

CORMORANT SURVEYS IN THE NEAR ISLANDS GROUP, ALEUTIAN ISLANDS, ALASKA, IN JULY 2003, WITH NOTES ON OTHER BIRDS



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ABSTRACT:

In July 2003, we conducted a survey of cormorants and other ledge-nesting seabirds in the Near Islands, Aleutian Islands, Alaska, part of the Aleutian Islands Unit of the Alaska Maritime National Wildlife Refuge. Prior surveys of the entire group of islands had been completed in the 1970s. Comparisons suggested substantial declines occurred in cormorant populations between the 1970s and 2003. Kittiwakes and murrelets declined during the 1970s but were only slightly below late 1970s counts in 2004. A crevice nesting species, pigeon guillemot increased between the 1970s and 2004 on Agattu and Nizki-Alaid islands where introduced arctic foxes were removed in the mid-1970s. All species of wildlife encountered on the surveys were documented in an annotated list.

Reasons for declines of ledge-nesting species are not clear. The reduction in cormorants is of particular concern because the Near Islands formerly had the majority of breeding cormorants in the Aleutians. Surveys are needed to determine whether declines are more widespread in the Aleutians, particularly for red-faced cormorants, a species of concern because of its restricted range.

INTRODUCTION:

Pelagic (*Phalacrocorax pelagicus*) and red-faced cormorants (*P. urile*) occur throughout the Aleutian Islands, but the Near Islands group has been reported to contain approximately 70 percent of the cormorants in the entire Aleutian chain (Sekora 1973, Nysewander et al. 1980). The Aleutian Islands Unit (which includes most of the islands in the group) of the Alaska Maritime National Wildlife Refuge (NWR) contains more than half of the nesting area in Alaska for red-faced cormorant, a species listed on the U.S. Fish and Wildlife Service Species of Concern and the Audubon Society WatchList. The first counts of cormorants in this region were conducted during a survey of the islands prior to making recommendations about designating them as Wilderness under the Wilderness Act of 1964. Besides evaluating signs of human occupation on the land, the wilderness surveys were designed to describe the distribution and relative abundance of all breeding seabirds including cormorants around the coastlines of the refuge islands. Attu, Agattu, Alaid, Nizki, and Shemya islands were surveyed in this way in 1970 (Sekora 1973). A more thorough survey, focusing particularly on ledge-nesting seabirds like cormorants, kittiwakes (*Rissa spp.*), and murre (*Uria spp.*), was conducted in 1979 (Early et al. 1980) in the Near Islands, and both these 1970s surveys provided a baseline for comparisons. In addition to the surveys mentioned above, counts have been conducted for cormorants at one or more of the Near Islands in the 1980s and 1990s (e.g., Nizki and Alaid islands; Thomson et al. 1993), and these also provide comparisons.

Observations at several sites in the Near Islands over the past 10-15 years suggested numbers of cormorants had declined (e.g. Byrd and Scharf 2003). Since the Aleutian Islands, and particularly the Near Islands, are so important to red-faced cormorants, the staff of the Alaska Maritime NWR conducted a survey of the island group from July 17-24, 2003 to determine whether widespread declines had indeed occurred and to try to document the magnitude of the decline if it was real. In addition, we made counts of black-legged kittiwakes (*R. tridactyla*) and murre (*Uria*) at breeding colonies, and incidental observations of all coastal birds were recorded during our surveys and concomitant surveys made by other crews for marine mammals and *Brachyramphus* murrelets.

METHODS

Cormorants were recorded during small boat surveys around the coastlines of each island in the Near Group (Fig. 1). Two or three observers in each of three boats observed cliffs and nearshore waters usually within 10-50 m of shore. All cormorants in the water, air, or on shore were counted and assigned to species when possible. Occupied and empty nests were counted, and we recorded the size of cormorant broods in nests where all chicks were visible. In addition to cormorants, we counted other ledge-nesting species (e.g., kittiwakes, *Rissa*, and murre (*Uria*), and we noted, but did not carefully count, other species of birds encountered.

While the cormorant surveys were occurring, a separate crew counted sea otters and other marine mammals around each island. The marine mammal crew also incidentally counted common eiders and pigeon guillemots, two species in the same areas as otters. Furthermore, transects were conducted from the M/V Tiglax, the refuge

support vessel, for Kittlitz's and marbled murrelets within 2 miles of each island. Cormorant crews included: Vernon Byrd, Douglas Causey, Don Dragoo, John Laslett, Anne Morkill, Heather Renner, Jeremiah Trimble, and Jeff Williams. The murrelet crew was Tony DeGange and John Piatt, and the sea otter crew was Angie Doroff, Verena Gill, and John Haddix. Results of the marine mammal and murrelet surveys will be reported separately, but some of their results are referred to in this report.

Generally our surveys were conducted between 08:30-21:00 h in good visibility and winds less than 25 knots. Rough seas or low visibility precluded surveys on parts of 4 days.

RESULTS

Cormorant Numbers

We counted 8,006 cormorants in the Near Islands in July 2003. Attu, the largest island, had 4,812 birds, 60% of the total (Table 1). Agattu had 1,641 cormorants (20% of the total), and the Semichi Islands (Alaid, Nizki, and Shemya) contained the remaining 20%. Of the individual birds we could assign to species (81% of all birds seen), red-faced cormorants were slightly more prevalent (54%) than pelagic cormorants (46%). A total of 2,200 cormorant nests were counted during the surveys; 53% were on Attu, 31% on Agattu, and 16% in the Semichis (Table 1). Red-faced cormorants occupied at least 1,250 nests, and pelagic cormorants occupied at least 581 nests. The remaining 371 nests could not be attributed to a species either because attending birds were too far away to identify or because the nests were not attended. Many of the unattended nests probably represented failed nesting attempts.

Table 1. Counts of cormorants in the Near Islands, Alaska, July 17-24, 2003.

Species	Attu	Agattu	Alaid	Nizki ^b	Shemya	Total
Red-faced Cormorant	1938 (661) ^a	745 (373)	81 (35)	467 (138)	313 (43)	3544 (1250)
Pelagic Cormorant	2165 (386)	577 (170)	28 (5)	139 (16)	110 (4)	3019 (581)
Unidentified Cormorant	709 (127)	319 (114)	265 (90)	31 (35)	119 (5)	1443 (371)
Total Cormorants	4812 (1174)	1641(684)	375 (140)	637 (189)	542 (52)	8006 (2202)

^a Number of nests in parentheses

^b Includes islands in Hammerhead Pass (July, Lie, Lotus, and Hammerhead)

Cormorant Nesting Chronology and Productivity

Red-faced cormorants typically initiate nesting earlier than pelagic cormorants, and that seemed to be true in the Near Islands in 2003. Most red-faced cormorant chicks were between 4 and 6 weeks old based on plumage and size, whereas most pelagic cormorants had chicks less than 2 weeks old and some pelagic cormorants were still incubating eggs at the time of our survey.

The average brood size for pelagic cormorants was 2.30 chicks (sd = 0.57, n = 37) in successful nests where we could see chicks. Red-faced cormorants had slightly larger broods; mean 2.49 (sd = 0.89, n = 82). Although we did not keep careful track, about 70% of the unknown cormorant nests were empty (i.e., probably failed), and the other 30% were still occupied. We estimated that about 12-15 % of all cormorant nests we observed had been abandoned, although evidence of additional failed nests may have disappeared prior to our survey.

Other Ledge-nesting Seabirds

Northern fulmars (*Fulmaris glacialis*) were found nesting at Attu for the first time. At least 27 birds were sitting on nest scrapes and approximately 50 birds were associated with the colony at the time of our observations (1900 h on July 20).

Black-legged kittiwakes (*Rissa tridactyla*) were nesting on three islands in the Near Island group. We counted 1,682 birds and 422 nests at Attu, 7,400 birds and 5,539 nests at Agattu and 166 birds and 51 nests at Alaid (Table 2). We were able to evaluate the contents of 130 nests at Aga Cove, Agattu, on July 22; 33 nests (25%) had sitting adults, 39 (30%) had 1 chick, 7 (5%) had 2 chicks, and 51 (39%) were empty. If all the sitting adults had eggs or chicks (and most probably did), we estimate that about 60% of the nests were still active at the time of our survey (most chicks < 2 weeks old).

Common (*Uria aalge*) and thick-billed murres (*U. lomvia*) nested on three islands. We counted 7,691 murres at Attu, 7,714 at Agattu, and 18 in a small colony on Nizki (Table 2). Many murres were not assigned to species due to observing conditions, but we determined that both species were present in all colonies surveyed at Attu and Agattu. The small colony at Nizki was composed of common murres.

Table 2. Counts of kittiwakes and murres in the Near Islands, Alaska, July 17-24, 2003.

Island	Black-legged Kittiwakes	Kittiwake Nests	Murres
Attu	1682	422	7691
Agattu	7400	5539	7714
Alaid	166	51	0
Nizki	0	0	18
Shemya	0	0	0
Total	9248	6012	15423

Other Birds

An annotated list of birds observed on each island in the Near Islands is attached in Appendix A. Our surveys were not designed to count terrestrial birds, so emphasis was given to species we observed on beaches, cliffs, or nearshore waters from the boats. As a result passerines are not included in the annotated list. Observations we considered particularly interesting are summarized below.

At least three individual cormorants matching the description of Kenyon's Shag (*Stictocarbo kenyonii*), either a separate species (Siegel-Causey 1991) or a variant of pelagic cormorant, were observed during the surveys. One of the birds was attending a nest with chicks.

Interesting observations of waterfowl included three broods of formerly-endangered Aleutian Canada geese (*Branta canadensis leucopareia*) at Attu, the first evidence of nesting there since geese were extirpated on the island by introduced foxes more than 100 years ago. Introduced foxes were removed in 1999-2000. A single emperor goose (*Philacte canagica*) was seen on Attu for one of very few summer records of this species in the Aleutians. A flock of 5 surf scoters (*Melanitta perspicillata*) seen at Attu was of note since the species is seldom seen in the Aleutians, and its occurrence is unprecedented there in summer. A male smew (*Mergellus albellus*) observed at Attu with red-breasted mergansers (*Mergus serrator*) represents an unusual summer record of this Asiatic merganser.

An immature white-tailed eagle (*Haliaeetus albicilla*) seen on Alaid may have been the same individual observed at Shemya in late May (G.V. Byrd, unpubl.). The Near Islands are west of the breeding range of bald eagle (*H. leucocephalus*), so eagles of any species occur only occasionally in this region. An adult slaty-backed gull (*Larus schistisagus*) was seen at Alaid. This provides one of very few summer records for this Asiatic gull in the region.

We were interested in the occurrence of murrelets (*Brachyramphus* and *Synthliboramphus*) and auklets (*Aethia* and *Ptychoramphus*) in the Near Islands because their status is relatively undocumented in this region. Of particular interest was the discovery of hundreds of whiskered auklets (*Aethia pygmaea*) near Attu, Agattu, and the Semichi group (Alaid, Nizki, and Shemya). At Agattu, two recently-fledged young whiskered auklets were observed. At least three least auklets (*A. pusilla*) were observed during the surveys, but there was no evidence of nesting. Dozens of parakeet auklets (*A. psittacula*) congregating in nearshore waters off talus slopes at Attu, Agattu, and at several locations in the Semichis suggested this species is an uncommon nester in the Near Islands. Cassin's auklets were found in nearshore waters at three locations, once near the Savage Islands, Attu, and thrice near Agattu, and once near Shemya. Perhaps a few birds are nesting in the Near Islands. Kittlitz's (*Brachyramphus brevirostris*) and marbled murrelets (*B. marmoratus*) were counted on nearshore transects around each island in the Near group (Piatt and DeGange unpubl. data). Kittlitz's appeared to be more common than marbled murrelets, and Attu had by far the most birds of any of the islands.

DISCUSSION

Cormorants

We found far fewer cormorants in the Near Islands in 2003 than in the 1970s (Table 3). Numbers were down by about 30% between 1970 and 1979, and between 1979 and 2003 another decline (more than 70%) occurred. The overall decline between 1970 and 2003 was 87%. Although cormorants are known to shift nesting locations among years, such shifts are thought to be over relatively short distances, so shifting should have been contained within the isolated Near Island group which is separated by more than 150 km from the nearest island (Buldir, where no increases have occurred, J.C. Williams, unpubl. data).

The only logical conclusion is that the lower counts in 2003 represent a population decline. Although methods were similar, it is possible that the counts in the 1970s were less accurate than those in 2003 because the objective of the earlier surveys was to inventory all coastal birds and marine mammals from small boats along the shorelines of each island. The 1979 survey methods were probably most similar to our approach. The 1970 survey was for descriptive purposes only and may have included some general estimates instead of careful counts, nevertheless in most cases attempts were made to count all birds (P.C. Sekora, pers. comm.).

Table 3. Counts of cormorants in the Near Islands in the 1970s compared to 2003.

Island	Km of Coast	1970	1979	2003
Attu	250	72900 (77%) ^a	41000 (64%)	4812 (60%)
Agattu	115	9537 (10%)	8100 (13%)	1641 (21%)
Alaid	16	5600 (5.5%)	4685 (7%)	374 (5%)
Nizki ^b	22	6200 (6.5%)	6660 (10%)	637 (8%)
Shemya	21	1000 (1%)	3792 (6%)	542 (7%)
Near Islands Totals	424	95237	64237 (-33%) ^c	8006 (-87%) ^d

^a Percent of total in the Near Islands

^b Includes islands in Hammerhead Pass (July, Lie, Lotus, and Hammerhead)

^c Counts in 1979 were 33% lower than in 1970

^d Counts in 2003 were 87% lower than in 1970

Earlier surveys did not always differentiate between species of cormorants, so it is not possible to assess changes in the species separately. There are two time series in the region that might help clarify timing of declines between 1979 and 1993. Following removal of introduced foxes from Nizki and Alaid islands in 1976, cormorants increased substantially and numbers remained relatively high until about 1990 (Table 4). Numbers were much lower in 1992 and have remained low thereafter. Winter counts at Shemya indicate substantial declines in the early 1990s as well (Table 5).

Table 4. Counts of cormorants in summer at Nizki and Alaid islands, 1976-2003.

Species	1976	1979	1984	1990	1992	2003
Pelagic	300		946	1,328	772	548
Red-faced	3,000		3,410	3,428	634	167
Unident.		8,463			16	296
Total	3,300	8,463	4,356	4,756	1,412	1,012

Table 5. Counts of adult and subadult cormorants (both species combined) at roost sites in winter at Shemya Island, 1988-2001.

Year	Count
1988	794
1989	998
1990	1203
1991	296
1992	225
1993	380
1994	223
1995	343
1996	350
1999	255
2000	175
2001	129

As indicated above, localized counts are not necessarily reflective of population change because of shifting in distribution, at least within a region. An example of this would be the large influx of cormorants at Nizki and Alaid in 1979 which represented shifts from within the Near Islands most likely. Nevertheless, these time series possibly provide an indication of the timing of declines in the Near Islands as a whole.

Reasons for declines are not apparent. One scenario that could account for the change would be distribution shifts, i.e., birds formerly breeding in the Near Islands shifted to breeding areas elsewhere. While cormorants are known to change breeding locations (White et al. 1977, Nysewander and Barber 1979, Hobson 1997, Causey 2002), shifts very likely would be on a scale smaller than the Near Islands group. Although it is not known with certainty, red-faced cormorants almost certainly are residents, not migrating from the Aleutians in winter (Causey 2002). The same may be true for pelagic cormorants in the Aleutians, although birds breeding farther north clearly depart in winter (e.g., northern Bering and Chukchi Sea (Hobson 1997)). Clearly substantial numbers of

pelagic cormorants remain in the Aleutians in winter (e.g., Byrd and Scharf 2003). Assuming then that migration plays a small role in the life history of cormorants breeding in the Near Islands, whatever has caused declines has happened in that area. We have no reason to believe that physical nesting habitat has changed over the years (G.V. Byrd pers. obs.). In fact, more habitat probably became available to cormorants after introduced foxes were removed from Agattu and Nizki-Alaid, both by 1977. Indeed the proportion of cormorants nesting at these two islands increased over the survey periods (Table 3). Direct mortality of birds was not obvious. For instance, Air Force personnel at Shemya and Coast Guard personnel at Attu did not report large die offs of cormorants. Neither did refuge field crews working in the area many summers during the period notice evidence of substantial mortality. Few data on productivity have been collected in the Near Islands, but if excessive adult mortality has not been involved, prolonged periods of reproductive failure must have been occurred. Data that are available from Nizki-Alaid and Agattu suggested some reproductive failures (e.g., 5 of 11 colonies failed and abandoned nests in 1992 at Nizki-Alaid, Thomson and Staudt 2004). .4 pelagic cormorant chicks/nest at Nizki in 1992 averaged Reduced prey is frequently the cause of reproductive failures for seabirds in Alaska. Cormorants are nearshore feeders, that take both schooling fish like sand lance (*Ammodytes*) or solitary demersal and macroinvertebrates (Causey 2002). It is not clear whether prey has changed for cormorants in the past 30 years. More work is needed to evaluate causes of declines.

Kittiwakes and Murres

Kittiwakes and murres typically do not shift nesting locations among years like cormorants, so comparisons of individual colonies among years provide trend information. Similar to cormorants, kittiwake numbers apparently declined substantially between 1970 and 1979 (Table 6), but counts between 1979 and 2003 were within 20% of each other, the normal range of sampling error. Interestingly, more frequent counts of kittiwakes at an index area on Agattu (Table 7) indicated substantial variation among years, but suggested a steady decline between 1985 and 2002.

Table 6. Counts of kittiwakes in the Near Islands from the 1970s to 2003.

Island	1970	1979	2003
Attu	3500	2560 (230) ^a	1682 (422)
Agattu	15000	8160	7400
Alaid	1000	240 ^b (120)	166 (51)
Nizki ^b	0	0	0
Shemya	0	0	0
Near Islands Totals	19500	10960 (-44%) ^c	9248 (-53%) ^d

^anests in parentheses

^bestimated breeders based on 120 nests (also 1,260 non-breeders seen near Alaid)

^cnumbers were down by 44% between 1970 and 1979

^dnumbers were down 53% between 1970 and 2003

Table 7. Counts of kittiwakes and murres at Aga Cove, Agattu.

Species	1970	1974	1975	1978	1979	1982	1985	1990	1994	2003
BLKI ^a	5000		3000	2566	3040		4867	3739	2618	1594
UNMU ^b	1500	2100		2339	3025	3369	4522	5875	3998	3215

^a Black-legged kittiwake

^b Common and thick-billed murres combined as unidentified murres

Murre counts also were lower (54%) in 1979 than in 1970, but numbers in 2003 were only slightly lower than in 1979 (Table 8). At an index plot on Agattu, numbers of murres increased between 1970 and 1990, but have declined since then (Table 7). Apparently some shifting occurred since the Aga Cove colony increased between 1970 and 1979 at a time when overall murre populations in the Near Islands were declining. As with cormorants it is not clear what caused declines in numbers of kittiwakes and murres between 1970 and 1979.

Table 8. Counts of murres in the Near Islands in the 1970s compared to 2003.

Island	1970	1979	2003
Attu	18300	8130	7691
Agattu	21000	9210	7714
Alaid	0	0	0
Nizki ^b	0	12	18
Shemya	0	2	0
Near Islands Totals	39300	17354 (-54%) ^a	15423 (-61%) ^b

^a counts in 1979 were 54% below the 1970 counts

^b counts in 2003 were 61% below the 1970 counts

Other Species

Besides cormorants, kittiwakes, and murres, the only other species of seabird that was counted for comparison was pigeon guillemot (*Cepphus columba*). Guillemots were counted incidental to the sea otter surveys conducted by Doroff, Gill, and Haddix. It is likely that they missed birds due to their need to travel relatively fast and to remain further offshore than did Early et al. (1980). In spite of a probable underestimate in 2003, it was apparent that more pigeon guillemots were present in 2003 than formerly (Table 9). The increases primarily occurred at Agattu and Nizki-Alaid where introduced foxes were removed in the mid-1970s.

Table 9. Counts of pigeon guillemots in the Near Islands, July 17-24, 2003 (V. Gill, A. Doroff, and J. Haddix , U.S. Fish and Wildlife Service, unpubl. data).

Island	1979	2003
Attu	140	84
Agattu	190	706
Nizki-Alaid	21	97
Shemya	0	5
Near Islands Totals	351	892

CONCLUSIONS

Substantial declines apparently occurred for cormorants, kittiwakes, and murrelets in the Near Islands between 1970 and 1979, and substantial declines have continued for cormorants since that time. In contrast pigeon guillemots have increased since 1979. It is not clear what caused declines in the three species of ledge-nesters in the 1970s. The guillemot increases are almost certainly a response to removal of introduced foxes at Agattu and Nizki-Alaid.

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APPENDIX A. Annotated list of birds seen at each island in the Near Islands, Aleutian Islands, July 17-24, 2003 (Counts of ledge-nesting seabirds and pigeon guillemots are not repeated in the annotated lists).

Birds seen at Attu, July 17-19, 2003

Common Loon: One was seen on the sea on July 18 in Nevediskov Bay.

Red-throated Loon: Three flew over our skiff on Massacre Bay on July 18.

Laysan Albatross: Several were seen on nearshore transects on July 17-18 (Piatt and DeGange unpubl. data).

Short-tailed Shearwater: Approximately 60 shearwaters were seen on July 18 on the south side of the island.

Northern Fulmar: We found a small colony at Cape Wrangell on July 19. At least 27 birds appeared to be occupying scrapes, and about 50 birds were associated with the slopes. Two were light phase birds, and the others were dark.

Emperor Goose: One bird was seen at Square Point on July 18 (Gill et al. unpubl. data).

Aleutian Canada Goose: One was seen in flight on July 18, and on July 19, three broods were seen on a beach near Austin Cove! They contained 3, 4, and 5 goslings.

Mallard: At least 3 birds were recorded in nearshore marine waters.

Surf Scoter: Don Dragoo and Verena Gill saw a flock of 5 including 2 males in Abraham Bay on July 18.

White-winged Scoter: Don Dragoo saw at least 10 on the south side on July 18.

Harlequin: Dozens, but less than 50, were seen on the south side, and similar numbers were noticed on the north side.

Common Eiders: The sea otter survey crew counted 3,370 eiders with approximately 50:50 sex ratio incidentally to their surveys of the coastline of the island (Gill et al. unpubl. data). Ducklings ranged in age from just hatched to large.

Red-breasted Merganser: Female plumaged birds seen on both sides of the island. During the surveys we saw a total about of about 30-35 birds.

Smew: On July 18 a male was seen with 3 female plumaged red-breasted mergansers by John Haddix on the south side of Attu near Buckhanon Point.

Glaucous-winged Gull: Glaucous-winged gulls occupied the majority of offshore rocky islets, and we saw 3-4 week old chicks on many of them. We also saw chicks on the mainland near East Holtz Bay, a sign that fox removal has allowed gulls to nest successfully on the main island.

Black-legged Kittiwake: Most of the nesting birds were on the north side, but one colony was near Cape Wrangell on the south side.

Red-legged Kittiwake: A juvenile was seen with black-legged kittiwakes on July 18 on the south side of Attu near Cape Wrangell.

Parasitic Jaegers: Three were seen on July 18 on the south side of Attu.

Pomerine Jaeger: One was seen on the north side of the island on July 19 (Piatt and DeGange unpubl. data).

Pigeon Guillemots: At least 100 were seen in Massacre Bay. Several birds were carrying fish indicating hatching had occurred. At least 3-4 birds were in molt with gray plumage. Counts from the sea otter survey crew are reported above.

Brachyramphus murrelets: On transects about one and two miles off the coastline of Attu, Piatt and DeGange (unpublished data) counted more than 50, and the sea otter survey crews counted 14 incidental to their other work (Gill et al. unpubl. data). Most were in Massacre Bay and most were identified as Kittlitz's murrelets, although at least a few marbled murrelets were identified. Several birds were carrying fish.

Ancient Murrelet: Approximately 25-30 birds were seen including at least one adult with 2 chicks.

Parakeet Auklet: A few were seen around Cape Wrangell and others were noticed off the northeastern portion of the island.

Pigeon Guillemot: The count conducted by the sea otter survey crew is recorded above, but it was conservative.

Cassin's Auklet: Kevin Bell saw one on July 18 on the south side of Attu near Savage Islands.

Whiskered Auklet: Several dozens were noticed particularly off the points.

Common Murre: Colonies on Attu were located near Cape Wrangell and on offshore rocks on the north side of the island east of the Cape. We saw several birds hauled out on low reefs as if they were sick or injured. Many birds were carrying fish but we could not tell which species.

Thick-billed Murre: This species was probably less common than their congener, but we could not determine precisely the ratio of the two species.

Tufted Puffins: Puffins were fairly common around Attu. Hatching apparently had as two hatched membranes were seen at burrow entrances on Gibson Island. Only a small percentage of the puffins we saw were carrying fish. Some were carrying sand lance, but at least one had a thicker bodied forage fish.

Horned Puffin: Dozens were noted near rocky points, and one was seen carrying a fish on July 19.

Birds seen at Agattu, July 20-22, 2003

Common Loon: Two pairs were seen in the nearshore waters on the north side on July 21. One additional bird was heard on July 21, and another was seen 1 mile offshore during the murrelet surveys on July 22.

Red-throated Loon: Two were seen in the nearshore waters on the north side of the island on July 21.

Laysan Albatross: Four were seen 1 mile off the north side on July 21.

Northern Fulmar: Individuals were observed offshore and fairly nearshore during transects for murrelets and occasionally by observers counting cormorants.

Short-tailed Shearwater: A few were seen on transects within 2 miles of the island.

Storm-petrels: Individual fork-tailed and Leach's were found aboard the ship on July 20 when it was anchored in Patricia Bight on the north side, and others were seen around the boat after dark. One bird regurgitated orange amphipods about 3 mm long.

"Kenyon's Shag": Two separate red-billed Kenyon's shags were seen and one was on a nest with chicks at Karab Cove on July 20.

Aleutian Canada Goose: Two were seen flying on July 21, but others seen ashore (e.g. in Goose Valley) seemed to still be flightless.

Northern Pintail: One female was seen in nearshore waters near Aga Cove on July 22.

Mallard: Two were seen in the nearshore zone on July 21.

Common Eider: John Haddix noticed that at Adak (July 11-12) and Kiska (July 14) all the males were still in alternate plumage, but most males seemed to be in eclipse plumage during our surveys in the Near Islands. Either the timing of the molt is different or the birds in the Aleutians were changing from alternate to eclipse plumage during the third week of July. The sea otter crew counted 920 eiders (Gill et al. unpubl. data).

Harlequin: Approximately 50-60 birds were seen on the north side of the island, and fewer were noticed on the south side.

White-winged Scoter: One flock of 6 and a pair were seen on July 21.

Red-breasted Merganser: Two singles and a pair were seen on July 20.

Peregrine Falcon: At least 6 were seen on July 21.

Glaucous-winged Gull: Chicks seen on offshore rocks and on the beach indicating productivity was fairly good in 2003.

Black-legged Kittiwake: Counts were recorded above.

Pomarine Jaeger: Two were seen during observations about 2 miles off the south side of the island on July 20 and 1 was seen off the north side on July 21.

Parasitic Jaeger: At least 6 birds were noted including both light (1 bird) and dark phase birds.

Common and Thick-billed Murre: Both species were present, but we could not separate them from the distances we conducted counts from.

Kittlitz's Murrelet: One was seen on the east side on July 20, 2 were seen on transects on the north side, and 2 unidentified *Brachyramphus murrelets* that may have been this species were also observed.

Marbled Murrelet: One was seen by the sea otter survey crew on July 22.

Parakeet Auklets: At least 100 were seen on the north side in small flocks on July 21, and perhaps 20 were noticed on the south side on July 22.

Cassin's Auklets: A total of 3 individuals were seen near the kelp on the north side of the island on July 21.

Whiskered Auklet: On the north side of the island, we noted at least 40 adults and 2 fledglings on July 21 and 5 were seen about 1 mile offshore on the east side of the island on July 20.

Least Auklet: Two were seen on July 20 on the e. side and one was seen on the n. side on July 21.

Pigeon Guillemot: Adults were seen carrying fish; sand lance, pricklebacks, and blennies.

Ancient Murrelet: At least 10 were seen on the east side of the island on July 20 and several were seen on the north side on July 21.

Tufted and Horned Puffin: Both were common around Agattu and a few were seen carrying fish.

Birds seen at Nizki, Alaid, and Shemya, July 23-24, 2003

Common Loon: One seen in flight July 23.

Red-throated Loon: Two seen in the nearshore waters on the north side on July 23.

Laysan Albatross: One seen 1 mile off n. side on July 23.

Fulmar: One seen nearshore on the n. side and others seen offshore. Several seen on transect.

Short-tailed Shearwater: A few seen on transect.

Storm-petrels: One seen on transect off the e. end of Shemya.

Aleutian Canada Goose: A few were noticed, but most were probably flightless during our surveys.

Common Eider: The sea otter survey crew counted 606 eiders incidental to their surveys.

Harlequin: About 25 noticed.

Peregrine Falcon: One was heard at Alaid

White-tailed Eagle: An immature was seen near Alaid Head on July 24.

Glaucous-winged Gull: Young are seen swimming.

Slaty-backed Gull: An adult was collected just offshore from the spit connecting Nizki and Alaid on July 24.

Arctic Tern: One seen near Alaid.

Aleutian Tern: One seen near Alaid

Black-legged Kittiwake: The only colony was near Alaid Head.

Parasitic Jaeger: At least 6-10 dark-phase birds were seen on the north shores on July 23.

Ruddy Turnstone: 3 flew of BOB n. of Shemya.

Phalarope: 15 unidentified phalaropes seen off the north side of Nizki and 2 red phalaropes were seen July 24 on the south side of Nizki.

Common and Thick-billed Murre: Dozens were seen in the nearshore waters.

Parakeet Auklets: At least 20 seen.

Cassin's Auklets: One seen north of Shemya.

Whiskered Auklet: On n. side at least 250 adults seen on transect on the e. end on July 23. Dozens were seen on the south side. Overall probably 300-400 noted around Shemya on July 23-24.

Least Auklet: 2 seen near Nizki on July 24.

Pigeon Guillemot: Counts were recorded above.

Ancient Murrelet: At least 4 seen on transects and one was seen near Nizki on July 24.

Tufted Puffin: Common in nearshore waters and sitting on bluffs and slopes on Nizki.

Horned Puffin: Hundreds off Alaid and Nizki.