



2008 Northwestern Fjord Ground-Nesting Marine Bird Inventory Final Report



Meg Hahr
Kenai Fjords National Park
P.O. Box 1727
Seward, AK 99664

February 2009

File Name: HahrM_2008_NWGround-nesting_Bird_Inventory_Report.docx

Recommended Citation:

Hahr, M. 2009. 2008 Northwestern Fjord Ground-Nesting Marine Bird Inventory Final Report. Kenai Fjords National Park, U.S.D.I. National Park Service, Seward, AK. 14pp.

Topics:

Seabirds, Marine Birds, Shorebirds

Theme Keywords:

Shorebirds, Seabirds, Abundance, Distribution, Kenai Fjords National Park, Semipalmated Plover, *Charadrius semipalmatus*, Black Oystercatcher, *Haematopus bachmani*

Place name Keywords:

Alaska, Kenai Fjords National Park, Gulf of Alaska, Harris Bay, Northwestern Fjord

Acronyms:

NPS	National Park Service
KEFJ	Kenai Fjords National Park
GPS	Global Positioning System

Cover: Photograph of Semipalmated Plover (*Charadrius semipalmatus*) nest in Northwestern Fjord.

Abstract

We surveyed for ground-nesting marine birds and their nests in Northwestern Fjord between 24 and 29 June, 2008. All known camping beaches were surveyed by observers walking the length of the particular coastline segment. Along areas where camping was not known to occur but considered possible, we surveyed the shoreline from a distance of 5 – 10 m using a sea kayak. All nest locations and other site data were recorded using a handheld GPS unit, and all nest location and bird observation data were incorporated into the park's GIS for use with other natural and cultural resource and visitor use datasets. We documented the distribution of six active Black Oystercatcher (*Haematopus bachmani*) nests and three active Semipalmated Plover (*Charadrius semipalmatus*) nests. Ground-nesting birds were found on all of the camping beaches in Northwestern Fjord except Redstone Glacier Beach and the small beach near Southwestern Glacier Beach. This information provides valuable baseline data that may be used to conduct a cumulative assessment of the overall extent of impacts to ecological and cultural resources and the visitor experience in the park's coastal backcountry.



Above: Photograph of KEFJ Ecologist conducting ground-nesting marine bird inventory in Northwestern Lagoon, Kenai Fjords National Park.

Introduction

Numerous species of ground-nesting marine birds occur in Kenai Fjords National Park (KEFJ) but have never been systematically inventoried. The Black Oystercatcher (*Haematopus bachmani*) population has been intensively studied since 1998 (Morse 2005, Morse et al. 2006), but little historical data exists on the distribution of other ground-nesting species in the park. Ground-nesting marine birds are vulnerable to human disturbance especially during the breeding period. Documented effects of human disturbance on nesting birds include reduced productivity, nest desertion, increased predation, and colony abandonment (Arimitsu et al. 2007). Arctic Tern (*Sterna paradisaea*), Mew Gull (*Larus canus*), Glaucous-winged Gull (*Larus glaucescens*), Herring Gull (*Larus argentatus*), Semipalmated Plover (*Charadrius semipalmatus*), Spotted Sandpiper (*Actitis macularia*) and Parasitic Jaeger (*Stercorarius parasiticus*) are some of the species that are expected to nest along shorelines in the park. The park is currently engaged in efforts to monitor and better understand populations of colonial nesting seabirds (Hahr 2008), Kittlitz's and Marbled Murrelets (Piatt and Arimitsu 2007), and Black Oystercatchers (Bodkin et al. 2008). Systematic ground-nesting marine bird surveys are intended to provide critical information on several species not adequately addressed in current research and monitoring efforts. Baseline information on the distribution of these species can be used by park managers to target visitor education, monitoring, and resource protection efforts aimed at minimizing human disturbance to ground-nesting marine birds in Kenai Fjords.

Objectives

The objective of this survey was to determine the distribution of ground-nesting marine birds on camping beaches in Northwestern Fjord and the potential for human disturbance of those nesting birds.

Methods

Since the Kenai Fjords coastline is extensive, it is impractical to survey the entire coastline so we focused on areas with the greatest potential for human disturbance. Using Kenai Fjords data on coastal backcountry visitor use, we stratified coastal areas based on levels of visitor use and focused shoreline surveys for ground-nesting marine birds in areas receiving the highest use.

We surveyed for ground-nesting marine birds and their nests in Northwestern Fjord between 24 and 29 June, 2008. Using data from the park's backcountry campsite monitoring program and coastal ranger patrols, we determined which coastal areas receive use by campers in Northwestern Fjord. All known camping beaches were surveyed by observers walking the length of the particular coastline segment. Along areas where camping was not known to occur but considered possible, we surveyed the shoreline from a distance of 5 – 10 m using a sea kayak. When potential nesting behavior was observed, we landed the vessel and surveyed the shoreline by foot. Surveys were conducted using methods described in Arimitsu et al. (2007) for similar surveys in

Glacier Bay National Park. All nest locations and other site data were recorded using a handheld Garmin Map76CSx GPS unit, and all nest location and bird observation data were incorporated into the park's GIS for use with other natural and cultural resource and visitor use datasets.

Results

Despite being unable to survey for one and a half days due to steady gale force winds, we successfully surveyed all known and potential camping beaches in Northwestern Fjord. We surveyed approximately 21.35 km of shoreline during three and one half days of survey effort between 24 and 29 June, 2008 (Figure 1).



Figure 1. Shoreline surveyed for ground-nesting marine birds in Kenai Fjords National Park.

We found six Black Oystercatcher nests and three Semipalmated Plover nests for a total of nine active nests on camping beaches in Northwestern Fjord (Figure 2). Eight of the nine active shorebird nests contained eggs (Table 1). The Otter Cove Black Oystercatcher pair had two very mobile chicks at the time of the survey. All of the nests were on gently sloping to flat sand or gravel shorelines (Figure 3). Black Oystercatcher nests were very near the high tide line with the exception of the Sunlight Glacier nest which appeared to be substantially below the high tide line. The three Semipalmated Plover nests we observed were in the supratidal among beach greens (*Honkenya peploides*), beach rye (*Elymus mottis*) and other low-lying vegetation.

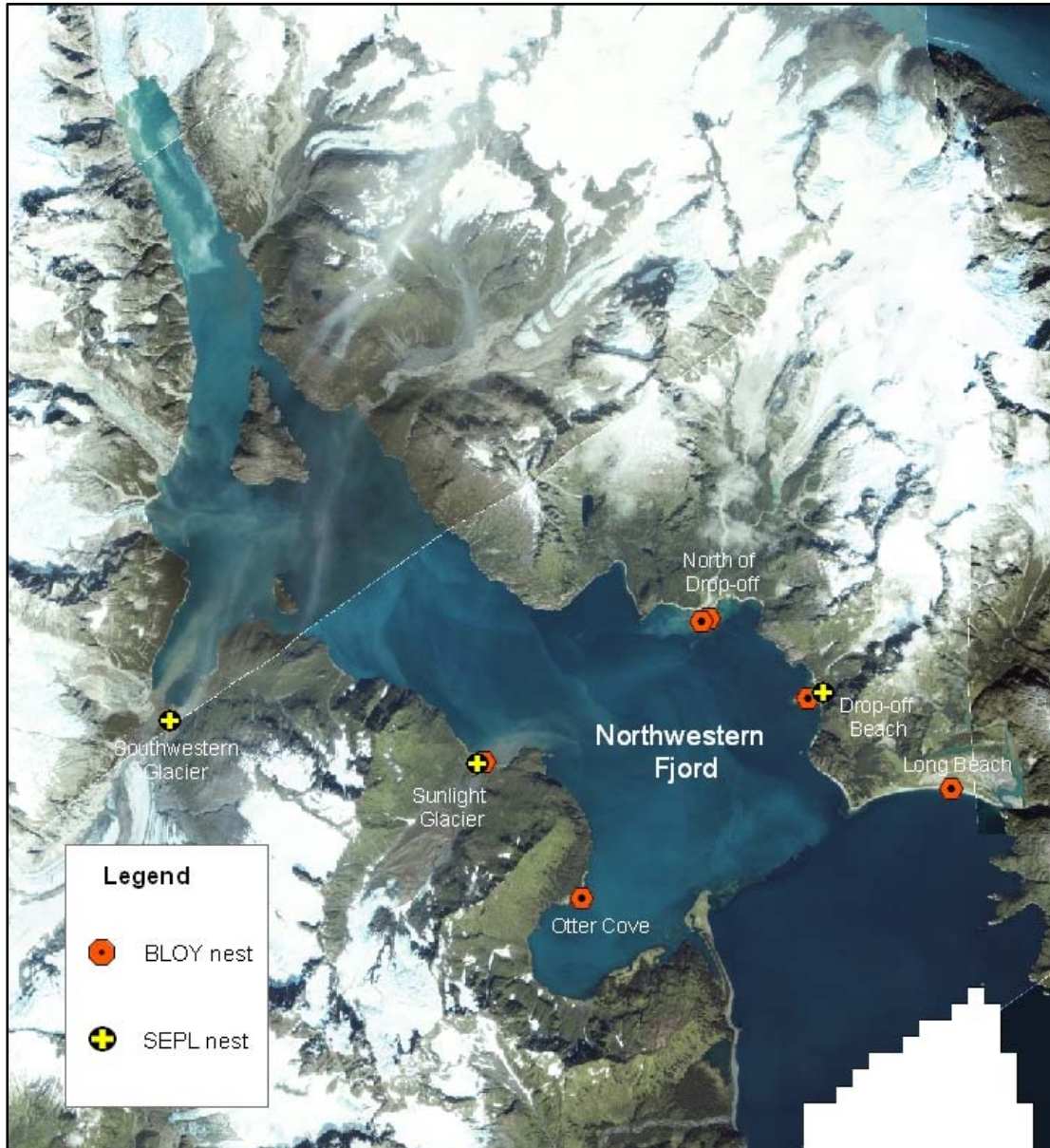


Figure 2. Distribution of Black Oystercatcher (BLOY) and Semipalmated Plover (SEPL) nests in Northwestern Fjord, Kenai Fjords National Park.



A. Black Oystercatcher, Long Beach



B. Black Oystercatcher, Drop-off Beach



C. Black Oystercatcher, North of Drop-off



D. Black Oystercatcher, North of Drop-off



E. Semipalmated Plover, Drop-off Beach



F. Semipalmated Plover, Southwestern Glacier

Figure 3. Nests in Northwestern Fjord, Kenai Fjords National Park.



A. Semipalmated Plover, Sunlight Glacier



B. Black Oystercatcher, Sunlight Glacier

Figure 3. – Continued.

In addition, to the nine shorebird nests that were observed, we encountered eight additional pairs of Semipalmated Plovers that exhibited breeding behavior but we were unable to locate a nest or other evidence of nesting despite exhaustive searches. These birds were seen at the following beaches: Drop-off Beach (1 pair); North of Drop-off (3 pairs); Sunlight Glacier Beach (3 pairs), Northwestern Spit/Otter Cove (1 pair).

Conclusions and Discussion

Although KEFJ is comprised of over 500 miles of spectacular coastline, most of the coast is characterized by steep, rocky headlands, cliffs, and boulder beaches that are virtually inaccessible to boaters and campers. Consequently, opportunities for camping are limited to only about 60 sheltered sand/gravel beaches scattered along the length of the park from Nuka Bay to Bear Glacier. About half of these potential campsites are found in the more remote southern end of the park, and receive very little overnight use. As a result, nearly all backcountry visitor use is concentrated at about 30 sites located in Aialik Bay and Northwestern Fjord. These same areas also contain sensitive cultural and natural resources, including salmon spawning streams, ground-nesting marine birds, coastal sedge meadows, Bald Eagle nests, and archaeological sites.

The purpose of this survey was to provide baseline data on the distribution of ground-nesting marine birds within Northwestern Fjord. Considerable information exists on the status and distribution of Black Oystercatchers in this area of the park, but no systematic inventory of all known and potential camping beaches had occurred prior to this survey. The information gathered in this survey has been incorporated into the park's GIS and can be integrated with spatially-explicit data on the distribution of other sensitive coastal resources such as Bald Eagle nests, seabird colonies, salmon streams, archaeological sites, rare plants, campsites, etc. to conduct a cumulative assessment of the overall extent

of impacts to ecological and cultural resources and the visitor experience in the park's coastal backcountry. Such analyses have been used in other coastal parks including Glacier Bay and Gwaii Haanas, to conduct visitor-resource risk assessments and develop standards and indicators for natural and cultural resources and the backcountry visitor experience (Smith et al. 2007, Gajda et al. 2000).

Black Oystercatcher is a Species of Management Concern in KEFJ, and is considered a Species at Risk in Alaska and globally due to relatively small population size and threats to coastal breeding habitats. Semipalmated Plovers are among the few shorebird species whose numbers appear to be increasing, and are of low to moderate conservation concern in Alaska (Alaska Shorebird Group 2008). Both species are sensitive to human disturbance, particularly during the breeding season (Nol and Blanken 1999, Andres and Falxa 1995). Ground-nesting birds were found on all of the camping beaches in Northwestern Fjord except Redstone Glacier Beach and the small beach near Southwestern Glacier Beach with the food storage locker. These beaches are steeper with a cobble substrate and may not be as suitable for nesting shorebirds.

A search of the KEFJ Wildlife Observations database revealed 20 observations of Semipalmated Plovers from 1982 to 2007. Of those 20 observations, there were only three records of active nests and three records of juvenile birds. Observations were reported from every area of the park except Northwestern Fjord. In 1999, during the initial field season of intensive shorebird monitoring in Aialik Bay and Northwestern Fjord, efforts were made to locate nests of all shorebird species encountered. No Semipalmated Plover nests were found during these initial surveys, resulting in the decision to focus research and monitoring efforts on Black Oystercatchers, a much more abundant species in the fjords at the time (M. Tetreau pers. comm.). Results of our 2008 Northwestern Fjord survey suggest that Semipalmated Plovers may have increased in abundance over the last decade, now apparently outnumbering Black Oystercatchers in Northwestern Fjord. Since results of the 1999 surveys were never written up in a report, we recommend that an inventory of ground-nesting marine birds be conducted at camping beaches in Aialik Bay where visitor use is highest, as well as the rest of the park.

Acknowledgements

Our thanks go to KEFJ Law Enforcement Ranger, Mark Thompson, for his always enthusiastic help in the field despite awful weather that drove other paddlers to end their trips early and take the first water taxi back to Seward. We are also grateful to Shelley Hall, Mike Tetreau, Mark Kansteiner, Janette Chiron, and Marilyn Burch for their support and help with logistics.



KEFJ Ranger, Mark Thompson

Literature Cited

- Alaska Shorebird Group. 2008. Alaska Shorebird Conservation Plan. Version II. Alaska Shorebird Group, Anchorage, AK.
- Andres, B. A. and G. A. Falxa. 1995. Black Oystercatcher (*Haematopus bachmani*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:
<http://bna.birds.cornell.edu/bna/species/155>
- Arimitsu, M.L., Piatt, J.F., and Romano, M.D. 2007. Distribution of ground-nesting marine birds along shorelines in Glacier Bay, southeastern Alaska: An assessment related to potential disturbance by back-country users: U.S. Geological Survey Scientific Investigations Report 2007-5278, 48 p.
- Bodkin, J.L., T.A. Dean, H.A. Coletti, and K.A. Kloecker. 2008. Nearshore Marine Monitoring in the Southwest Network of National Parks. National Park Service. Anchorage, AK. 176pp.
- Gajda, A.M. T., J. Brown, G. Peregoodoff, and P. Bartier. 2000. Managing coastal recreation impacts and visitor experience using GIS. In: Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Laughlin, Jennifer, comps. 2000. Wilderness science in a time of change conference-Volume 5: Wilderness ecosystems, threats, and management; 1999 May 23-27; Missoula, MT. Proceedings RMRS-P-15-VOL-5. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 115-123
- Hahr, M. 2008. Seabird Colony Survey Trip Report 2007: Kenai Fjords National Park. Kenai Fjords National Park, U.S.D.I. National Park Service, Seward, AK. 15pp.
- Morse, J.A., A.N. Powell, and M.D. Tetreau. 2006. Productivity of Black Oystercatchers: Effects of recreational disturbance in a national park. *The Condor* 108:623-633.
- Morse, J.A. 2005. Effects of recreational disturbance on breeding Black Oystercatchers: Species resilience and conservation implications. M.S. Thesis. University of Alaska Fairbanks. 61pp.
- Nol, E. and M. S. Blanken. 1999. Semipalmated Plover (*Charadrius semipalmatus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:
<http://bna.birds.cornell.edu/bna/species/444>
- Piatt, J. F., and M. Arimitsu. 2007. Kittlitz's and marbled murrelet abundance, coastal habitat relationships, and productivity in Kenai Fjords National Park. Study plan

MFEB-SP-2006-01 Modification #1, March 2007. Alaska Science Center, Anchorage, Alaska. 23 pp.

Smith, T.S., T.D. DeBruyn, T. Lewis, R. Yerxa, and S.T. Partridge. 2007. Bear-human conflict risk assessment at Glacier Bay National Park and Preserve, *in* Piatt, J.F. and Gende, S.M., eds., Proceedings of the Fourth Glacier Bay Science Symposium, October 26-28, 2004; U.S. Geological Survey Scientific Investigations Report 2007-5047, p. 201-203.

Table 1. Summary of Black Oystercatcher and Semipalmated Plover nests and contents in Kenai Fjords National Park.

Date	Location	Species	Status	Lon	Lat	Datum
6/24/2008	Long Beach	Black Oystercatcher	Active nest, 3 eggs	-149.8582541	59.7423184	NAD83
6/24/2008	Drop-off Beach	Black Oystercatcher	Active nest, 3 eggs	-149.8966515	59.7559374	NAD83
6/24/2008	Drop-off Beach	Semipalmated Plover	Active nest, 4 eggs	-149.8923020	59.7566292	NAD83
6/25/2008	North of Drop-off	Black Oystercatcher	Active nest, 3 eggs	-149.9224398	59.7679070	NAD83
6/25/2008	North of Drop-off	Black Oystercatcher	Active nest, 2 eggs	-149.9246001	59.7675402	NAD83
6/27/2008	Southwestern	Semipalmated Plover	Active nest, 4 eggs	-150.0733203	59.7582785	NAD83
6/28/2008	Sunlight	Black Oystercatcher	Active nest, 1 egg	-149.9869988	59.7499053	NAD83
6/28/2008	Sunlight	Semipalmated Plover	Active nest, 1 egg	-149.9891758	59.7498242	NAD83
6/28/2008	Otter Cove	Black Oystercatcher	Active nest, 2 chicks	-149.9626304	59.7304041	NAD83

Appendix A. KEFJ Field Operational Plan.

Operational Update June 24 – 29, 2008

Ground-nesting Bird Survey and Coastal Kayak Patrol, Northwestern Fjord, Kenai Fjords NP

Field Contact: Meg Hahr (403) and Mark Thompson (202)

Seward Contact: Mike Tetreau, Logistics coordinator (Radio 407, 907-224-7529)

Personnel:

1. Meg Hahr (403)
2. Mark Thompson (202)

Boat:

Drop off/pick up by water taxi (Alaska Saltwater Lodge)

2 kayaks

Communications:

Park VHF hand-held radio (2)

Hand-held marine VHF radio (2)

Sat Phone: 881-6314-42970

406 MHz PLBs (2)

We will radio Park Dispatch (700) daily at approximately 0800 to file float plan. Crew will radio Logistics Coordinator (404) or Park Dispatch (700) to close float plan before 2000.

Emergency Plan:

Primary contact during work hours: Park headquarters on park VHF hand-held radio, coastal repeaters. Secondary contacts during non-work hours:

Mike Tetreau – 907-224-3589 (cell 907-362-7676)

Shelley Hall – 907-224-2470

Seward Police Dispatch – 907-224-3338

General Operations Plan & Schedule:

Day 1: Tuesday 6/24/08. Depart Seward boat harbor on water taxi and travel to Northwestern Fjord. Get dropped off at Drop Off beach in NW and conduct coastal patrols and ground-nesting bird surveys.

Day 2: Weds. 6/25/08. Conduct coastal patrols and ground-nesting bird surveys around Northwestern.

Day 3: Thursday 6/26/08. Conduct coastal patrols and ground-nesting bird surveys around Northwestern.

Day 4: Friday 6/27/08. Conduct coastal patrols and ground-nesting bird surveys around Northwestern.

Day 5: Saturday 6/28/08. Conduct coastal patrols and ground-nesting bird surveys around Northwestern.

Day 6: Sunday 6/29/08. Landing craft will pick us up on Drop Off beach and return to Seward by 1800.

Alaska Saltwater Lodge Water Taxi (224-5271)