	0	0	0	0	0	0
2005	1	25-Jul-05	205	6	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	25-Jul-05	205	7	90	4	8	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	25-Jul-05	205	8	90	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2005	1	25-Jul-05	205	9	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	TOTALS					22	14	3	0	1	0	0	1	0	0	2	0	0	0	0	1
2005	2	27-Jul-05	208	1	45	4	18	0	4	0	0	13	0	0	0	1	0	0	0	0	0	0
2005	2	27-Jul-05	208	2	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	27-Jul-05	208	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	27-Jul-05	208	4	68	5	11	0	7	0	0	0	0	0	0	2	2	0	0	0	0	0
2005	2	28-Jul-05	209	5	90	2	24	23	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2005	2	28-Jul-05	209	6	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	28-Jul-05	209	7	90	3	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
2005	2	28-Jul-05	209	8	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	28-Jul-05	209	9	90	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2005	2	TOTALS					63	23	11	0	0	13	0	10	0	3	3	0	0	0	0	0
2005	3	30-Jul-05	211	1	90	2	13	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0
2005	3	30-Jul-05	211	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	30-Jul-05	211	3	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	30-Jul-05	211	4	90	3	21	13	4	0	0	2	0	0	0	0	2	0	0	0	0	0
2005	3	31-Jul-05	212	5	90	2	57	53	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2005	3	31-Jul-05	212	6	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	31-Jul-05	212	7	90	2	92	52	35	0	0	0	0	0	1	0	4	0	0	0	0	0
2005	3	31-Jul-05	212	8	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	31-Jul-05	212	9	90	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	TOTALS					185	120	39	0	4	2	0	0	1	0	19	0	0	0	0	0
2005	4	2-Aug-05	214	1	68	1	18	1	2	0	0	15	0	0	0	0	0	0	0	0	0	0
2005	4	2-Aug-05	214	2	90	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2005	4	2-Aug-05	214	3	68	2	126	87	38	0	0	0	0	0	0	0	0	1	0	0	0	0

Appendix 5c. Barrow 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	4	2-Aug-05	214	4	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	3-Aug-05	215	5	90	1	37	36	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2005	4	3-Aug-05	215	6	90	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	3-Aug-05	215	7	90	2	126	20	63	1	0	42	0	0	0	0	0	0	0	0	0	0
2005	4	3-Aug-05	215	8	90	1	11	0	0	0	2	7	0	0	0	0	2	0	0	0	0	0
2005	4	3-Aug-05	215	9	90	1	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	TOTALS					328	153	103	1	2	66	0	0	0	0	2	1	0	0	0	0
2005	5	5-Aug-05	217	1	90	3	7	0	1	0	0	6	0	0	0	0	0	0	0	0	0	0
2005	5	5-Aug-05	217	2	90	3	-	0	0	0	1	-	0	0	0	0	0	0	0	0	0	0
2005	5	5-Aug-05	217	3	90	3	101	0	0	0	0	100	0	0	0	1	0	0	0	0	0	0
2005	5	5-Aug-05	217	4	90	3	88	1	54	0	0	12	0	0	21	0	0	0	0	0	0	0
2005	5	6-Aug-05	218	5	135	2	196	9	1	0	5	167	0	1	13	0	0	0	0	0	0	0
2005	5	6-Aug-05	218	6	135	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	6-Aug-05	218	7	90	1	79	6	56	0	0	0	0	1	15	0	1	0	0	0	0	0
2005	5	6-Aug-05	218	8	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	6-Aug-05	218	9	135	2	150	5	0	0	10	132	0	0	3	0	0	0	0	0	0	0
2005	5	TOTALS					-	21	112	0	16	-	0	2	52	1	1	0	0	0	0	0
2005	6	8-Aug-05	220	1	135	6	85	0	11	0	1	62	0	0	5	1	4	1	0	0	0	0
2005	6	8-Aug-05	220	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	8-Aug-05	220	3	135	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	8-Aug-05	220	4	90	3	50	31	0	0	0	3	0	0	16	0	0	0	0	0	0	0
2005	6	10-Aug-05	222	5	45	1	69	10	10	0	0	0	0	10	39	0	0	0	0	0	0	0
2005	6	10-Aug-05	222	6	90	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2005	6	10-Aug-05	222	7	90	2	11	1	7	0	0	0	0	0	3	0	0	0	0	0	0	0
2005	6	10-Aug-05	222	8	45	2	5	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0
2005	6	10-Aug-05	222	9	45	1	4	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2005	6	TOTALS					225	44	29	0	4	65	0	11	63	4	4	1	0	0	0	0
2005	7	11-Aug-05	223	1	90	2	3	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0
2005	7	11-Aug-05	223	2	90	2	77	0	0	0	1	76	0	0	0	0	0	0	0	0	0	0
2005	7	11-Aug-05	223	3	90	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2005	7	11-Aug-05	223	4	90	2	12	2	3	0	0	1	0	0	0	2	4	0	0	0	0	0
2005	7	13-Aug-05	225	5	90	1	40	7	4	0	11	1	0	1	16	0	0	0	0	0	0	0
2005	7	13-Aug-05	225	6	90	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Appendix 5c. Barrow 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	7	13-Aug-05	225	7	90	1	10	0	6	0	0	0	0	2	2	0	0	0	0	0	0	0
2005	7	13-Aug-05	225	8	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	13-Aug-05	225	9	90	1	21	14	0	0	0	0	0	0	7	0	0	0	0	0	0	0
2005	7	TOTALS					165	23	14	0	12	79	0	4	26	3	4	0	0	0	0	0
2005	8	14-Aug-05	226	1	90	1	31	4	24	0	0	0	0	0	2	1	0	0	0	0	0	0
2005	8	14-Aug-05	226	2	90	2	91	0	0	0	1	90	0	0	0	0	0	0	0	0	0	0
2005	8	14-Aug-05	226	3	90	2	271	0	0	0	63	208	0	0	0	0	0	0	0	0	0	0
2005	8	14-Aug-05	226	4	90	2	189	5	21	0	32	113	0	0	14	3	0	1	0	0	0	0
2005	8	15-Aug-05	227	5	45	1	294	3	4	0	235	30	0	0	22	0	0	0	0	0	0	0
2005	8	15-Aug-05	227	6	45	1	6	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0
2005	8	15-Aug-05	227	7	90	2	15	0	2	0	0	0	0	0	13	0	0	0	0	0	0	0
2005	8	15-Aug-05	227	8	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	15-Aug-05	227	9	45	1	19	2	0	0	0	0	0	0	16	0	1	0	0	0	0	0
2005	8	TOTALS					916	14	54	0	331	441	0	0	67	4	4	1	0	0	0	0
2005	9	17-Aug-05	229	1	45	1	33	0	32	0	0	0	0	0	0	1	0	0	0	0	0	0
2005	9	17-Aug-05	229	2	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	17-Aug-05	229	3	90	1	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2005	9	17-Aug-05	229	4	90	2	27	1	18	0	0	0	0	0	7	0	1	0	0	0	0	0
2005	9	18-Aug-05	230	5	90	3	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
2005	9	18-Aug-05	230	6	90	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	18-Aug-05	230	7	90	3	4	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0
2005	9	18-Aug-05	230	8	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	18-Aug-05	230	9	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	TOTALS					73	1	52	0	0	3	0	0	15	1	1	0	0	0	0	0
2005	10	20-Aug-05	232	1	90	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	20-Aug-05	232	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	20-Aug-05	232	3	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	20-Aug-05	232	4	90	3	6	0	4	0	0	0	0	0	2	0	0	0	0	0	0	0
2005	10	21-Aug-05	233	5	90	1	597	1	1	0	233	352	0	0	10	0	0	0	0	0	0	0
2005	10	21-Aug-05	233	6	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	21-Aug-05	233	7	90	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2005	10	21-Aug-05	233	8	90	1	8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0
2005	10	21-Aug-05	233	9	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 5c. Barrow 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	10	TOTALS					614	1	7	0	233	352	0	0	20	0	1	0	0	0	0	0
2005	11	23-Aug-05	235	1	90	2	10	0	6	0	0	0	0	0	1	0	3	0	0	0	0	0
2005	11	23-Aug-05	235	2	90	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	23-Aug-05	235	3	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	23-Aug-05	235	4	45	3	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	24-Aug-05	236	5	90	1	537	0	6	0	264	249	0	1	15	0	0	0	0	0	2	0
2005	11	24-Aug-05	236	6	45	2	11	0	6	0	0	0	0	0	0	0	5	0	0	0	0	0
2005	11	24-Aug-05	236	7	45	1	12	0	0	0	0	11	0	0	1	0	0	0	0	0	0	0
2005	11	24-Aug-05	236	8	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	24-Aug-05	236	9	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	TOTALS					576	0	24	0	264	260	0	1	17	0	8	0	0	0	2	0
2005	12	26-Aug-05	238	1	45	1	19	0	17	0	2	0	0	0	0	0	0	0	0	0	0	0
2005	12	26-Aug-05	238	2	45	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2005	12	26-Aug-05	238	3	45	1	161	0	2	0	0	159	0	0	0	0	0	0	0	0	0	0
2005	12	26-Aug-05	238	4	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	27-Aug-05	239	5	90	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
2005	12	27-Aug-05	239	6	135	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	27-Aug-05	239	7	90	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2005	12	27-Aug-05	239	8	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	27-Aug-05	239	9	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	TOTALS					189	0	19	0	2	160	0	0	0	0	1	0	0	0	7	0
2005	13	29-Aug-05	241	1	45	1	14	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
2005	13	29-Aug-05	241	2	90	2	33	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0
2005	13	29-Aug-05	241	3	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	29-Aug-05	241	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	30-Aug-05	242	5	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	30-Aug-05	242	6	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	30-Aug-05	242	7	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	30-Aug-05	242	8	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	30-Aug-05	242	9	315	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13	TOTALS					48	0	1	0	0	47	0	0	0	0	0	0	0	0	0	0
2005		TOTAL FOR SPECIES						414	468	1	869	-	0	29	261	16	50	3	0	0	9	1

Appendix 5d. Barrow 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	1	21-Jul-06	202	1	225	3	16	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0
2006	1	21-Jul-06	202	2	225	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	21-Jul-06	202	3	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	21-Jul-06	202	4	225	3	103	0	0	0	0	96	0	0	0	0	0	7	0	0	0	0
2006	1	22-Jul-06	203	5	225	2	119	13	0	0	3	99	0	0	0	0	0	0	0	0	0	4
2006	1	22-Jul-06	203	6	225	2	7	5	0	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	1	22-Jul-06	203	7	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	22-Jul-06	203	8	315	1	30	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0
2006	1	22-Jul-06	203	9	225	2	29	0	0	0	0	27	0	0	0	0	0	0	0	0	0	2
2006	1	TOTALS					304	18	0	0	3	268	0	2	0	0	0	7	0	0	0	6
2006	2	24-Jul-06	205	1	90	3	75	0	0	0	0	75	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	2	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	3	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	4	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	25-Jul-06	206	5	225	4	33	5	0	0	2	10	0	0	0	0	0	15	0	0	0	1
2006	2	25-Jul-06	206	6	225	4	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
2006	2	25-Jul-06	206	7	225	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	25-Jul-06	206	8	225	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	2	25-Jul-06	206	9	225	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2006	2	TOTALS					114	5	0	0	2	86	0	1	0	0	0	15	0	1	0	4
2006	3	27-Jul-06	208	1	135	2	110	0	0	0	0	110	0	0	0	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	2	135	2	23	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	3	135	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2006	3	27-Jul-06	208	4	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	5	90	3	140	48	0	0	61	28	0	1	0	0	0	1	0	0	0	1
2006	3	28-Jul-06	209	6	90	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	7	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	8	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	9	90	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	TOTALS					276	49	0	0	61	161	0	2	0	0	1	1	0	0	0	1
2006	4	30-Jul-06	211	1	180	4	27	0	0	0	0	25	0	0	0	0	2	0	0	0	0	0
2006	4	30-Jul-06	211	2	180	3	17	0	0	1	14	2	0	0	0	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	3	180	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	4	180	4	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	4	31-Jul-06	212	5	45	2	222	11	0	0	123	87	0	0	0	0	0	0	0	0	0	1
2006	4	31-Jul-06	212	6	45	2	20	12	0	0	6	0	0	1	0	0	0	1	0	0	0	0
2006	4	31-Jul-06	212	7	45	2	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	4	31-Jul-06	212	8	45	2	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	4	31-Jul-06	212	9	45	2	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Appendix 5d. Barrow 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	4	TOTALS					301	30	1	1	144	119	0	1	0	0	2	1	0	0	0	2
2006	5	2-Aug-06	214	1	0	1	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	5	2-Aug-06	214	2	0	1	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0
2006	5	2-Aug-06	214	3	0	2	221	0	0	0	0	221	0	0	0	0	0	0	0	0	0	0
2006	5	2-Aug-06	214	4	0	2	16	0	0	0	0	14	0	0	0	0	0	2	0	0	0	0
2006	5	3-Aug-06	215	5	45	3	218	8	0	0	25	185	0	0	0	0	0	0	0	0	0	0
2006	5	3-Aug-06	215	6	45	2	17	4	2	0	0	6	0	5	0	0	0	0	0	0	0	0
2006	5	3-Aug-06	215	7	45	3	26	1	0	0	0	25	0	0	0	0	0	0	0	0	0	0
2006	5	3-Aug-06	215	8	45	1	349	26	1	1	0	318	0	0	0	0	3	0	0	0	0	0
2006	5	3-Aug-06	215	9	45	1	645	3	0	0	0	642	0	0	0	0	0	0	0	0	0	0
2006	5	TOTALS					1504	42	3	1	25	-	0	5	0	0	3	2	0	0	0	0
2006	6	5-Aug-06	217	1	23	3	5	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	2	23	3	55	0	0	0	1	54	0	0	0	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	3	23	3	22	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0
2006	6	5-Aug-06	217	4	23	3	50	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0
2006	6	6-Aug-06	218	5	135	3	3073	14	0	0	248	-	0	0	4	0	0	1	0	0	0	0
2006	6	6-Aug-06	218	6	135	3	22	6	3	0	0	11	0	1	0	0	0	0	1	0	0	0
2006	6	6-Aug-06	218	7	225	1	11	0	0	0	0	10	0	0	0	0	1	0	0	0	0	0
2006	6	6-Aug-06	218	8	90	1	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0
2006	6	6-Aug-06	218	9	135	1	528	26	0	0	0	501	0	0	1	0	0	0	0	0	0	0
2006	6	TOTALS					3779	47	3	0	249	-	0	1	5	0	1	1	1	0	0	0
2006	7	8-Aug-06	220	1	315	4	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	7	8-Aug-06	220	2	315	5	218	0	1	0	0	217	0	0	0	0	0	0	0	0	0	0
2006	7	8-Aug-06	220	3	315	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	8-Aug-06	220	4	315	4	209	0	1	0	0	204	0	0	0	0	4	0	0	0	0	0
2006	7	9-Aug-06	221	5	45	1	1766	3	0	0	0	-	0	5	1	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	6	45	2	235	0	0	0	20	211	0	4	0	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	7	90	2	15	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
2006	7	9-Aug-06	221	8	90	1	132	1	0	0	96	29	0	0	0	0	6	0	0	0	0	0
2006	7	9-Aug-06	221	9	90	2	261	3	0	0	0	257	0	0	1	0	0	0	0	0	0	0
2006	7	TOTALS					2838	7	2	0	116	-	0	9	2	0	10	0	0	0	0	0
2006	8	11-Aug-06	223	1	90	2	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0
2006	8	11-Aug-06	223	2	90	2	46	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0
2006	8	11-Aug-06	223	3	90	1	485	0	0	0	26	458	0	0	0	0	1	0	0	0	0	0
2006	8	11-Aug-06	223	4	90	1	17	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	5	68	4	2060	5	1	0	0	-	0	0	4	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	6	68	4	65	0	0	0	0	63	0	0	0	0	2	0	0	0	0	0
2006	8	12-Aug-06	224	7	68	2	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2006	8	12-Aug-06	224	8	90	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Appendix 5d. Barrow 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	8	12-Aug-06	224	9	68	4	10	1				8			1							
2006	8	TOTALS					2700	6	1	0	26	-	0	0	5	0	4	0	0	0	0	0
2006	9	14-Aug-06	226	1	90	2	70	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0
2006	9	14-Aug-06	226	2	90	1	29	3	0	8	0	17	0	1	0	0	0	0	0	0	0	0
2006	9	14-Aug-06	226	3	90	2	15	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
2006	9	14-Aug-06	226	4	45	3	368	0	1	0	0	365	0	0	0	1	1	0	0	0	0	0
2006	9	15-Aug-06	227	5	0	1	8	1	0	0	0	3	0	0	4	0	0	0	0	0	0	0
2006	9	15-Aug-06	227	6	.	.	5	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0
2006	9	15-Aug-06	227	7	0	2	16	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0
2006	9	15-Aug-06	227	8	.	.	164	1	38	0	0	115	0	0	9	0	1	0	0	0	0	0
2006	9	15-Aug-06	227	9	0	1	9	1	1	0	0	6	0	0	1	0	0	0	0	0	0	0
2006	9	TOTALS					684	6	40	8	0	611	0	2	14	1	2	0	0	0	0	0
2006	10	17-Aug-06	229	1	45	2	66	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0
2006	10	17-Aug-06	229	2	45	2	381	0	0	0	15	366	0	0	0	0	0	0	0	0	0	0
2006	10	17-Aug-06	229	3	45	2	847	0	0	0	0	845	0	0	0	0	2	0	0	0	0	0
2006	10	17-Aug-06	229	4	45	2	65	0	21	0	0	39	0	0	2	0	3	0	0	0	0	0
2006	10	18-Aug-06	230	5	0	2	327	0	1	0	0	326	0	0	0	0	0	0	0	0	0	0
2006	10	18-Aug-06	230	6	0	0	0	0	7	0	0	202	0	1	0	0	0	0	0	0	3	0
2006	10	18-Aug-06	230	7	45	3	10	0	0	0	0	9	0	0	0	0	1	0	0	0	0	0
2006	10	18-Aug-06	230	8	0	0	58	0	3	0	40	10	0	0	3	0	2	0	0	0	0	0
2006	10	18-Aug-06	230	9	0	2	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	TOTALS					1757	0	35	0	55	-	0	1	5	0	8	0	0	0	3	0
2006	11	20-Aug-06	232	1	45	4	14	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
2006	11	20-Aug-06	232	2	45	4	36	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0
2006	11	20-Aug-06	232	3	45	4	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
2006	11	20-Aug-06	232	4	45	4	39	0	21	0	0	18	0	0	0	0	0	0	0	0	0	0
2006	11	21-Aug-06	233	5	0	0	0	0	2	0	0	93	0	0	0	0	0	0	0	0	0	0
2006	11	21-Aug-06	233	6	0	2	205	0	1	0	0	203	0	0	0	0	0	0	0	1	0	0
2006	11	21-Aug-06	233	7	315	3	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	11	21-Aug-06	233	8	0	2	44	0	2	0	0	32	0	0	3	0	7	0	0	0	0	0
2006	11	21-Aug-06	233	9	315	3	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0
2006	11	TOTALS					357	0	26	0	0	415	0	0	3	0	7	0	0	1	0	0
2006	12	23-Aug-06	235	1	0	3	87	0	0	0	0	87	0	0	0	0	0	0	0	0	0	0
2006	12	23-Aug-06	235	2	0	3	181	0	0	0	0	181	0	0	0	0	0	0	0	0	0	0
2006	12	23-Aug-06	235	3	45	2	88	0	0	0	0	88	0	0	0	0	0	0	0	0	0	0
2006	12	23-Aug-06	235	4	45	2	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
2006	12	24-Aug-06	236	5	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	24-Aug-06	236	6	.	.	3	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	12	24-Aug-06	236	7	45	2	38	0	0	0	0	38	0	0	0	0	0	0	0	0	0	0

Appendix 5d. Barrow 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	12	24-Aug-06	236	8	90	2	48	0	9	0	0	39	0	0	0	0	0	0	0	0	0	0
2006	12	24-Aug-06	236	9	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	TOTALS					451	0	10	0	0	441	0	0	0	0	0	0	0	0	0	0
2006	13	26-Aug-06	238	1	135	2	351	0	0	0	0	351	0	0	0	0	0	0	0	0	0	0
2006	13	26-Aug-06	238	2	135	2	76	0	0	0	0	75	0	0	0	1	0	0	0	0	0	0
2006	13	26-Aug-06	238	3	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	26-Aug-06	238	4	135	2	29	0	7	0	0	22	0	0	0	0	0	0	0	0	0	0
2006	13	27-Aug-06	239	5	135	2	120	0	9	0	0	111	0	0	0	0	0	0	0	0	0	0
2006	13	27-Aug-06	239	6	135	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	13	27-Aug-06	239	7	45	2	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
2006	13	27-Aug-06	239	8	180	2	96	0	24	0	0	70	0	0	0	0	2	0	0	0	0	0
2006	13	27-Aug-06	239	9	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	TOTALS					681	0	40	0	0	637	0	1	0	1	2	0	0	0	0	0
2006	14	29-Aug-06	241	1	0	1	117	0	0	0	0	117	0	0	0	0	0	0	0	0	0	0
2006	14	29-Aug-06	241	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	29-Aug-06	241	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	29-Aug-06	241	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	30-Aug-06	242	5	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	30-Aug-06	242	6	225	1	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	30-Aug-06	242	7	0	1	372	0	0	0	0	372	0	0	0	0	0	0	0	0	0	0
2006	14	30-Aug-06	242	8	225	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	14	30-Aug-06	242	9	0	1	6	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	14	TOTALS					500	0	8	0	0	492	0	0	0	0	0	0	0	0	0	0
2006	15	1-Sep-06	244	1	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	1-Sep-06	244	2	135	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	15	1-Sep-06	244	3	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	1-Sep-06	244	4	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	2-Sep-06	245	5	135	2	13	0	8	0	0	5	0	0	0	0	0	0	0	0	0	0
2006	15	2-Sep-06	245	6	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	2-Sep-06	245	7	135	2	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
2006	15	2-Sep-06	245	8	135	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	2-Sep-06	245	9	135	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	TOTALS					21	0	10	0	0	11	0	0	0	0	0	0	0	0	0	0
2006		TOTAL FOR SPECIES						210	179	10	681	-	0	25	34	2	40	27	1	2	3	13

Appendix 6a. Colville 2005 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	1	27-Jul-05	208	1	ne	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	27-Jul-05	208	2	ne	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	27-Jul-05	208	3	ne	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	28-Jul-05	209	4	ne	4	9	0	0	4	5	0	0	0	0
2005	1	28-Jul-05	209	5	ne	5	2	0	0	2	0	0	0	0	0
2005	1	28-Jul-05	209	6	ne	4	42	0	0	42	0	0	0	0	0
2005	1	28-Jul-05	209	7	ne	5	8	0	0	4	2	0	2	0	0
2005	1	28-Jul-05	209	8	ne	4	14	0	0	0	1	13	0	0	0
2005	1	28-Jul-05	209	9	ne	4	8	0	0	0	0	8	0	0	0
2005	1	TOTALS					83	0	0	52	8	21	2	0	0
2005	2	30-Jul-05	211	1	ne	4	3	3	0	0	0	0	0	0	0
2005	2	30-Jul-05	211	2	ne	4	67	67	0	0	0	0	0	0	0
2005	2	30-Jul-05	211	3	ne	4	4	4	0	0	0	0	0	0	0
2005	2	1-Aug-05	213	4	ne	4	98	22	0	5	4	67	0	0	0
2005	2	31-Jul-05	212	5	ne	4	2	2	0	0	0	0	0	0	0
2005	2	31-Jul-05	212	6	ne	3	337	7	0	29	0	281	20	0	0
2005	2	31-Jul-05	212	7	ne	3	50	13	0	1	1	35	0	0	0
2005	2	31-Jul-05	212	8	ne	3	7	0	0	3	0	4	0	0	0
2005	2	31-Jul-05	212	9	ne	4	4	0	0	4	0	0	0	0	0
2005	2	TOTALS					572	118	0	42	5	387	20	0	0
2005	3	2-Aug-05	214	1	ne	3	33	33	0	0	0	0	0	0	0
2005	3	2-Aug-05	214	2	ne	2	1	1	0	0	0	0	0	0	0
2005	3	2-Aug-05	214	3	ne	2	4	4	0	0	0	0	0	0	0
2005	3	3-Aug-05	215	4	ne	4	12	0	0	0	0	12	0	0	0
2005	3	3-Aug-05	215	5	ne	4	134	43	0	17	0	74	0	0	0
2005	3	3-Aug-05	215	6	ne	3	21	11	0	1	0	9	0	0	0
2005	3	3-Aug-05	215	7	ne	3	239	2	0	13	16	208	0	0	0
2005	3	3-Aug-05	215	8	ne	3	58	0	0	1	3	55	0	0	0
2005	3	3-Aug-05	215	9	ne	4	61	27	0	0	0	34	0	0	0
2005	3	TOTALS					563	121	0	32	19	392	0	0	0
2005	4	5-Aug-05	217	1	ne	2	7	7	0	0	0	0	0	0	0
2005	4	5-Aug-05	217	2	ne	2	3	3	0	0	0	0	0	0	0
2005	4	5-Aug-05	217	3	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	6-Aug-05	218	4	se	1	73	0	0	23	0	49	1	0	0
2005	4	6-Aug-05	218	5	se	1	65	0	0	40	0	17	8	0	0
2005	4	7-Aug-05	219	6	s	3	832	0	0	6	1	15	810	0	0
2005	4	7-Aug-05	219	7	s	3	99	0	0	63	8	25	3	0	0
2005	4	6-Aug-05	218	8	s	1	23	0	0	0	1	20	2	0	0
2005	4	6-Aug-05	218	9	.	0	37	0	0	0	0	25	4	0	0
2005	4	TOTALS					-	10	0	132	10	151	828	0	0
2005	5	9-Aug-05	221	1	sw	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	9-Aug-05	221	2	sw	4	6	86	0	0	0	0	0	0	0
2005	5	9-Aug-05	221	3	sw	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	11-Aug-05	223	4	s	1	5	0	0	3	0	1	1	0	0
2005	5	11-Aug-05	223	5	s	2	47	0	0	30	0	6	11	0	0
2005	5	11-Aug-05	223	6	s	2	17	0	0	6	0	11	0	0	0
2005	5	11-Aug-05	223	7	s	2	4	0	0	3	0	1	0	0	0
2005	5	11-Aug-05	223	8	s	2	4	3	0	0	1	0	0	0	0
2005	5	11-Aug-05	223	9	sw	2	12	0	0	0	10	2	0	0	0
2005	5	TOTALS					95	89	0	42	11	21	12	0	0

Appendix 6a. Colville 2005 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	6	13-Aug-05	225	1	ne	1	90	90	0	0	0	0	0	0	0
2005	6	13-Aug-05	225	2	ne	2	14	11	0	0	0	0	3	0	0
2005	6	13-Aug-05	225	3	ne	3	2	2	0	0	0	0	0	0	0
2005	6	15-Aug-05	227	4	nw	1	5	0	0	0	2	3	0	0	0
2005	6	15-Aug-05	227	5	n	1	26	23	0	0	0	3	0	0	0
2005	6	14-Aug-05	226	6	ne	3	7	1	0	0	0	2	4	0	0
2005	6	14-Aug-05	226	7	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	14-Aug-05	226	8	e	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	14-Aug-05	226	9	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	TOTALS					144	127	0	0	2	8	7	0	0
2005	7	16-Aug-05	228	1	ne	2	58	58	0	0	0	0	0	0	0
2005	7	16-Aug-05	228	2	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	16-Aug-05	228	3	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	17-Aug-05	229	4	ne	2	5	0	0	0	4	1	0	0	0
2005	7	17-Aug-05	229	5	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	18-Aug-05	230	6	ne	3	15	0	0	0	0	0	15	0	0
2005	7	18-Aug-05	230	7	ne	3	8	0	0	8	0	0	0	0	0
2005	7	18-Aug-05	230	8	ne	3	4	0	0	0	3	1	0	0	0
2005	7	18-Aug-05	230	9	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	TOTALS					90	58	0	8	7	2	15	0	0
2005	8	20-Aug-05	232	1	n	2	768	768	0	0	0	0	0	0	0
2005	8	20-Aug-05	232	2	n	2	42	42	0	0	0	0	0	0	0
2005	8	20-Aug-05	232	3	n	2	71	71	0	0	0	0	0	0	0
2005	8	20-Aug-05	232	4	n	2	28	0	0	6	14	8	0	0	0
2005	8	20-Aug-05	232	5	n	2	166	0	0	11	0	155	0	0	0
2005	8	20-Aug-05	232	6	ne	2	1	0	0	0	0	0	1	0	0
2005	8	20-Aug-05	232	7	ne	2	21	0	0	0	0	21	0	0	0
2005	8	22-Aug-05	234	8	ne	2	10	0	0	0	0	10	0	0	0
2005	8	22-Aug-05	234	9	ne	2	11	0	0	4	0	7	0	0	0
2005	8	TOTALS					-	881	0	21	14	201	1	0	0
2005		TOTAL FOR SPECIES						-							

Appendix 6a. Colville 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	4	.	0	3	0	0	2	0	1	0	0	0
2006	1	20-Jul-06	201	5	.	0	6	0	0	5	0	1	0	0	0
2006	1	21-Jul-06	202	6	270	1	31	0	0	31	0	0	0	0	0
2006	1	21-Jul-06	202	7	270	3	5	0	0	1	0	4	0	0	0
2006	1	20-Jul-06	201	8	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	9	0	1	6	0	0	0	0	6	0	0	0
2006	1	TOTALS					51	0	0	39	0	12	0	0	0
2006	2	22-Jul-06	203	1	315	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	22-Jul-06	203	2	315	1	32	32	0	0	0	0	0	0	0
2006	2	22-Jul-06	203	3	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	25-Jul-06	206	4	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	25-Jul-06	206	5	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	24-Jul-06	205	6	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	24-Jul-06	205	7	0	2	9	0	0	9	0	0	0	0	0
2006	2	24-Jul-06	205	8	0	3	4	0	0	0	0	4	0	0	0
2006	2	24-Jul-06	205	9	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	TOTALS					45	32	0	9	0	4	0	0	0
2006	3	27-Jul-06	208	1	90	2	9	9	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	2	225	2	206	206	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	3	90	2	2	2	0	0	0	0	0	0	0
2006	3	29-Jul-06	210	4	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	29-Jul-06	210	5	0	3	51	0	0	51	0	0	0	0	0
2006	3	28-Jul-06	209	6	0	3	63	0	0	31	0	32	0	0	0
2006	3	28-Jul-06	209	7	45	2	151	0	0	151	0	0	0	0	0
2006	3	29-Jul-06	210	8	45	2	1	0	0	0	0	1	0	0	0
2006	3	28-Jul-06	209	10	0	4	21	0	0	1	0	20	0	0	0
2006	3	TOTALS					504	217	0	234	0	53	0	0	0
2006	4	30-Jul-06	211	1	45	3	53	53	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	2	45	3	708	708	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	3	45	3	15	15	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	4	0	1	7	0	0	2	0	5	0	0	0
2006	4	1-Aug-06	213	5	0	1	20	0	0	2	0	9	2	0	0
2006	4	1-Aug-06	213	6	0	1	32	0	0	11	0	18	3	0	0
2006	4	1-Aug-06	213	7	0	2	45	0	0	3	0	37	5	0	0
2006	4	1-Aug-06	213	8	0	3	11	0	0	5	0	6	0	0	0
2006	4	1-Aug-06	213	10	45	1	40	0	0	0	7	30	3	0	0
2006	4	TOTALS					931	776	0	23	7	105	13	0	0
2006	5	4-Aug-06	216	1	0	1	828	828	0	0	0	0	0	0	0
2006	5	4-Aug-06	216	2	0	2	184	184	0	0	0	0	0	0	0
2006	5	4-Aug-06	216	3	23	3	47	47	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	4	45	4	2	0	0	0	0	2	0	0	0
2006	5	5-Aug-06	217	5	45	4	42	0	0	33	0	9	0	0	0
2006	5	5-Aug-06	217	6	0	4	41	0	0	1	0	40	0	0	0
2006	5	5-Aug-06	217	7	0	4	54	0	0	54	0	0	0	0	0
2006	5	5-Aug-06	217	8	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	5-Aug-06	217	10	0	4	11	0	0	5	0	6	0	0	0
2006	5	TOTALS					-	-	0	93	0	57	0	0	0

Appendix 6a. Colville 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	6	8-Aug-06	220	1	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	8-Aug-06	220	2	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	8-Aug-06	220	3	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	8-Aug-06	220	4	270	3	2	0	0	0	0	0	2	0	0
2006	6	8-Aug-06	220	5	270	3	8	0	0	4	0	0	4	0	0
2006	6	8-Aug-06	220	6	225	3	15	0	0	0	0	15	0	0	0
2006	6	8-Aug-06	220	7	225	3	6	0	0	1	0	5	0	0	0
2006	6	8-Aug-06	220	8	270	3	8	0	0	0	0	3	5	0	0
2006	6	8-Aug-06	220	10	225	3	14	0	0	5	0	9	0	0	0
2006	6	TOTALS					53	0	0	10	0	32	11	0	0
2006	7	12-Aug-06	224	1	45	4	-	-	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	2	45	4	56	56	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	3	45	4	53	53	0	0	0	0	0	0	0
2006	7	11-Aug-06	223	4	45	3	2	0	0	0	0	2	0	0	0
2006	7	11-Aug-06	223	5	45	3	13	0	0	0	0	13	0	0	0
2006	7	12-Aug-06	224	6	45	4	15	0	0	0	0	15	0	0	0
2006	7	11-Aug-06	223	7	45	4	5	0	0	0	0	5	0	0	0
2006	7	11-Aug-06	223	8	45	3	18	0	0	0	0	18	0	0	0
2006	7	12-Aug-06	224	10	23	4	12	0	0	1	0	10	1	0	0
2006	7	TOTALS					-	-	0	1	0	63	1	0	0
2006	8	17-Aug-06	229	1	45	2	910	910	0	0	0	0	0	0	0
2006	8	17-Aug-06	229	2	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	17-Aug-06	229	3	45	2	76	76	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	4	315	2	1	0	0	0	0	1	0	0	0
2006	8	16-Aug-06	228	5	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	16-Aug-06	228	6	0	2	2	0	0	0	0	0	2	0	0
2006	8	16-Aug-06	228	7	0	2	8	0	0	3	0	5	0	0	0
2006	8	16-Aug-06	228	8	315	2	9	0	0	0	0	9	0	0	0
2006	8	16-Aug-06	228	10	0	2	4	0	0	4	0	0	0	0	0
2006	8	TOTALS					-	986	0	7	0	15	2	0	0
2006	9	20-Aug-06	232	1	45	2	458	458	0	0	0	0	0	0	0
2006	9	20-Aug-06	232	2	45	2	151	63	0	88	0	0	0	0	0
2006	9	20-Aug-06	232	3	45	2	2	2	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	4	23	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	19-Aug-06	231	5	23	3	13	0	0	1	0	12	0	0	0
2006	9	19-Aug-06	231	6	0	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	19-Aug-06	231	7	0	4	2	0	0	0	0	2	0	0	0
2006	9	19-Aug-06	231	8	23	3	8	0	0	0	0	8	0	0	0
2006	9	19-Aug-06	231	10	0	4	2			2					
2006	9	TOTALS					636	523	0	91	0	22	0	0	0
2006	10	24-Aug-06	236	1	45	1	421	421	0	0	0	0	0	0	0
2006	10	24-Aug-06	236	2	45	1	133	133	0	0	0	0	0	0	0
2006	10	24-Aug-06	236	3	45	2	385	385	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	4	315	2	8	0	0	8	0	0	0	0	0
2006	10	22-Aug-06	234	5	315	2	1	0	0	1	0	0	0	0	0
2006	10	22-Aug-06	234	6	315	3	1	0	0	0	0	0	1	0	0
2006	10	22-Aug-06	234	7	315	3	2	0	0	0	0	0	2	0	0
2006	10	22-Aug-06	234	8	315	2	44	0	0	1	0	43	0	0	0
2006	10	22-Aug-06	234	10	315	3	7	0	0	1	0	6	0	0	0
2006	10	TOTALS					-	939	0	11	0	49	3	0	0

Appendix 6a. Colville 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	11	29-Aug-06	241	1	0	1	165	165	0	0	0	0	0	0	0
2006	11	29-Aug-06	241	2	0	1	521	521	0	0	0	0	0	0	0
2006	11	29-Aug-06	241	3	0	1	15	15	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	4	45	2	3	0	0	3	0	0	0	0	0
2006	11	26-Aug-06	238	5	45	2	3	0	0	3	0	0	0	0	0
2006	11	26-Aug-06	238	6	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	26-Aug-06	238	7	0	2	1	0	0	0	0	1	0	0	0
2006	11	26-Aug-06	238	8	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	26-Aug-06	238	10	0	2	9	0	0	6	0	1	2	0	0
2006	11	TOTALS					717	701	0	12	0	2	2	0	0
2006	12	2-Sep-06	245	1	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	2-Sep-06	245	2	0	3	382	382	0	0	0	0	0	0	0
2006	12	2-Sep-06	245	3	0	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	30-Aug-06	242	4	315	2	6	0	0	6	0	0	0	0	0
2006	12	30-Aug-06	242	5	315	1	96	0	0	96	0	0	0	0	0
2006	12	30-Aug-06	242	6	315	1	1	0	0	1	0	0	0	0	0
2006	12	30-Aug-06	242	7	0	1	2	0	0	0	0	2	0	0	0
2006	12	30-Aug-06	242	8	315	1	28	0	0	28	0	0	0	0	0
2006	12	30-Aug-06	242	10	0	2	10	0	0	0	0	10	0	0	0
2006	12	TOTALS					525	382	0	131	0	12	0	0	0
2006		TOTAL FOR SPECIES						-							

Appendix 6c. Colville 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	1	27-Jul-05	208	1	ne	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	27-Jul-05	208	2	ne	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	27-Jul-05	208	3	ne	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	28-Jul-05	209	4	ne	4	9	1	0	0	0	0	0	0	0	0	0	0	0	8	0	0
2005	1	28-Jul-05	209	5	ne	5	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
2005	1	28-Jul-05	209	6	ne	4	42	24	0	9	0	0	0	3	0	0	2	0	0	4	0	0
2005	1	28-Jul-05	209	7	ne	5	8	2	0	1	1	1	0	0	0	0	0	0	0	3	0	0
2005	1	28-Jul-05	209	8	ne	4	14	1	0	13	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	28-Jul-05	209	9	ne	4	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	TOTALS					83	28	0	31	1	1	0	3	0	0	4	0	0	15	0	0
2005	2	30-Jul-05	211	1	ne	4	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	30-Jul-05	211	2	ne	4	67	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	30-Jul-05	211	3	ne	4	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	1-Aug-05	213	4	ne	4	98	47	0	10	0	11	28	0	0	0	2	0	0	0	0	0
2005	2	31-Jul-05	212	5	ne	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	31-Jul-05	212	6	ne	3	337	276	1	2	18	10	19	0	0	0	11	0	0	0	0	0
2005	2	31-Jul-05	212	7	ne	3	50	48	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2005	2	31-Jul-05	212	8	ne	3	7	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	31-Jul-05	212	9	ne	4	4	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0
2005	2	TOTALS					572	376	76	16	18	22	47	1	0	0	13	0	0	3	0	0
2005	3	2-Aug-05	214	1	ne	3	33	25	6	0	0	2	0	0	0	0	0	0	0	0	0	0
2005	3	2-Aug-05	214	2	ne	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	2-Aug-05	214	3	ne	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	3-Aug-05	215	4	ne	4	12	8	0	0	3	1	0	0	0	0	0	0	0	0	0	0
2005	3	3-Aug-05	215	5	ne	4	134	126	0	0	0	6	0	0	0	0	0	2	0	0	0	0
2005	3	3-Aug-05	215	6	ne	3	21	17	0	0	2	2	0	0	0	0	0	0	0	0	0	0
2005	3	3-Aug-05	215	7	ne	3	239	227	0	0	0	7	0	4	0	0	1	0	0	0	0	0
2005	3	3-Aug-05	215	8	ne	3	58	35	0	0	3	2	17	1	0	0	0	0	0	0	0	0
2005	3	3-Aug-05	215	9	ne	4	61	42	0	0	0	0	19	0	0	0	0	0	0	0	0	0
2005	3	TOTALS					563	485	6	0	8	20	36	5	0	0	1	2	0	0	0	0
2005	4	5-Aug-05	217	1	ne	2	7	0	2	0	0	4	0	0	0	1	0	0	0	0	0	0
2005	4	5-Aug-05	217	2	ne	2	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	5-Aug-05	217	3	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	6-Aug-05	218	4	se	1	73	54	4	0	10	0	0	4	1	0	0	0	0	0	0	0
2005	4	6-Aug-05	218	5	se	1	65	42	8	0	5	8	0	2	0	0	0	0	0	0	0	0
2005	4	7-Aug-05	219	6	s	3	832	15	0	0	805	8	1	3	0	0	0	0	0	0	0	0

Appendix 6c. Colville 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	4	7-Aug-05	219	7	s	3	99	46	4	0	3	0	22	19	5	0	0	0	0	0	0	0
2005	4	6-Aug-05	218	8	s	1	23	12	0	0	2	1	5	3	0	0	0	0	0	0	0	0
2005	4	6-Aug-05	218	9	.	0	37	29	0	0	6	0	0	2	0	0	0	0	0	0	0	0
2005	4	TOTALS					159	198	21	0	831	21	28	33	6	1	0	0	0	0	0	0
2005	5	9-Aug-05	221	1	sw	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	9-Aug-05	221	2	sw	4	6	0	86	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	9-Aug-05	221	3	sw	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	11-Aug-05	223	4	s	1	5	0	2	0	1	0	0	0	0	0	0	0	0	2	0	0
2005	5	11-Aug-05	223	5	s	2	47	9	1	0	22	8	6	1	0	0	0	0	0	0	0	0
2005	5	11-Aug-05	223	6	s	2	17	3	0	0	9	0	0	5	0	0	0	0	0	0	0	0
2005	5	11-Aug-05	223	7	s	2	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
2005	5	11-Aug-05	223	8	s	2	4	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0
2005	5	11-Aug-05	223	9	sw	2	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
2005	5	TOTALS					95	12	92	0	32	8	6	23	0	0	0	0	0	2	0	0
2005	6	13-Aug-05	225	1	ne	1	90	50	40	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	13-Aug-05	225	2	ne	2	14	5	6	0	0	3	0	0	0	0	0	0	0	0	0	0
2005	6	13-Aug-05	225	3	ne	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	15-Aug-05	227	4	nw	1	5	0	2	0	0	0	0	0	0	0	0	0	2	1	0	0
2005	6	15-Aug-05	227	5	n	1	26	25	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2005	6	14-Aug-05	226	6	ne	3	7	1	1	0	3	1	0	1	0	0	0	0	0	0	0	0
2005	6	14-Aug-05	226	7	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	14-Aug-05	226	8	e	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	14-Aug-05	226	9	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	TOTALS					144	83	49	0	3	5	0	1	0	0	0	0	2	1	0	0
2005	7	16-Aug-05	228	1	ne	2	58	3	55	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	16-Aug-05	228	2	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	16-Aug-05	228	3	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	17-Aug-05	229	4	ne	2	5	1	1	2	0	0	0	0	0	0	0	0	0	1	0	0
2005	7	17-Aug-05	229	5	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	18-Aug-05	230	6	ne	3	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0
2005	7	18-Aug-05	230	7	ne	3	8	1	0	0	0	0	0	0	0	0	0	0	7	0	0	0
2005	7	18-Aug-05	230	8	ne	3	4	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
2005	7	18-Aug-05	230	9	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	TOTALS					90	5	56	2	15	0	0	0	0	0	0	0	7	2	3	0
2005	8	20-Aug-05	232	1	n	2	768	0	765	0	0	0	0	0	0	0	0	0	0	3	0	0
2005	8	20-Aug-05	232	2	n	2	42	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	20-Aug-05	232	3	n	2	71	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 6c. Colville 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	8	20-Aug-05	232	4	n	2	28	3	5	4	0	0	0	0	0	0	0	0	0	16	0	0
2005	8	20-Aug-05	232	5	n	2	166	6	148	2	0	0	0	0	0	0	4	0	6	0	0	0
2005	8	20-Aug-05	232	6	ne	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2005	8	20-Aug-05	232	7	ne	2	21	0	15	0	0	0	0	0	0	0	0	0	0	0	6	0
2005	8	22-Aug-05	234	8	ne	2	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	9	ne	2	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	TOTALS					-	9	-	6	1	0	0	0	0	0	4	0	6	19	6	0
2005		TOTAL FOR SPECIES						-	-	55	909	77	117	66	6	1	22	2	15	42	9	0

Appendix 6d. Colville 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	1	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	n/a	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	4	.	0	3	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	5	.	0	6	0	0	0	0	0	0	4	0	0	0	0	2	0	0	0
2006	1	21-Jul-06	202	6	270	1	31	4	0	0	0	0	0	18	0	0	9	0	0	0	0	0
2006	1	21-Jul-06	202	7	270	3	5	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	9	0	1	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
2006	1	TOTALS					51	7	0	0	0	0	0	33	0	0	9	0	2	0	0	0
2006	2	22-Jul-06	203	1	315	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	22-Jul-06	203	2	315	1	32	3	29	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	22-Jul-06	203	3	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	25-Jul-06	206	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	25-Jul-06	206	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	7	0	2	9	4	3	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	8	0	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	24-Jul-06	205	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	TOTALS					45	11	32	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	1	90	2	9	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	2	225	2	206	200	0	0	0	6	0	0	0	0	0	0	0	0	0	0
2006	3	27-Jul-06	208	3	90	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	29-Jul-06	210	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	29-Jul-06	210	5	0	3	51	47	2	1	0	1	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	6	0	3	63	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	7	45	2	151	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	29-Jul-06	210	8	45	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	28-Jul-06	209	10	0	4	21	16	0	0	0	0	0	2	0	0	3	0	0	0	0	0
2006	3	TOTALS					504	486	5	1	0	7	0	2	0	0	3	0	0	0	0	0
2006	4	30-Jul-06	211	1	45	3	53	48	0	0	0	3	0	0	0	0	0	0	0	2	0	0
2006	4	30-Jul-06	211	2	45	3	708	469	239	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	30-Jul-06	211	3	45	3	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	4	0	1	7	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	5	0	1	20	14	0	4	1	1	0	0	0	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	6	0	1	32	29	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	7	0	2	45	40	0	0	2	2	1	0	0	0	0	0	0	0	0	0

Appendix 6d. Colville 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	4	1-Aug-06	213	8	0	3	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	1-Aug-06	213	10	45	1	40	25	0	1	1	2	0	8	0	0	3	0	0	0	0	0
2006	4	TOTALS					931	654	239	5	7	12	1	8	0	0	3	0	0	2	0	0
2006	5	4-Aug-06	216	1	0	1	828	327	500	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	5	4-Aug-06	216	2	0	2	184	183	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	4-Aug-06	216	3	23	3	47	35	12	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	4	45	4	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	5	45	4	42	18	24	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	6	0	4	41	12	0	0	22	3	4	0	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	7	0	4	54	39	0	0	0	0	14	1	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	8	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	5-Aug-06	217	10	0	4	11	1	2	0	6	2	0	0	0	0	0	0	0	0	0	0
2006	5	TOTALS					-	615	539	0	30	5	18	2	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	1	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	2	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	3	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	4	270	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	5	270	3	8	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	6	225	3	15	0	0	0	9	1	5	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	7	225	3	6	1	2	0	1	0	2	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	8	270	3	8	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
2006	6	8-Aug-06	220	10	225	3	14	1	3	0	6	0	1	3	0	0	0	0	0	0	0	0
2006	6	TOTALS					53	6	8	0	23	5	8	3	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	1	45	4	-	5	-	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	2	45	4	56	37	19	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	3	45	4	53	33	12	0	6	0	0	0	0	0	0	0	0	2	0	0
2006	7	11-Aug-06	223	4	45	3	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
2006	7	11-Aug-06	223	5	45	3	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	6	45	4	15	1	0	0	1	0	13	0	0	0	0	0	0	0	0	0
2006	7	11-Aug-06	223	7	45	4	5	1	0	0	1	0	3	0	0	0	0	0	0	0	0	0
2006	7	11-Aug-06	223	8	45	3	18	1	3	0	6	0	8	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	10	23	4	12	2	2	0	1	2	1	4	0	0	0	0	0	0	0	0
2006	7	TOTALS					-	80	-	0	28	2	27	4	0	0	0	0	0	2	0	0
2006	8	17-Aug-06	229	1	45	2	910	10	900	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	17-Aug-06	229	2	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	17-Aug-06	229	3	45	2	76	1	75	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	4	315	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 6d. Colville 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	8	16-Aug-06	228	5	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	6	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	7	0	2	8	2	0	0	2	0	1	2	1	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	8	315	2	9	5	0	0	0	0	0	0	4	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	10	0	2	4	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0
2006	8	TOTALS					-	19	976	0	4	0	2	3	5	0	0	0	0	0	1	0
2006	9	20-Aug-06	232	1	45	2	458	5	448	0	2	0	0	0	3	0	0	0	0	0	0	0
2006	9	20-Aug-06	232	2	45	2	151	2	142	0	4	0	0	0	3	0	0	0	0	0	0	0
2006	9	20-Aug-06	232	3	45	2	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	4	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	5	23	3	13	1	6	0	0	0	4	0	2	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	7	0	4	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	8	23	3	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	10	0	4	2		1					1								
2006	9	TOTALS					636	9	606	0	7	0	4	1	9	0	0	0	0	0	0	0
2006	10	24-Aug-06	236	1	45	1	421	0	421	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	24-Aug-06	236	2	45	1	133	1	123	0	0	0	0	0	9	0	0	0	0	0	0	0
2006	10	24-Aug-06	236	3	45	2	385	0	384	0	0	0	0	0	1	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	4	315	2	8	0	1	0	0	0	0	0	0	0	0	0	0	7	0	0
2006	10	22-Aug-06	234	5	315	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	6	315	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	7	315	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	8	315	2	44	11	30	0	0	0	0	0	3	0	0	0	0	0	0	0
2006	10	22-Aug-06	234	10	315	3	7	0	0	1	0	1	1	4	0	0	0	0	0	0	0	0
2006	10	TOTALS					-	13	959	1	3	1	1	4	13	0	0	0	0	7	0	0
2006	11	29-Aug-06	241	1	0	1	165	0	163	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	11	29-Aug-06	241	2	0	1	521	0	521	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	29-Aug-06	241	3	0	1	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	4	45	2	3	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0
2006	11	26-Aug-06	238	5	45	2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	7	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	8	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	26-Aug-06	238	10	0	2	9	0	0	0	3	0	0	1	0	0	0	0	0	0	5	0
2006	11	TOTALS					717	0	699	0	10	0	0	2	0	0	0	0	0	1	5	0
2006	12	2-Sep-06	245	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 6d. Colville 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	12	2-Sep-06	245	2	0	3	382	0	382	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	2-Sep-06	245	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	4	315	2	6	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0
2006	12	30-Aug-06	242	5	315	1	96	0	90	6	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	6	315	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	7	0	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	8	315	1	28	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	30-Aug-06	242	10	0	2	10	0	0	1	3	0	0	1	0	0	0	0	0	0	5	0
2006	12	TOTALS					525	0	504	9	3	0	0	1	0	0	0	0	0	3	5	0
2006		TOTAL FOR SPECIES						-	-	16	115	32	61	65	27	0	15	0	2	15	11	0

Appendix 7a. Sagavanirktok 2005 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	1	2-Aug-05	214	1	135	2	19	0	0	2	0	0	17	0	0
2005	1	2-Aug-05	214	2	135	1	33	0	0	21	0	2	10	0	0
2005	1	2-Aug-05	214	3	135	1	5	0	0	5	0	0	0	0	0
2005	1	2-Aug-05	214	4	90	1	15	0	15	0	0	0	0	0	0
2005	1	2-Aug-05	214	5	90	1	3	0	3	0	0	0	0	0	0
2005	1	2-Aug-05	214	6	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	2-Aug-05	214	7	90	0	3	3	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	8	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	2-Aug-05	214	9	90	1	18	0	0	0	0	18	0	0	0
2005	1	TOTALS					96	3	18	28	0	20	27	0	0
2005	2	5-Aug-05	217	1	45	1	13	0	0	13	0	0	0	0	0
2005	2	6-Aug-05	218	2	45	1	13	0	0	13	0	0	0	0	0
2005	2	6-Aug-05	218	3	45	1	52	0	0	0	52	0	0	0	0
2005	2	5-Aug-05	217	4	90	1	6	0	6	0	0	0	0	0	0
2005	2	5-Aug-05	217	5	45	1	5	0	5	0	0	0	0	0	0
2005	2	5-Aug-05	217	6	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	5-Aug-05	217	7	n/a	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	5-Aug-05	217	8	45	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	5-Aug-05	217	9	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	TOTALS					89	0	11	26	52	0	0	0	0
2005	3	8-Aug-05	220	1	225	1	8	0	0	7	0	1	0	0	0
2005	3	8-Aug-05	220	2	225	1	41	0	0	0	38	0	3	0	0
2005	3	8-Aug-05	220	3	225	2	36	0	0	0	36	0	0	0	0
2005	3	8-Aug-05	220	4	225	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	8-Aug-05	220	5	225	3	7	0	7	0	0	0	0	0	0
2005	3	8-Aug-05	220	6	225	3	2	0	2	0	0	0	0	0	0
2005	3	8-Aug-05	220	7	225	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	8-Aug-05	220	8	225	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	8-Aug-05	220	9	225	1	18	18	0	0	0	0	0	0	0
2005	3	TOTALS					112	18	9	7	74	1	3	0	0
2005	4	11-Aug-05	223	1	270	1	2	0	0	2	0	0	0	0	0
2005	4	11-Aug-05	223	2	270	2	11	0	0	0	11	0	0	0	0
2005	4	11-Aug-05	223	3	270	2	40	0	0	0	35	4	1	0	0
2005	4	11-Aug-05	223	4	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	11-Aug-05	223	5	270	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	11-Aug-05	223	6	270	3	1	0	0	0	0	1	0	0	0
2005	4	11-Aug-05	223	7	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	11-Aug-05	223	8	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	11-Aug-05	223	9	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	TOTALS					54	0	0	2	46	5	1	0	0
2005	5	14-Aug-05	226	1	90	4	4	0	0	4	0	0	0	0	0
2005	5	14-Aug-05	226	2	135	5	10	0	0	0	10	0	0	0	0
2005	5	14-Aug-05	226	3	135	5	7	0	0	0	7	0	0	0	0
2005	5	14-Aug-05	226	4	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	5	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Appendix 7a. Sagavanirktok 2005 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	5	14-Aug-05	226	6	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	7	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	8	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	14-Aug-05	226	9	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	TOTALS					21	0	0	4	17	0	0	0	0
2005	6	17-Aug-05	229	1	23	1	3	0	0	2	0	1	0	0	0
2005	6	17-Aug-05	229	2	90	1	3	0	0	0	2	0	1	0	0
2005	6	17-Aug-05	229	3	90	1	4	0	0	0	4	0	0	0	0
2005	6	17-Aug-05	229	4	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	17-Aug-05	229	5	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	17-Aug-05	229	6	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	17-Aug-05	229	7	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	17-Aug-05	229	8	0	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	17-Aug-05	229	9	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	TOTALS					10	0	0	2	6	1	1	0	0
2005	7	19-Aug-05	231	1	23	1	4	0	0	4	0	0	0	0	0
2005	7	19-Aug-05	231	2	90	1	7	0	0	0	4	3	0	0	0
2005	7	19-Aug-05	231	3	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	4	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	5	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	6	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	7	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	8	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	19-Aug-05	231	9	23	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	TOTALS					11	0	0	4	4	3	0	0	0
2005	8	22-Aug-05	234	1	90	2	1	0	0	0	0	0	1	0	0
2005	8	22-Aug-05	234	2	90	1	3	0	0	0	3	0	0	0	0
2005	8	22-Aug-05	234	3	90	1	4	0	0	0	4	0	0	0	0
2005	8	22-Aug-05	234	4	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	22-Aug-05	234	5	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	22-Aug-05	234	6	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	22-Aug-05	234	7	90	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	22-Aug-05	234	8	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	22-Aug-05	234	9	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	8	TOTALS					8	0	0	0	7	0	1	0	0
2005		TOTAL FOR SPECIES													

Appendix 7b. Sagavanirktok 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	27-Jul-06	208	1	0	3	73	71	0	2	0	0	0	0	0
2006	1	26-Jul-06	207	2	248	3	44	8	0	36	0	0	0	0	0
2006	1	26-Jul-06	207	3	270	3	15	0	0	4	11	0	0	0	0
2006	1	27-Jul-06	208	4	315	3	1	0	0	1	0	0	0	0	0
2006	1	26-Jul-06	207	5	248	3	41	41	0	0	0	0	0	0	0
2006	1	27-Jul-06	208	6	315	3	150	150	0	0	0	0	0	0	0
2006	1	27-Jul-06	208	7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	27-Jul-06	208	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	27-Jul-06	208	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	TOTALS					324	270	0	43	11	0	0	0	0
2006	2	30-Jul-06	211	1	0	2	20	2	0	5	0	13	0	0	0
2006	2	29-Jul-06	210	2	45	0	1	1	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	3	45	1	15	12	0	3	0	0	0	0	0
2006	2	30-Jul-06	211	4	45	2	3	2	0	1	0	0	0	0	0
2006	2	29-Jul-06	210	5	45	1	12	12	0	0	0	0	0	0	0
2006	2	30-Jul-06	211	6	0	2	65	12	0	16	0	37	0	0	0
2006	2	29-Jul-06	210	7	45	1	5	5	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	8	45	2	17	0	0	0	17	0	0	0	0
2006	2	29-Jul-06	210	9	45	1	5	5	0	0	0	0	0	0	0
2006	2	TOTALS					143	51	0	25	17	50	0	0	0
2006	3	2-Aug-06	214	1	45	1	18	0	0	11	0	7	0	0	0
2006	3	1-Aug-06	213	2	45	2	4	0	0	2	0	0	0	0	0
2006	3	1-Aug-06	213	3	225	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	2-Aug-06	214	4	23	1	11	9	0	2	0	0	0	0	0
2006	3	1-Aug-06	213	5	45	2	3	3	0	0	0	0	0	0	0
2006	3	2-Aug-06	214	6	0	1	190	0	0	30	0	138	22	0	0
2006	3	31-Jul-06	212	7	0	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	8	0	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	31-Jul-06	212	9	0	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	TOTALS					226	12	0	45	0	145	22	0	0
2006	4	5-Aug-06	217	1	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	4-Aug-06	216	2	0	3	500	0	0	10	0	485	5	0	0
2006	4	4-Aug-06	216	3	45	4	3	0	0	3	0	0	0	0	0
2006	4	4-Aug-06	216	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	5-Aug-06	217	5	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	5-Aug-06	217	6	0	5	49	3	0	12	0	34	0	0	0
2006	4	3-Aug-06	215	7	315	1	36	36	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	8	45	1	32	7	0	0	18	7	0	0	0
2006	4	3-Aug-06	215	9	0	1	88	88	0	0	0	0	0	0	0
2006	4	TOTALS					708	134	0	25	18	526	5	0	0
2006	5	8-Aug-06	220	1	180	4	211	0	0	1	0	210	0	0	0
2006	5	7-Aug-06	219	2	180	2	283	0	0	35	0	248	0	0	0

Appendix 7b. Sagavanirktok 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	5	7-Aug-06	219	3	203	2	4	0	0	4	0	0	0	0	0
2006	5	8-Aug-06	220	4	225	4	7	0	0	7	0	0	0	0	0
2006	5	7-Aug-06	219	5	180	2	2	0	0	2	0	0	0	0	0
2006	5	8-Aug-06	220	6	225	4	27	5	0	1	0	21	0	0	0
2006	5	6-Aug-06	218	7	180	3	15	15	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	8	203	4	6	6	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	9	180	3	33	14	0	0	0	19	0	0	0
2006	5	TOTALS					588	40	0	50	0	498	0	0	0
2006	6	11-Aug-06	223	1	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	10-Aug-06	222	2	45	2	119	0	0	2	0	117	0	0	0
2006	6	10-Aug-06	222	3	45	1	8	0	0	6	2	0	0	0	0
2006	6	11-Aug-06	223	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	10-Aug-06	222	5	45	2	18	18	0	0	0	0	0	0	0
2006	6	11-Aug-06	223	6	45	3	17	12	0	5	0	0	0	0	0
2006	6	9-Aug-06	221	7	45	1	1	1	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	8	180	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	9-Aug-06	221	9	180	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	TOTALS					163	31	0	13	2	117	0	0	0
2006	7	14-Aug-06	226	1	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	13-Aug-06	225	2	0	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	13-Aug-06	225	3	45	4	2	0	0	0	2	0	0	0	0
2006	7	14-Aug-06	226	4	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	13-Aug-06	225	5	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	14-Aug-06	226	6	45	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	12-Aug-06	224	7	0	4	2	2	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	8	45	4	6	4	0	0	2	0	0	0	0
2006	7	12-Aug-06	224	9	0	4	200	200	0	0	0	0	0	0	0
2006	7	TOTALS					210	206	0	0	4	0	0	0	0
2006	8	17-Aug-06	229	1	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	16-Aug-06	228	2	315	4	4	0	0	0	0	4	0	0	0
2006	8	16-Aug-06	228	3	315	3	1	0	0	0	1	0	0	0	0
2006	8	17-Aug-06	229	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	16-Aug-06	228	5	225	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	17-Aug-06	229	6	0	3	20	0	0	20	0	0	0	0	0
2006	8	15-Aug-06	227	7	180	1	49	49	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	8	270	2	1	2	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	9	225	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	TOTALS					75	51	0	20	1	4	0	0	0
2006	9	20-Aug-06	232	1	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	19-Aug-06	231	2	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2006	9	19-Aug-06	231	3	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2006	9	20-Aug-06	232	4	0	1	1	0	0	2	0	0	0	0	0

Appendix 7b. Sagavanirktok 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	9	19-Aug-06	231	5	45	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	20-Aug-06	232	6	0	1	1	1	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	7	315	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	18-Aug-06	230	8	0	4	2	2	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	9	0	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	TOTALS					4	3	0	2	0	0	0	0	0
2006		TOTAL FOR SPECIES													

Appendix 7c. Sagavanirktok 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	1	2-Aug-05	214	1	135	2	19	1	0	0	17	0	0	1	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	2	135	1	33	1	0	0	23	4	2	3	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	3	135	1	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	4	90	1	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	5	90	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	6	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	7	90	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	8	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	2-Aug-05	214	9	90	1	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	TOTALS					96	41	0	0	40	4	2	9	0	0	0	0	0	0	0	0
2005	2	5-Aug-05	217	1	45	1	13	2	0	0	9	0	0	2	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	2	45	1	13	0	0	0	3	0	1	9	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	3	45	1	52	0	2	0	0	1	0	49	0	0	0	0	0	0	0	0
2005	2	5-Aug-05	217	4	90	1	6	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1
2005	2	5-Aug-05	217	5	45	1	5	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
2005	2	5-Aug-05	217	6	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	5-Aug-05	217	7	n/a	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	5-Aug-05	217	8	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	5-Aug-05	217	9	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	TOTALS					89	2	2	0	12	1	1	60	0	0	10	0	0	0	0	1
2005	3	8-Aug-05	220	1	225	1	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	2	225	1	41	0	4	0	4	0	0	33	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	3	225	2	36	0	0	0	1	0	0	34	0	0	0	0	0	0	1	0
2005	3	8-Aug-05	220	4	225	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	5	225	3	7	1	2	0	0	0	0	4	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	6	225	3	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	3	8-Aug-05	220	7	225	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	8	225	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	8-Aug-05	220	9	225	1	18	3	0	0	11	0	0	4	0	0	0	0	0	0	0	0
2005	3	TOTALS					112	5	6	0	24	0	0	75	0	0	0	1	0	0	1	0
2005	4	11-Aug-05	223	1	270	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2005	4	11-Aug-05	223	2	270	2	11	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0
2005	4	11-Aug-05	223	3	270	2	40	0	0	0	2	0	0	35	0	0	0	0	0	0	3	0
2005	4	11-Aug-05	223	4	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 7c. Sagavanirktok 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	4	11-Aug-05	223	5	270	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	11-Aug-05	223	6	270	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	4	11-Aug-05	223	7	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	11-Aug-05	223	8	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	11-Aug-05	223	9	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	TOTALS					54	0	5	0	4	0	0	41	0	0	0	1	0	0	3	0
2005	5	14-Aug-05	226	1	90	4	4	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	2	135	5	10	0	0	0	1	0	0	9	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	3	135	5	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	4	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	5	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	6	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	7	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	8	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	14-Aug-05	226	9	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	TOTALS					21	0	0	0	4	0	0	17	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	1	23	1	3	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	2	90	1	3	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	3	90	1	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	4	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	5	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	6	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	7	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	17-Aug-05	229	9	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	TOTALS					10	0	0	0	2	1	0	7	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	1	23	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	2	90	1	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	3	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	4	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	5	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	6	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	7	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 7c. Sagavanirktok 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2005	7	19-Aug-05	231	8	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	19-Aug-05	231	9	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	TOTALS					11	0	0	0	4	0	0	7	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	1	90	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	2	90	1	3	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0
2005	8	22-Aug-05	234	3	90	1	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	4	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	5	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	6	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	7	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	8	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	22-Aug-05	234	9	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	TOTALS					8	0	0	0	1	0	0	5	0	0	0	0	0	0	2	0
2005		TOTAL FOR SPECIES						48	13	0	91	6	3	221	0	0	10	2	0	0	6	1

Appendix 7d. Sagavanirktok 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2006	1	27-Jul-06	208	1	0	3	73	73	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	26-Jul-06	207	2	248	3	44	42	0	0	0	0	1	1	0	0	0	0	0	0	0
2006	1	26-Jul-06	207	3	270	3	15	11	0	0	0	0	0	0	0	0	0	0	0	4	0
2006	1	27-Jul-06	208	4	315	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	26-Jul-06	207	5	248	3	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	27-Jul-06	208	6	315	3	150	116	1	0	0	0	33	0	0	0	0	0	0	0	0
2006	1	27-Jul-06	208	7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	27-Jul-06	208	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	27-Jul-06	208	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	TOTALS					324	283	2	0	0	0	34	1	0	0	0	0	0	4	0
2006	2	30-Jul-06	211	1	0	2	20	10	1	0	0	0	5	4	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	2	45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	3	45	1	15	12	0	0	1	2	0	0	0	0	0	0	0	0	0
2006	2	30-Jul-06	211	4	45	2	3	2	0	0	0	0	0	0	0	0	0	0	0	1	0
2006	2	29-Jul-06	210	5	45	1	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	30-Jul-06	211	6	0	2	65	52	0	0	0	0	9	0	0	0	0	0	0	4	0
2006	2	29-Jul-06	210	7	45	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	8	45	2	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	29-Jul-06	210	9	45	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	TOTALS					143	116	1	0	1	2	14	4	0	0	0	0	0	5	0
2006	3	2-Aug-06	214	1	45	1	18	11	2	0	3	0	2	0	0	0	0	0	0	0	0
2006	3	1-Aug-06	213	2	45	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	1-Aug-06	213	3	225	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	2-Aug-06	214	4	23	1	11	9	0	0	1	0	0	1	0	0	0	0	0	0	0
2006	3	1-Aug-06	213	5	45	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	2-Aug-06	214	6	0	1	190	99	0	53	22	0	16	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	7	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	8	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	31-Jul-06	212	9	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	TOTALS					226	126	2	53	26	0	18	1	0	0	0	0	0	0	0
2006	4	5-Aug-06	217	1	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	4-Aug-06	216	2	0	3	500	290	80	0	4	1	114	11	0	0	0	0	0	0	0

Appendix 7d. Sagavanirktok 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2006	4	4-Aug-06	216	3	45	4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	4-Aug-06	216	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	5-Aug-06	217	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	5-Aug-06	217	6	0	5	49	33	16	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	7	315	1	36	36	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	8	45	1	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	3-Aug-06	215	9	0	1	88	88	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	TOTALS					708	482	96	0	4	1	114	11	0	0	0	0	0	0	0
2006	5	8-Aug-06	220	1	180	4	211	9	200	0	0	0	0	2	0	0	0	0	0	0	0
2006	5	7-Aug-06	219	2	180	2	283	160	6	0	12	0	96	9	0	0	0	0	0	0	0
2006	5	7-Aug-06	219	3	203	2	4	2	0	0	2	0	0	0	0	0	0	0	0	0	0
2006	5	8-Aug-06	220	4	225	4	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	7-Aug-06	219	5	180	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	8-Aug-06	220	6	225	4	27	25	2	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	7	180	3	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	8	203	4	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	6-Aug-06	218	9	180	3	33	27	0	0	3	0	0	3	0	0	0	0	0	0	0
2006	5	TOTALS					588	253	208	0	17	0	96	14	0	0	0	0	0	0	0
2006	6	11-Aug-06	223	1	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	10-Aug-06	222	2	45	2	119	51	2	0	5	0	59	2	0	0	0	0	0	0	0
2006	6	10-Aug-06	222	3	45	1	8	0	0	0	2	0	0	0	0	0	0	0	0	6	0
2006	6	11-Aug-06	223	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	10-Aug-06	222	5	45	2	18	14	0	0	0	1	0	3	0	0	0	0	0	0	0
2006	6	11-Aug-06	223	6	45	3	17	5	12	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	7	45	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	8	180	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	9-Aug-06	221	9	180	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	TOTALS					163	71	14	0	7	1	59	5	0	0	0	0	0	0	6	0
2006	7	14-Aug-06	226	1	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	13-Aug-06	225	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	13-Aug-06	225	3	45	4	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
2006	7	14-Aug-06	226	4	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 7d. Sagavanirktok 2006 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2006	7	13-Aug-06	225	5	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	14-Aug-06	226	6	45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	7	0	4	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	8	45	4	6	3	1	0	0	0	0	2	0	0	0	0	0	0	0
2006	7	12-Aug-06	224	9	0	4	200	0	200	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	TOTALS					210	3	203	0	0	0	0	2	0	0	0	0	0	2	0
2006	8	17-Aug-06	229	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	2	315	4	4	0	1	0	3	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	3	315	3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2006	8	17-Aug-06	229	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	16-Aug-06	228	5	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	17-Aug-06	229	6	0	3	20	5	12	0	0	0	3	0	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	7	180	1	49	2	47	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	8	270	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	15-Aug-06	227	9	225	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	TOTALS					75	8	60	0	3	0	3	0	0	0	0	0	0	1	0
2006	9	20-Aug-06	232	1	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	2	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	3	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	20-Aug-06	232	4	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
2006	9	19-Aug-06	231	5	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	20-Aug-06	232	6	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	7	315	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	8	0	4	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	18-Aug-06	230	9	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	TOTALS					4	0	2	0	2	0	0	1	0	0	0	0	0	0	0
2006		TOTAL FOR SPECIES						-	588	53	60	4	338	39	0	0	0	0	0	18	0

Appendix 8a. Okpilak 2005 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	1	3-Aug-05	215	1	ne	3	51	51	0	0	0	0	0	0	0
2005	1	3-Aug-05	215	2	ne	4	63	63	0	0	0	0	0	0	0
2005	1	3-Aug-05	215	3	ne	4	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	4-Aug-05	216	4	ne	2	15	0	0	0	0	15	0	0	0
2005	1	4-Aug-05	216	5	.	.	18	0	0	1	0	17	0	0	0
2005	1	3-Aug-05	215	6	ne	3	54	54	0	0	0	0	0	0	0
2005	1	4-Aug-05	216	7	ne	3	600	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	4-Aug-05	216	8	ne	3	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	4-Aug-05	216	9	ne	2	718	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	4-Aug-05	216	10	ne	2	53	53	0	0	0	0	0	0	0
2005	1	TOTALS					-	221	0	1	0	32	0	0	0
2005	2	6-Aug-05	218	1	ne	2	8	8	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	2	ne	2	52	52	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	3	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	4	ne	3	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	5	ne	3	16	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	6	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	7	ne	2	8	0	8	0	0	0	0	0	0
2005	2	6-Aug-05	218	8	ne	2	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	9	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	6-Aug-05	218	10	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	2	TOTALS					89	60	8	0	0	0	0	0	0
2005	3	10-Aug-05	222	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	3	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	4	ne	2	4	0	0	4	0	0	0	0	0
2005	3	10-Aug-05	222	5	e	3	5	0	0	4	0	1	0	0	0
2005	3	10-Aug-05	222	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	7	ne	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	8	ne	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	9	ne	4	1	0	1	0	0	0	0	0	0
2005	3	10-Aug-05	222	10	ne	2	28	20	0	8	0	0	0	0	0
2005	3	TOTALS					38	20	1	16	0	1	0	0	0
2005	4	13-Aug-05	225	1	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	2	ne	3	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	3	ne	3	16	16	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	4	ne	2	1	0	0	1	0	0	0	0	0
2005	4	13-Aug-05	225	5	ne	2	3	0	0	3	0	0	0	0	0
2005	4	13-Aug-05	225	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	7	e	2	1	0	1	0	0	0	0	0	0
2005	4	13-Aug-05	225	8	e	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	9	e	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	10	ne	2	35	0	0	35	0	0	0	0	0

Appendix 8a. Okpilak 2005 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2005	4	TOTALS					61	16	1	39	0	0	0	0	0
2005	5	18-Aug-05	230	1	n	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	18-Aug-05	230	2	ne	3	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	18-Aug-05	230	3	ne	3	25	25	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	4	ne	3	28	0	0	28	0	0	0	0	0
2005	5	18-Aug-05	230	5	ne	3	1	0	0	1	0	0	0	0	0
2005	5	18-Aug-05	230	6	ne	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	18-Aug-05	230	7	nw	2	4	0	4	0	0	0	0	0	0
2005	5	18-Aug-05	230	8	ne	2	4	0	4	0	0	0	0	0	0
2005	5	18-Aug-05	230	9	n	2	12	0	12	0	0	0	0	0	0
2005	5	18-Aug-05	230	10	ne	4	2	2	0	0	0	0	0	0	0
2005	5	TOTALS					76	27	20	29	0	0	0	0	0
2005	6	21-Aug-05	233	1	n	1	113	113	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	2	n	1	177	177	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	3	.	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	21-Aug-05	233	4	.	0	6	0	0	6	0	0	0	0	0
2005	6	21-Aug-05	233	5	.	0	2	0	0	2	0	0	0	0	0
2005	6	21-Aug-05	233	6	n	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	21-Aug-05	233	7	w	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	6	21-Aug-05	233	8	w	1	2	0	2	0	0	0	0	0	0
2005	6	21-Aug-05	233	9	n	1	4	4	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	10	.	0	1	1	0	0	0	0	0	0	0
2005	6	TOTALS					305	295	2	8	0	0	0	0	0
2005	7	24-Aug-05	236	1	w	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	2	w	1	49	49	0	0	0	0	0	0	0
2005	7	24-Aug-05	236	3	w	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	TOTALS					49	49	0	0	0	0	0	0	0
2005		TOTAL FOR SPECIES													

Appendix 8b. Okpilak 2006 transect data by habitat.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	1	20-Jul-06	201	1	.	0	4	0	0	1	0	1	2	0	0
2006	1	20-Jul-06	201	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	4	.	0	1	0	0	0	1	0	0	0	0
2006	1	20-Jul-06	201	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	7	n/a	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	8	45	1	1	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	9	45	1	2	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	10	n/a	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	TOTALS					8	0	0	1	1	1	2	0	0
2006	2	23-Jul-06	204	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	2	90	2	55	54	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	3	90	2	43	43	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	4	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	5	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	7	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	8	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	9	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	10	90	2	6	3	0	3	0	0	0	0	0
2006	2	TOTALS					104	100	0	3	0	0	0	0	0
2006	3	26-Jul-06	207	1	45	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	26-Jul-06	207	2	.	0	26	24	0	0	0	0	0	2	0
2006	3	26-Jul-06	207	3	45	1	18	18	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	4	.	0	0	0	0	1	0	0	0	0	0
2006	3	26-Jul-06	207	5	.	0	1	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	26-Jul-06	207	7	0	1	1	0	0	0	0	0	0	1	0
2006	3	26-Jul-06	207	8	.	0	1	0	1	0	0	0	0	0	0
2006	3	26-Jul-06	207	9	.	0	1	0	2	0	0	0	0	0	0
2006	3	26-Jul-06	207	10	.	0	14	6	0	0	0	7	1	0	0
2006	3	TOTALS					62	48	3	1	0	7	1	3	0
2006	4	29-Jul-06	210	1	45	2	24	24	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	2	45	3	3	3	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	3	45	2	5	5	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	4	90	2	2	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	5	90	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	29-Jul-06	210	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	29-Jul-06	210	7	45	2	7	0	7	0	0	0	0	0	0
2006	4	29-Jul-06	210	8	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	29-Jul-06	210	9	45	2	6	0	6	0	0	0	0	0	0
2006	4	29-Jul-06	210	10	45	2	31	0	0	0	16	0	15	0	0
2006	4	TOTALS					78	32	13	0	16	0	15	0	0
2006	5	1-Aug-06	213	1	315	4	6	6	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	2	315	3	1	1	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	3	315	4	5	5	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Appendix 8b. Okpilak 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	5	1-Aug-06	213	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	7	315	3	2	0	0	0	0	0	0	1	1
2006	5	1-Aug-06	213	8	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	9	315	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	10	315	3	5	0	0	5	0	2	0	0	0
2006	5	TOTALS					19	12	0	5	0	2	0	1	1
2006	6	4-Aug-06	216	1	90	4	2	2	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	2	90	3	4	4	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	3	90	3	27	26	0	0	0	0	0	0	1
2006	6	4-Aug-06	216	4	90	3	63	26	0	24	0	12	1	0	0
2006	6	4-Aug-06	216	5	45	3	35	28	0	1	0	6	0	0	0
2006	6	4-Aug-06	216	6	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	6	4-Aug-06	216	7	45	3	3	0	0	0	0	0	0	0	3
2006	6	4-Aug-06	216	8	45	3	21	0	9	0	0	0	0	12	0
2006	6	4-Aug-06	216	9	45	3	1	0	1	0	0	0	0	0	0
2006	6	4-Aug-06	216	10	45	3	36	20	0	6	0	6	4	0	0
2006	6	TOTALS					192	106	10	31	0	24	5	12	4
2006	7	7-Aug-06	219	1	45	1	214	13	31	0	0	0	0	0	170
2006	7	7-Aug-06	219	2	45	3	17	17	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	3	45	4	37	37	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	4	45	3	24	0	0	3	0	20	1	0	0
2006	7	7-Aug-06	219	5	270	2	49	0	0	23	9	17	0	0	0
2006	7	7-Aug-06	219	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	7	7-Aug-06	219	7	45	2	106	0	66	0	0	0	0	0	40
2006	7	7-Aug-06	219	8	45	2	3	2	1	0	0	0	0	0	0
2006	7	7-Aug-06	219	9	45	1	196	0	31	0	0	0	0	0	165
2006	7	7-Aug-06	219	10	315	3	20	20	0	0	0	0	0	0	0
2006	7	TOTALS					666	89	129	26	9	37	1	0	375
2006	8	10-Aug-06	222	1	270	0	20	20	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	2	.	0	83	83	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	3	.	0	68	68	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	4	315	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	10-Aug-06	222	5	315	1	19	0	0	0	0	19	0	0	0
2006	8	10-Aug-06	222	6	.	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	8	10-Aug-06	222	7	270	0	23	0	14	0	0	0	0	18	0
2006	8	10-Aug-06	222	8	0	1	4	0	0	0	0	0	0	4	0
2006	8	10-Aug-06	222	9	45	1	19	0	0	0	0	0	0	0	19
2006	8	10-Aug-06	222	10	270	0	63	63	0	0	0	0	0	0	0
2006	8	TOTALS					299	234	14	0	0	19	0	22	19
2006	9	13-Aug-06	225	1	45	4	32	32	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	2	45	3	66	66	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	3	45	4	28	28	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	4	90	1	3	0	0	0	3	0	0	0	0
2006	9	13-Aug-06	225	5	90	3	2	0	0	0	1	0	1	0	0
2006	9	13-Aug-06	225	6	45	3	138	138	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	7	45	5	18	0	18	0	0	0	0	0	0
2006	9	13-Aug-06	225	8	45	5	9	0	5	0	0	0	0	4	0

Appendix 8b. Okpilak 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	9	13-Aug-06	225	9	45	5	10	0	0	0	0	0	0	0	10
2006	9	13-Aug-06	225	10	45	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	9	TOTALS					306	264	23	0	4	0	1	4	10
2006	10	16-Aug-06	228	1	315	3	1	1	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	2	315	3	5	5	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	3	315	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	16-Aug-06	228	4	315	3	12	0	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	5	315	2	7	0	0	2	0	3	2	0	0
2006	10	16-Aug-06	228	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	16-Aug-06	228	7	315	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	16-Aug-06	228	8	315	4	22	0	7	0	0	0	0	15	0
2006	10	16-Aug-06	228	9	315	4	4	0	0	0	0	0	0	4	0
2006	10	16-Aug-06	228	10	315	4	6	6	0	0	0	0	0	0	0
2006	10	TOTALS					57	12	7	2	0	3	2	19	0
2006	11	19-Aug-06	231	1	45	4	3	3	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	2	45	4	39	39	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	3	45	4	37	37	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	4	45	4	6	0	0	0	0	6	0	0	0
2006	11	19-Aug-06	231	5	45	4	4	0	0	0	0	0	4	0	0
2006	11	19-Aug-06	231	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	19-Aug-06	231	7	90	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	19-Aug-06	231	8	90	4	3	0	0	0	0	3	0	0	0
2006	11	19-Aug-06	231	9	90	4	5	0	0	0	0	0	1	0	5
2006	11	19-Aug-06	231	10	90	4	1	0	0	0	0	0	0	0	0
2006	11	TOTALS					98	79	0	0	0	9	5	0	5
2006	12	22-Aug-06	234	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	4	270	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	5	270	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	7	315	4	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	8	315	4	1	0	1	0	0	0	0	0	0
2006	12	22-Aug-06	234	9	315	4	5	0	0	0	0	0	0	5	0
2006	12	22-Aug-06	234	10	270	5	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	TOTALS					6	0	1	0	0	0	0	5	0
2006	13	25-Aug-06	237	1	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	2	45	2	6	6	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	3	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	5	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	7	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	8	45	2	1	0	0	0	0	0	0	1	0
2006	13	25-Aug-06	237	9	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	TOTALS					7	6	0	0	0	0	0	1	0
2006	14	28-Aug-06	240	1	270	3	2	2	0	0	0	0	0	0	0

Appendix 8b. Okpilak 2006 transect data by habitat.															
Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total birds	Mudflat	Gbeach	Smarsh	Tundra	Pedge	Pond	Lagoon	Ocean
2006	14	28-Aug-06	240	2	270	3	12	12	0	0	0	0	0	0	0
2006	14	28-Aug-06	240	3	270	3	11	11	0	0	0	0	0	0	0
2006	14	28-Aug-06	240	4	270	3	6	0	0	3	3	0	0	0	0
2006	14	28-Aug-06	240	5	270	3	6	0	0	0	5	1	0	0	0
2006	14	28-Aug-06	240	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	28-Aug-06	240	7	270	3	8	0	8	0	0	0	0	0	0
2006	14	28-Aug-06	240	8	270	3	4	0	0	0	0	0	0	4	0
2006	14	28-Aug-06	240	9	270	3	2	0	0	0	0	0	0	2	0
2006	14	28-Aug-06	240	10	270	3	1	1	0	0	0	0	0	0	0
2006	14	TOTALS					52	26	8	3	8	1	0	6	0
2006	15	31-Aug-06	243	1	45	2	6	6	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	2	45	2	110	110	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	3	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	4	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	5	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	6	45	2	1	1	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	7	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	8	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	9	45	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	15	31-Aug-06	243	10	90	2	6	6	0	0	0	0	0	0	0
2006	15	TOTALS					123	123	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	1	270	1	9	9	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	2	270	1	51	48	0	0	0	0	0	3	0
2006	16	4-Sep-06	247	3	.	0	15	13	0	0	0	0	0	2	0
2006	16	4-Sep-06	247	4	270	1	9	0	0	0	0	9	0	0	0
2006	16	4-Sep-06	247	5	270	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	7	.	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	8	.	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	9	.	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	10	.	0	2	2	0	0	0	0	0	0	0
2006	16	TOTALS					86	72	0	0	0	9	0	5	0
2006		TOTAL FOR SPECIES													

Appendix 8c. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2005	1	3-Aug-05	215	1	ne	3	51	45	1	5	0	0	0	0	0	0	0	0	0	0	0
2005	1	3-Aug-05	215	2	ne	4	63	63	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	3-Aug-05	215	3	ne	4	80	79	1	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	4-Aug-05	216	4	ne	2	15	0	0	0	10	0	5	0	0	0	0	0	0	0	0
2005	1	4-Aug-05	216	5	.	.	18	8	0	0	4	0	3	3	0	0	0	0	0	0	0
2005	1	3-Aug-05	215	6	ne	3	54	13	0	40	0	0	0	0	0	0	0	1	0	0	0
2005	1	4-Aug-05	216	7	ne	3	600	4	0	0	596	0	0	0	0	0	0	0	0	0	0
2005	1	4-Aug-05	216	8	ne	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2005	1	4-Aug-05	216	9	ne	2	718	1	0	0	715	0	0	0	0	0	2	0	0	0	0
2005	1	4-Aug-05	216	10	ne	2	53	53	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	TOTALS					-	266	2	45	-	0	8	3	0	0	2	1	0	0	0
2005	2	6-Aug-05	218	1	ne	2	8	1	1	0	0	0	0	0	0	0	6	0	0	0	0
2005	2	6-Aug-05	218	2	ne	2	52	52	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	3	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	4	ne	3	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0
2005	2	6-Aug-05	218	5	ne	3	16	4	0	0	1	2	2	7	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	6	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	7	ne	2	8	0	0	0	0	0	0	0	0	0	8	0	0	0	0
2005	2	6-Aug-05	218	8	ne	2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	9	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	6-Aug-05	218	10	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	TOTALS					89	57	1	0	4	2	2	7	0	0	16	0	0	0	0
2005	3	10-Aug-05	222	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	3	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	10-Aug-05	222	4	ne	2	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0
2005	3	10-Aug-05	222	5	e	3	5	0	0	0	0	0	1	4	0	0	0	0	0	0	0
2005	3	10-Aug-05	222	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	3	10-Aug-05	222	7	ne	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	10-Aug-05	222	8	ne	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	10-Aug-05	222	9	ne	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	3	10-Aug-05	222	10	ne	2	28	27	1	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	TOTALS					38	27	1	0	0	0	1	8	0	0	1	0	0	0	0

Appendix 8c. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2005	4	13-Aug-05	225	1	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	2	ne	3	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	3	ne	3	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	4	ne	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2005	4	13-Aug-05	225	5	ne	2	3	0	0	0	1	0	0	2	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	4	13-Aug-05	225	7	e	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	4	13-Aug-05	225	8	e	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	9	e	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	13-Aug-05	225	10	ne	2	35	25	0	0	0	0	0	0	0	0	0	0	4	6	0
2005	4	TOTALS					61	46	0	0	1	0	0	2	0	0	1	0	5	6	0
2005	5	18-Aug-05	230	1	n	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	2	ne	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	3	ne	3	25	24	0	1	0	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	4	ne	3	28	0	0	0	0	0	0	6	0	0	0	0	0	17	5
2005	5	18-Aug-05	230	5	ne	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	6	ne	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	7	nw	2	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	8	ne	2	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2005	5	18-Aug-05	230	9	n	2	12	0	0	0	8	0	0	0	0	4	0	0	0	0	0
2005	5	18-Aug-05	230	10	ne	4	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0
2005	5	TOTALS					76	25	0	2	16	0	0	7	0	4	0	0	0	17	5
2005	6	21-Aug-05	233	1	n	1	113	1	67	0	0	0	0	0	0	45	0	0	0	0	0
2005	6	21-Aug-05	233	2	n	1	177	6	123	0	6	0	0	0	0	42	0	0	0	0	0
2005	6	21-Aug-05	233	3	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	4	.	0	6	0	0	0	0	0	0	1	0	0	0	0	0	4	1
2005	6	21-Aug-05	233	5	.	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	6	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	7	w	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	8	w	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	9	n	1	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2005	6	21-Aug-05	233	10	.	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2005	6	TOTALS					305	7	190	5	8	0	0	3	0	87	0	0	0	4	1

Appendix 8c. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO
2005	7	24-Aug-05	236	1	w	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	24-Aug-05	236	2	w	1	49	5	33	0	0	0	0	0	0	11	0	0	0	0	0
2005	7	24-Aug-05	236	3	w	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	24-Aug-05	236	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	24-Aug-05	236	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	7	TOTALS					49	5	33	0	0	0	0	0	0	11	0	0	0	0	0
2005		TOTAL FOR SPECIES						433	227	52	-	2	11	30	0	102	20	1	5	27	6

Appendix 8d. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	1	20-Jul-06	201	1	.	0	4	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	4	.	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	1	20-Jul-06	201	7	n/a	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	8	45	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	9	45	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	1	20-Jul-06	201	10	n/a	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	TOTALS					8	1	0	0	6	0	0	1	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	2	90	2	55	54	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	3	90	2	43	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	4	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	5	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	23-Jul-06	204	7	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	8	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	9	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	23-Jul-06	204	10	90	2	6	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2006	2	TOTALS					104	102	0	0	1	0	0	0	0	1	0	0	0	0	0	0
2006	3	26-Jul-06	207	1	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	2	.	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	3	45	1	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	4	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	5	.	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	3	26-Jul-06	207	7	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	8	.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2006	3	26-Jul-06	207	9	.	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	26-Jul-06	207	10	.	0	14	14	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	TOTALS					62	61	0	1	0	0	0	1	0	0	0	0	0	0	0	1
2006	4	29-Jul-06	210	1	45	2	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	2	45	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	3	45	2	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 8d. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	4	29-Jul-06	210	4	90	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	5	90	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	4	29-Jul-06	210	7	45	2	7	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	8	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	9	45	2	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	29-Jul-06	210	10	45	2	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	4	TOTALS					78	72	0	0	6	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	1	315	4	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	2	315	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	3	315	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	5	1-Aug-06	213	7	315	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	8	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	9	315	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	1-Aug-06	213	10	315	3	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	TOTALS					19	17	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	1	90	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	2	90	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	3	90	3	27	26	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	4	90	3	63	62	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	5	45	3	35	33	0	0	0	0	0	2	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	6	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	7	45	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	8	45	3	21	7	0	0	12	0	0	0	0	2	0	0	0	0	0	0
2006	6	4-Aug-06	216	9	45	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	4-Aug-06	216	10	45	3	36	32	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2006	6	TOTALS					192	167	0	0	21	0	0	2	0	2	0	0	0	0	0	0
2006	7	7-Aug-06	219	1	45	1	214	21	0	23	170	0	0	0	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	2	45	3	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	3	45	4	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	4	45	3	24	19	0	0	1	0	0	4	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	5	270	2	49	48	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Appendix 8d. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	7	7-Aug-06	219	7	45	2	106	58	0	8	40	0	0	0	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	8	45	2	3	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	9	45	1	196	8	0	23	165	0	0	0	0	0	0	0	0	0	0	0
2006	7	7-Aug-06	219	10	315	3	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	TOTALS					666	230	0	54	376	0	0	6	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	1	270	0	20	20	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	2	.	0	83	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	3	.	0	68	58	0	0	0	0	0	8	0	0	0	0	0	2	0	0
2006	8	10-Aug-06	222	4	315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	5	315	1	19	1	0	0	0	0	7	11	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	6	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	7	270	0	23	5	0	0	18	0	0	9	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	8	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	9	45	1	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0
2006	8	10-Aug-06	222	10	270	0	63	61	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	TOTALS					299	228	0	2	41	0	7	28	0	0	0	0	0	2	0	0
2006	9	13-Aug-06	225	1	45	4	32	25	0	0	0	0	0	0	0	0	0	0	0	7	0	0
2006	9	13-Aug-06	225	2	45	3	66	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	3	45	4	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	4	90	1	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	5	90	3	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	6	45	3	138	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	7	45	5	18	0	0	0	0	0	0	0	0	4	14	0	0	0	0	0
2006	9	13-Aug-06	225	8	45	5	9	0	0	0	4	0	0	0	0	0	5	0	0	0	0	0
2006	9	13-Aug-06	225	9	45	5	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0
2006	9	13-Aug-06	225	10	45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	TOTALS					306	257	0	0	15	0	1	3	0	4	19	0	0	7	0	0
2006	10	16-Aug-06	228	1	315	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	2	315	3	5	3	0	0	0	0	0	0.00	2	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	3	315	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	4	315	3	12	0	0	0	1	0	0	0	0	0	0	0	0	11	0	0
2006	10	16-Aug-06	228	5	315	2	7	0	0	0	4	0	1	2	0	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	10	16-Aug-06	228	7	315	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	16-Aug-06	228	8	315	4	22	0	0	0	15	0	0	0	0	0	7	0	0	0	0	0
2006	10	16-Aug-06	228	9	315	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0

Appendix 8d. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	10	16-Aug-06	228	10	315	4	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	TOTALS					57	10	0	0	24	0	1	2	2	0	7	0	0	11	0	0
2006	11	19-Aug-06	231	1	45	4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	2	45	4	39	35	0	4	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	3	45	4	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	4	45	4	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0
2006	11	19-Aug-06	231	5	45	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	11	19-Aug-06	231	7	90	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	8	90	4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	9	90	4	5	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0
2006	11	19-Aug-06	231	10	90	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	11	TOTALS					98	78	0	4	9	1	0	0	0	0	0	0	0	6	0	0
2006	12	22-Aug-06	234	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	4	270	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	22-Aug-06	234	5	270	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	22-Aug-06	234	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	12	22-Aug-06	234	7	315	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	22-Aug-06	234	8	315	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2006	12	22-Aug-06	234	9	315	4	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
2006	12	22-Aug-06	234	10	270	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	TOTALS					6	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0
2006	13	25-Aug-06	237	1	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	2	45	2	6	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0
2006	13	25-Aug-06	237	3	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	5	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	25-Aug-06	237	7	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	8	45	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	9	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13	25-Aug-06	237	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	13	TOTALS					7	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0
2006	14	28-Aug-06	240	1	270	3	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0

Appendix 8d. Okpilak 2005 transect data by species.

Year	SurveyPd	Date	JulDate	Transect	WindDir	Beaufort	Total	SESA	DUNL	BBPL	RNPH	REPH	STSA	PESA	WESA	SAND	RUTU	BASA	BBSA	AMGP	LBDO	SEPL
2006	14	28-Aug-06	240	2	270	3	12	0	0	0	11	0	0	0	0	1	0	0	0	0	0	0
2006	14	28-Aug-06	240	3	270	3	11	1	0	2	0	0	0	3	0	4	0	0	0	1	0	0
2006	14	28-Aug-06	240	4	270	3	6	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0
2006	14	28-Aug-06	240	5	270	3	6	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0
2006	14	28-Aug-06	240	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	14	28-Aug-06	240	7	270	3	8	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0
2006	14	28-Aug-06	240	8	270	3	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
2006	14	28-Aug-06	240	9	270	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2006	14	28-Aug-06	240	10	270	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2006	14	TOTALS					52	1	0	3	13	4	0	11	1	9	6	0	0	4	0	0
2006	15	31-Aug-06	243	1	45	2	6	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0
2006	15	31-Aug-06	243	2	45	2	110	2	84	0	2	0	0	2	0	20	0	0	0	0	0	0
2006	15	31-Aug-06	243	3	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	4	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	5	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	6	45	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2006	15	31-Aug-06	243	7	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	8	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	9	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	31-Aug-06	243	10	90	2	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
2006	15	TOTALS					123	2	84	6	2	0	0	2	0	27	0	0	0	0	0	0
2006	16	4-Sep-06	247	1	270	1	9	0	3	4	2	0	0	0	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	2	270	1	51	0	41	0	4	0	0	1	0	5	0	0	0	0	0	0
2006	16	4-Sep-06	247	3	.	0	15	0	0	8	2	0	0	5	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	4	270	1	9	0	0	0	0	0	0	6	0	0	0	0	0	3	0	0
2006	16	4-Sep-06	247	5	270	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	16	4-Sep-06	247	7	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	8	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	9	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	16	4-Sep-06	247	10	.	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2006	16	TOTALS					86	0	44	14	8	0	0	12	0	5	0	0	0	3	0	0
2006		TOTAL FOR SPECIES						-	128	84	529	5	9	68	5	52	33	0	0	33	0	

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.