

Final Report

**Seabird Samples as Resources for Marine
Environmental Assessment**

by

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Abstract

Archived specimens of seabirds are playing critical roles in many studies contrasting changes in time and space in genetics, stable isotopes, and contaminants. Seabirds are excellent marine bioindicators, representing multiple trophic levels and being especially rich at higher levels. Preserving and archiving multiple sample types from these animals caters to an increasingly broad variety of researchers. By preserving these samples, we enable present and future analyses for questions ranging from changes in contaminant levels, to the nature of populations and genetic stocks in affected areas, to other issues related to Outer Continental Shelf (OCS) activities. Having the samples to address retrospective and geographic comparative analyses is important for studying the rates and characteristics of natural and anthropogenic changes.

This project focused on an increasing interest and need for samples of preserved marine bird specimens, particularly for genetic, contaminant, and stable isotope studies. Having material available for such studies is critical, particularly material from representative time periods and geographic areas. Requests for samples of several different types have made it clear that demand exceeds supply, and that low rates of specimen influx were not meeting this demand, particularly in the documentation of recent years. By supporting a graduate assistantship to process marine bird specimens, this project stimulated such sample preservation and made it less geographically and taxonomically haphazard than in the past. During this project 872 seabirds were prepared and archived as skin, and/or skeleton, and tissue samples in the University of Alaska Museum (UAM). This was 45% more than forecast when the project began. A snowballing effect has occurred, both in the deposition of more specimens and in the level of interest in this new material. Equally important has been the graduate training opportunity that this support provided, a student opportunity with continuing commitment by the Museum. This support served as a platform from which Deborah Rocque completed her doctoral degree. Thirteen visitors to the collection have used seabird specimens for their research, and ten loans have been made to researchers worldwide studying Alaska seabirds. In sum, the project has been very successful. This success will be built upon as we continue to preserve and archive seabirds and as researchers continue to capitalize on this important and growing research resource.

Introduction

More than 100 species of Alaska birds depend on marine environments. These species occupy three trophic levels and represent a major component of the nation's marine ecosystems. These birds are vulnerable to both natural and anthropogenic changes (e.g., Outer Continental Shelf activities) and are also politically sensitive animals because they are protected by international treaties with Russia, Japan, Canada, and Mexico. Also, many are a source of food for humans. Birds have long served as environmental indicators—"canaries in the coalmine"—and specimens representing baseline conditions have been crucial for documenting both natural and anthropogenic changes. Perhaps the most widely recognized example of this was the use of historic museum egg collections to demonstrate the effects of increased concentrations of DDT on the reproduction of birds occupying higher trophic levels (e.g., Peregrine Falcons, *Falco peregrinus*). A more recent example is the use of

historic bird specimens to document the effects of runoff contaminants into marine ecosystems in California. The bottom line is that samples that temporally span change events, or at least document conditions in change and non-change areas, are crucial for comparative studies.

Providing samples to support environmental research is an increasingly important function of natural history museums. But with limited resources to apply to broad taxonomic, geographic, and scientific demands, museums do well to cover even a few areas adequately. Many of the researchers making sample requests to the University of Alaska Museum are studying questions directly relevant to the framework issues of interest to the Minerals Management Service (MMS), and this project—a partnership with MMS, through the University of Alaska Coastal Marine Institute (CMI)—has enabled marine bird samples to be actively brought in and preserved for this research community. Requests for Alaska marine bird samples vary from studies of temporal contrasts of contaminant levels and stable isotope ratios, to comparative systematic studies of population- and species-level genetics and morphology, to synoptic studies for the identification of archaeological material. This collection, although limited in its holdings, provides these researchers with a substantial percentage of the samples pertinent to their questions. It has been clear that this science would be substantially strengthened if more samples were available, and this project has enabled us to begin to meet this objective through the half-time graduate assistantship that it supported to process marine birds.

This project is distinct from other sample preservation projects, and it has begun to fill a major gap in existing sample archiving efforts. It complements existing projects and addresses an identified weakness in the preservation of specimens of higher marine organisms. Our objectives have been to preserve a substantially increased number of marine and coastal bird samples from Alaska for studies ranging from contaminants and stable isotopes to genetics and morphology, and of course to make these samples available to the research community. Alaska seabird specimens were not being archived anywhere at levels sufficient to meet the needs of this research community, and the UA Museum is in a unique position to address this need. These archived samples enable researchers to test numerous hypotheses, particularly those addressing environmental changes from events such as contaminations and other OCS activities that potentially impact Alaska's marine environments.

Methods

One of our most important goals in sample archiving is to maximize the usefulness of each individual bird to the scientific community. When possible, we preserve a combination skin/skeleton prep, two tissue samples, and stomach contents from each bird. We use no chemicals in the preparation process, except when a specimen is particularly fatty; in these cases the fat remaining after fleshing the skin is often removed with a solvent (e.g., mineral spirits). Skin and skeleton preparations are archival in quality and are expected to last for centuries. Tissue samples are placed in two, 2-mL plastic cryovials and archived at -70°C in the Alaska Frozen Tissue Collection (AFTC). Stomach contents are preserved in isopropyl alcohol.

Results

This project had tremendous direct and indirect effects on seabird sample archiving at the University of Alaska Museum (Figure 1). It produced substantially more archived specimens than the initial projection: 600 were projected in the proposal; 872 were preserved, or 45% more than forecast. It also served as a platform of support from which doctoral student Deborah Rocque was recruited and accepted into our program (Department of Biology & Wildlife) and under which she completed much of her dissertation research [Rocque 2003]. This graduate student training opportunity has been continued by the museum. An excerpt from Dr. Rocque's dissertation research is provided in Appendix 1.

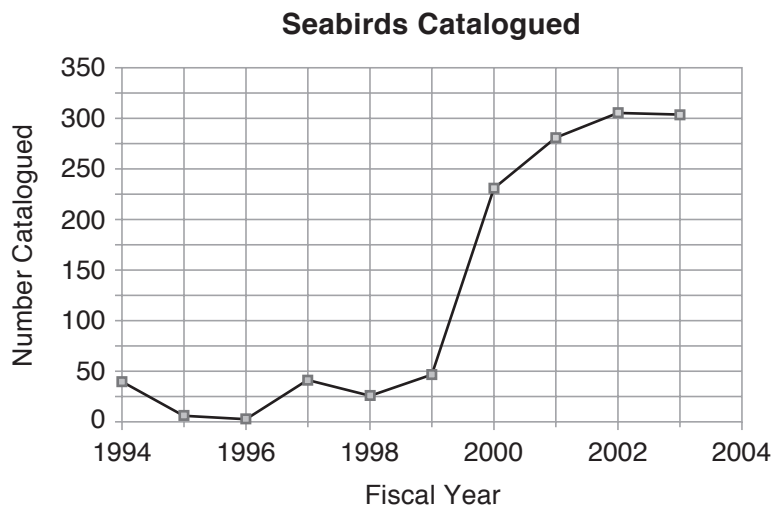


Figure 1. Summary of the number of specimens of 20 seabird genera catalogued into the UAM bird collection annually since 1994. The dramatic increase after 1999 is due to this project, and this rate has continued past the end of the project, as intended.

The seabird specimens preserved and archived represent the core product and result of this project. Appendix 2 provides a breakdown of the taxonomic and geographic distributions of these specimens. Both taxonomic and geographic coverage were broad, as befits the diverse coastal regions and avifauna of the state. We processed both salvaged and actively collected specimens, and we chose birds to process based on sample gaps. Many excellent series were preserved, increasing the scientific utility of the specimens by enhancing the sample sizes available. These specimens will provide an excellent baseline of samples upon which to undertake future studies contrasting changes across time and space.

This project has had a considerable positive effect in raising the profile of seabird specimen archiving and in publicizing its importance. Consequently, more specimens are being salvaged and more are being deposited here. Further, the scientific importance of these activities is causing others to be more proactive in these efforts. One important example of this is the U.S. Fish & Wildlife Service (USFWS)–initiated project “Demography of seabirds in Alaska fisheries,” in which we are processing birds obtained by USFWS and the National Oceanic and Atmospheric Administration (NOAA) as by-catch in the longline fishery. This project supports an undergraduate student. Another important example is the increased deposition of the federally-listed sea ducks *Somateria fischeri* (Spectacled Eider; $N = 8$) and *Polysticta stelleri* (Steller’s Eider; $N = 11$; Appendix 2). The increased attention that these species are receiving as federally-listed taxa increased the rate at which dead individuals have been found and salvaged. Historically, getting these specimens into an appropriate repository has not always been done. We’ve even received specimens after the necropsy process, which is a great positive step in cooperation for long-term sample archiving. These specimens have incalculable scientific value, and we’re pleased that others are beginning to realize this and deposit them with UAM.

Collection Growth

Figure 1, which summarizes 20 genera, shows that this project continues to have a major impact on UAM seabird holdings. It is important to reiterate that these samples, representing unique points in time and geographic space, are not being replicated elsewhere.

During the course of the project our archiving of specimens taken for specific research projects became an important added benefit to this sample archiving project. Vouchering this material is particularly good in two ways. First, it preserves specimens already known to be useful for pertinent scientific questions. Secondly, it maximizes the scientific utility of birds already collected by making them available to other researchers for other questions. This project was important in cementing such research/repository partnerships, and the quality of the preserved material is enhanced by being used for research before it is even deposited. Alan Springer was particularly important in these efforts, and George Divoky’s work also contributed high-quality specimens.

Collection Use

Use of archived seabirds in the UAM collection has increased in frequency and diversity during this project—largely as a consequence of the increased profile that seabirds have had here and the increased recognition of UAM as a seabird sample archive. The rate of seabird sample loans and visits to examine seabird specimens has approximately doubled during the project’s three years (Table 1).

The collection is accessible to users through appointment and specimen loans. Guidelines for prospective users are available through our web site (<http://www.uaf.edu/museum/bird>).

Our database is presently undergoing a major transition; a preview can be seen at (<http://arctos.database.museum/SpecimenSearch.cfm>). The bird collection is of course integrally related to the Alaska Frozen Tissue Collection (<http://www.uaf.edu/museum/af>), a UAM resource with an important history of development with CMI-MMS funding.

Two of our first loans of seabird samples went straight to the purpose behind this project. One was for Vicki Friesen’s (Queen’s University, Ontario) genetics study comparing Prince William Sound seabird populations with Aleutian populations unaffected by the *Exxon Valdez* oil spill. This request demonstrated the importance of having comparative material available from outside of areas affected (or potentially affected) by petroleum development. Some of these birds were processed specifically to meet this request. Another loan was made to George Divoky (University of Alaska Fairbanks [UAF] Institute of Arctic Biology) for a retrospective study of mercury loads as reflected in feathers (Arctic Ocean).

Table 1. Annual rates of seabird sample loans and on-site visits to examine seabird specimens in the UAM bird collection during this project.

	Loans	Visits
Year 1	3	2
Year 2	3	4
Year 3	4	7

A loan of seabird samples for stable isotope analyses was used in a UAF master’s thesis [Abromaitis 2000]. Rocque [2003] also used seabird samples from this project for stable isotope analyses. Kirstin Janssen, a Ph.D. student at the University of Tromsø, Norway, is using genetic samples for her dissertation research on color polymorphisms and population genetics in Parasitic Jaegers (*Stercorarius parasiticus*). Nick Mundy of Cambridge University is using genetic samples of Alaska’s other two species of jaeger (*Stercorarius*) for similar studies (and he and Janssen are collaborating with the use of tissues sent earlier to Norway). Laurène Gay, a Ph.D. student at the Centre for Functional and Evolutionary Ecology, National Centre for Scientific Research (CEFE CNRS) in Montpellier, France, is using tissues of several gull species in his research on hybridization and selection in large, white-headed gulls. Kevin McCracken and Sarah Sonsthagen are using genetic samples of archived Common Eider (*Somateria molissima*) tissues for a CMI-MMS-funded study of the genetics of this species in Alaska. Dr. McCracken is also studying genetics in other Holarctic ducks. Peter Houde, New Mexico State University, is using puffin genetic samples in his molecular phylogenetics research. University of Washington Ph.D. student Hollie Walsh is using albatross (*Diomedea*) genetic samples in her genetics research. George Divoky is using

Black Guillemot (*Cepphus grylle*) feathers for stable isotope studies. Scott Hatch (U.S. Geological Survey, Biological Resources Division [USGS-BRD]) is examining *Fulmarus glacialis* population genetics. Other research projects are in development; few are yet published, but a list of those that are is given in the Study Products section.

Many visits have been made to the UAM bird collection during the course of the project to examine eider specimens, reflecting the attention being paid to this group of seabirds due to population declines and the federal listing of two eider species. These uses have varied from artists using eider specimens as models (several independent visits) to students working with eider specimens for their research projects, to researchers examining historic material of the two threatened species (several independent visits). It is clear that UAM is now an important repository for this group of birds, and this project made a big difference in the number of specimens available (see Appendix 2). Thus far there has not been competition for use of these specimens; many researchers are benefiting from them.

Other visiting researchers found recent material preserved by this project to be useful in their studies. One was studying Alaska gulls; another was synthesizing data on the birds of the Pribilofs. Jeb and April Benson came to use the *Fratercula cirrhata* (Tufted Puffin) specimens for the Life Histories of North American Birds account, and Chris Thompson came to examine specimens of *Brachyramphus* murrelets for his study of molts and plumages in this group. Robert Day (ABR, Inc.) used the collection to continue his studies of *Aethia pygmaea* (Whiskered Auklet). An archaeologist found our seabird bones to be useful for his research project, and recent seabird specimens also proved useful for a summary of the birds of St. Matthew Island in the Bering Sea [Winker et al. 2002].

Many other loans continue to be made to researchers from around the world studying Alaska seabirds. A scientist from Belgium is using the UAM bird collection to study variation in gull wings (*Larus*), and most of the specimens he is using are the direct result of this project. We sent specimen data for North Pacific *Puffinus griseus* to a researcher in New Zealand (where these birds breed; the North Pacific is part of their nonbreeding range). We also sent data to a researcher in France studying the sex and age effects of longline mortalities in albatross.

Discussion

The activities surrounding this project and the specimens generated from it have had a snowball effect in both the interest and use of seabird specimens at UAM. The influx of seabird material was greater than we had predicted, and our processing of these samples met the challenge, resulting in substantially more preserved specimens than anticipated at the project's beginning. In sum, the project has been a resounding success. This success will be built upon as we continue to preserve and archive seabirds and researchers continue to capitalize on this important and growing research resource.

Acknowledgements

We remain grateful to all biologists who obtain dead seabirds, label and freeze them, and deposit them with the University of Alaska Museum. Particularly important on this project have been the efforts of Robert Suydam, Alan Springer, Jeff Williams, Vernon Byrd, John Piatt, Shannon Fitzgerald, Ed Melvin, Sharon Davis, George Divoky, and Paula Cullenberg. This work is conducted under a series of permits from the U.S. Fish & Wildlife Service, Convention on the International Trade in Endangered Species (CITES), the Alaska Department of Fish and Game, UAF Institutional Animal Care and Use Committee (IACUC), and the U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS). We thank permitting officers for their continued facilitation of permits. Financial support for this project came from the Minerals Management Service through the University of Alaska Coastal Marine Institute, and the University of Alaska Museum.

Study Products

These theses and publications are not direct products of this project, but they have each used specimens resulting from it in their development:

- Abromaitis, G.E. 2000. A retrospective assessment of primary productivity on the Bering and Chukchi sea shelves using stable isotope ratios in seabirds. M.S. thesis, University of Alaska Fairbanks.
- Piatt, J.F., and A.S. Kitaysky. 2002. Horned Puffin (*Fratercula corniculata*), p. 1–27. In A. Poole and F. Gill [eds.], *The Birds of North America*, No. 611. The Birds of North America, Inc., Philadelphia.
- Rocque, D.A. 2003. Intrinsic markers in avian populations: Explorations in stable isotopes, contaminants, and genetics. Ph.D. dissertation, University of Alaska Fairbanks.
- Rocque, D.A., and K. Winker. 2004. Biomonitoring of contaminants in birds from two trophic levels in the North Pacific. *Environ. Toxicol. Chem.* 23(3):759–766.
- Winker, K., D.D. Gibson, A.L. SOWls, B.E. Lawhead, P.D. Martin and E.P. Hoberg. 2002. The birds of St. Matthew Island, Bering Sea. *Wilson Bull.* 114(4):491–509.

In addition there were approximately five presentations on this project.

References

- Abromaitis, G.E. 2000. A retrospective assessment of primary productivity on the Bering and Chukchi sea shelves using stable isotope ratios in seabirds. M.S. thesis, University of Alaska Fairbanks.
- Rocque, D.A. 2003. Intrinsic markers in avian populations: Explorations in stable isotopes, contaminants, and genetics. Ph.D. dissertation, University of Alaska Fairbanks.
- Winker, K., D.D. Gibson, A.L. SOWls, B.E. Lawhead, P.D. Martin and E.P. Hoberg. 2002. The birds of St. Matthew Island, Bering Sea. *Wilson Bull.* 114(4):491–509.

Appendix 1

An excerpt from Rocque and Winker [2004]

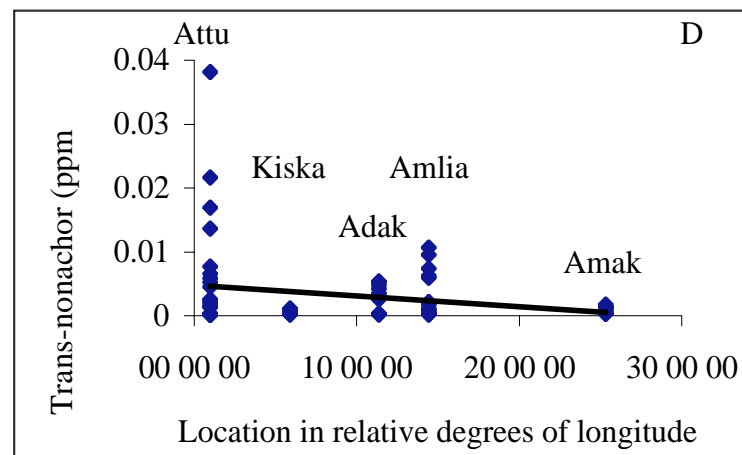
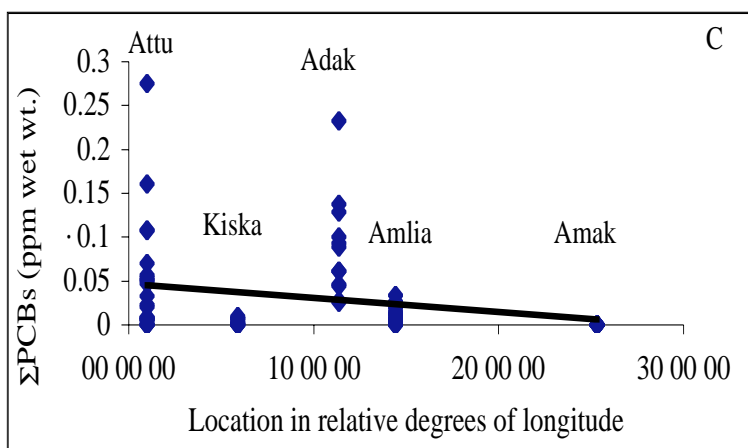
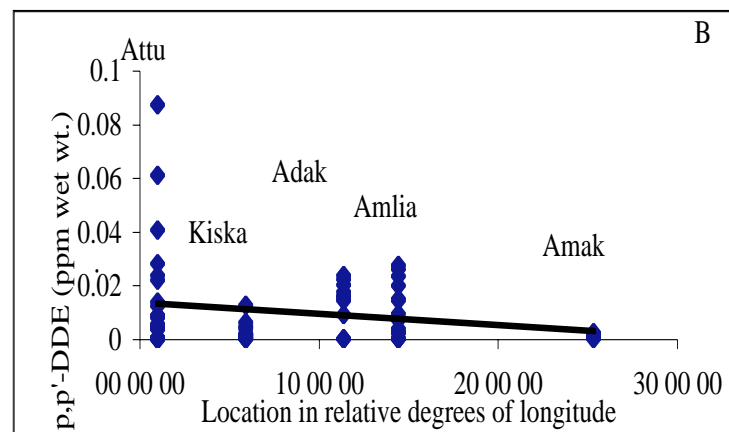
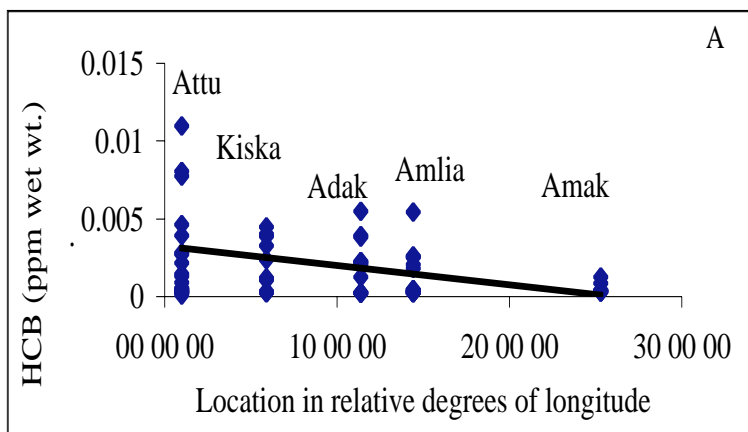
Environmental Toxicology and Chemistry: Vol. 23, No. 3, p. 759–766.

BIOMONITORING OF CONTAMINANTS AMONG BIRDS FROM TWO TROPHIC LEVELS IN THE NORTH PACIFIC. Deborah A. Rocque and Kevin Winker. *University of Alaska Museum, 907 Yukon Drive, Fairbanks, AK 99775-6960, USA*

Abstract—The presence and accumulation of persistent contaminants at high latitudes from long-range transport is an important environmental issue. Atmospheric transport has been identified as the source of pollutants in several arctic ecosystems and has the potential to severely impact high-latitude populations. Elevated levels of contaminants in Aleutian Island avifauna have been documented, but the great distance from potential industrial sources and the region’s complex military history have confounded identification of contaminant origins. We sampled bird species across the natural longitudinal transect of the Aleutian Archipelago to test three contaminant source hypotheses. We detected patterns in some polychlorinated biphenyl congeners and mercury that indicate abandoned military installations as likely local point sources. Carbon isotopes were distinct among island groups, enabling us to rule out transfer through migratory prey species as a contaminant source. The long-range transport hypothesis was supported by significant west-to-east declines in contaminant concentrations for most detected organochlorines and some trace metals. Although relatively low at present, concentrations may increase in Aleutian fauna as Asian industrialization increases and emitted contaminants are atmospherically transported into the region, necessitating continued monitoring in this unique ecosystem.

Key words: Atmospheric transport, Aleutian Islands, Contaminants, Birds, Stable isotopes.

Figure 1. Relationships between atmospherically transported organochlorines in muscle tissue (see Table 1 for sample sizes) of cormorants (*Phalacrocorax* spp.) and relative longitude of sampled Aleutian Islands, Alaska. A) HCB (longitude = -1.24×10^{-8} [HCB] + 0.0328, $R^2 = 0.0709$, $P = 0.0201$); B) p,p'-DDE (longitude = -4.21×10^{-8} [DDE] + 0.0138, $R^2 = 0.0571$, $P = 0.0376$); C) Σ PCB (longitude = -1.62×10^{-7} [Σ PCB] + 0.0472, $R^2 = 0.0618$, $P = 0.0303$); and D) trans-nonachlor (longitude = -1.67×10^{-8} [trans-nonachlor] + 0.0047, $R^2 = 0.0563$, $P = 0.0391$).



Appendix 2

Alphabetical list of seabird specimens of 20 genera processed and archived into the UAM bird collection during the project ($N = 962$). This is a list of all seabirds processed and archived during the project period; although as we processed them we counted specific birds as project-related, this information is not recorded in our collection database.

UAM #	Genus	species	Date	Locality
11107	Aethia	crisatella	09 Mar 2000	56°N 163°19'W
11217	Aethia	crisatella	99 SPR 2000	St Paul Island
11281	Aethia	crisatella	07 Dec 1999	52°24'N 175°43'E
17423	Aethia	crisatella	22 Jun 1999	Kasatochi Island
10126	Aethia	pusilla	06 Jul 1983	St Matthew Island
13575	Aethia	pusilla	23 May 2001	Rat Islands, Kiska Island
17425	Aethia	pusilla	22 Jun 1999	Kasatochi Island
18490	Aethia	pusilla	01 Aug 1987	Little Diomede Island
9877	Aethia	pygmaea	22 Jul 1998	Andreanof Islands, Umak Pass
9878	Aethia	pygmaea	22 Jul 1998	Andreanof Islands, Umak Pass
9879	Aethia	pygmaea	22 Jul 1998	Andreanof Islands, Umak Pass
10197	Aethia	pygmaea	22 Jul 1998	Umak Pass
14170	Aethia	pygmaea	22 Jul 1998	Andreanof Islands, Umak Pass
14840	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14841	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14842	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14843	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14844	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14845	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14846	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
14847	Aethia	pygmaea	22 Jun 1996	Sedanka Pass; 53°52.9'N 166°04.6'W
11038	Anas	acuta	16 May 2000	Bogoslof Island
11642	Anas	acuta	26 Sep 2000	near Dutch Harbor
13135	Anas	acuta	13 May 1999	Near Islands, Shemya Island
14543	Anas	acuta	15 Oct 2000	Attu Island
14686	Anas	acuta	26 May 1974	Rat Islands, Buldir Island
14877	Anas	acuta	03 Jan 2000	Andreanof Islands, Adak Island
13354	Anas	americana	28 May 2001	Near Islands, Shemya Island
15459	Anas	clypeata	04 May 2002	Near Islands, Shemya Island
9191	Anas	crecca	26 May 1999	Near Islands, Shemya Island
9255	Anas	crecca	12 May 1999	Near Islands, Shemya Island
9259	Anas	crecca	17 May 1999	Andreanof Islands, Adak Island
9596	Anas	crecca	18 May 1999	Andreanof Islands, Adak Island
9597	Anas	crecca	18 May 1999	Andreanof Islands, Adak Island
9598	Anas	crecca	21 May 1999	Andreanof Islands, Adak Island
9825	Anas	crecca	23 May 1999	Andreanof Islands, Adak Island
9826	Anas	crecca	03 May 1999	Andreanof Islands, Adak Island
10233	Anas	crecca	28 May 1997	Adak Island
10234	Anas	crecca	06 Jun 1998	Adak Island
10235	Anas	crecca	05 Sep 1997	Adak Island
11042	Anas	crecca	28 May 2000	Andreanof Islands, Adak Island
11043	Anas	crecca	27 May 2000	Andreanof Islands, Adak Island
11334	Anas	crecca	31 May 2000	Near Islands, Shemya Island
11335	Anas	crecca	31 May 2000	Near Islands, Shemya Island
11336	Anas	crecca	27 May 2000	Andreanof Islands, Adak Island
11337	Anas	crecca	28 May 2000	Andreanof Islands, Adak Island
12095	Anas	crecca	28 Aug 1999	Attu Island
13017	Anas	crecca	23 May 2000	Andreanof Islands, Adak Island
13042	Anas	crecca	28 May 1997	Adak Island
13350	Anas	crecca	04 May 2001	Near Islands, Attu Island
13351	Anas	crecca	04 May 2001	Near Islands, Attu Island
13404	Anas	crecca	31 May 2001	Near Islands, Shemya Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
14100	Anas	crecca	08 Jun 2001	Near Islands, Shemya Island
14111	Anas	crecca	17 May 2001	Near Islands, Attu Island
14113	Anas	crecca	19 May 2001	Near Islands, Attu Island
14540	Anas	crecca	17 Oct 2000	Attu Island
14666	Anas	crecca	08 Jun 2001	Near Islands, Shemya Island
14961	Anas	crecca	23 Aug 2001	Izembek, Grant Pt Rd, 55°16'N 162°53'33"W
15024	Anas	crecca	19 May 2002	Attu Island
15098	Anas	crecca	18 Jun 2001	Ugamak Island
17790	Anas	crecca	12 Apr 2002	Near Islands, Shemya Island
17809	Anas	crecca	18 May 2002	Near Islands, Attu Island
17927	Anas	crecca	30 Aug 2001	Izembek NWR
17928	Anas	crecca	23 Aug 2001	Izembek NWR
18088	Anas	crecca	27 Jun 2001	Andreanof Islands, Adak Island
18089	Anas	crecca	25 Jun 2001	Andreanof Islands, Adak Island
18090	Anas	crecca	27 Jun 2001	Andreanof Islands, Adak Island
18091	Anas	crecca	26 Jun 2001	Andreanof Islands, Adak Island
18092	Anas	crecca	27 Jun 2001	Andreanof Islands, Adak Island
18476	Anas	crecca	25 Aug 2001	Izembek NWR, Grant Point Rd
18480	Anas	crecca	29 Aug 2001	Izembek NWR
18489	Anas	crecca	23 Aug 2001	Izembek NWR
18498	Anas	crecca	30 Aug 2001	Izembek NWR
18502	Anas	crecca	12 Apr 2002	Shemya Islands
18510	Anas	crecca	23 Aug 2001	Izembek NWR, Grant Pt Rd
14562	Anas	discors	15 Jun 2001	Prudoe Bay Ops Center
17698	Anas	falcata	22 Sep 2002	Near Islands, Shemya Island
17716	Anas	falcata	22 Sep 2002	Near Islands, Shemya Island
14000	Anas	formosa	24 Sep 2001	St George Island
17699	Anas	formosa	25 Aug 2002	Near Islands, Shemya Island
9359	Anas	penelope	12 May 1999	Near Islands, Shemya Island
10008	Anas	penelope	16 May 1999	Near Islands, Shemya Island
11803	Anas	penelope	11 May 2000	Near Islands, Shemya Island
11804	Anas	penelope	11 May 2000	Near Islands, Shemya Island
14529	Anas	penelope	25 Sep 2001	Shemya Island
14538	Anas	penelope	17 Oct 2000	Attu Island
15026	Anas	penelope	11 May 2002	Attu Is, Peaceful River, Runway ponds
17756	Anas	penelope	21 Apr 2002	Near Islands, Shemya Island
17871	Anas	penelope	19 May 2002	Near Islands, Attu Is, Murder Point
11193	Anas	platyrhynchos	19 May 2000	Chena River Flood Control Project
11327	Anas	platyrhynchos	27 May 2000	Near Islands, Shemya Island
11328	Anas	platyrhynchos	27 May 2000	Near Islands, Shemya Island
11613	Anas	platyrhynchos	08 Oct 2000	Attu Island
13480	Anas	platyrhynchos	03 Jun 2001	Near Islands, Shemya Island
13528	Anas	platyrhynchos	01 Jun 2001	Near Islands, Attu Island
13955	Anas	platyrhynchos	01 Jun 2001	Near Islands, Attu Island
14195	Anas	platyrhynchos	03 Jun 2001	Near Islands, Shemya Island
14530	Anas	platyrhynchos	27 Aug 2001	Izembek NWR, Grant Pt Rd
14531	Anas	platyrhynchos	18 May 2001	Attu
14532	Anas	platyrhynchos	07 May 2001	Attu Is, Henderson Pt
14534	Anas	platyrhynchos	27 Aug 2001	Cold Bay, near Airport
14535	Anas	platyrhynchos	30 Aug 2001	Izembek NWR
14537	Anas	platyrhynchos	17 Oct 2000	Attu Island
15021	Anas	platyrhynchos	01 Jun 2001	Attu Island
15060	Anas	platyrhynchos	05 Jun 2000	Near Is, Shemya Is, 52°43'N 174°07'E
17792	Anas	platyrhynchos	12 Apr 2001	Kodiak Island
17849	Anas	platyrhynchos	13 Apr 2001	Kodiak Island
17850	Anas	platyrhynchos	27 Aug 2001	Izembek NWR, Grant Point Road
17851	Anas	platyrhynchos	28 Aug 2001	Izembek NWR, Grant Point
18087	Anas	platyrhynchos	23 Dec 2000	Andreanof Islands, Adak Island
18485	Anas	platyrhynchos	27 Aug 2001	Izembek NWR

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
15458	Anas	querquedula	03 Jun 2002	Near Islands, Shemya Island
15490	Anas	strepera	09 Jun 2002	Deadhorse
15491	Anas	strepera	09 Jun 2002	Deadhorse
14168	Anser	albifrons	17 May 2001	Gravina Island
9050	Aythya	americana	28 May 1999	Near Islands, Shemya Island
9274	Aythya	americana	28 May 1999	Near Islands, Shemya Island
13142	Aythya	collaris	15 Dec 1999	Prince of Wales Island, Harris River
9256	Aythya	fuligula	25 May 1999	Near Islands, Shemya Island
13561	Aythya	fuligula	04 Jun 2001	Near Islands, Attu Island
9240	Aythya	marila	16 May 1999	Near Islands, Shemya Island
11614	Aythya	marila	08 Oct 2000	Attu
13433	Aythya	marila	09 Jun 1998	Andreanof Islands, Adak Island
14563	Aythya	marila	13 Oct 2001	Shemya Island
14700	Aythya	valisineria	29 Dec 2001	Andreanof Islands, Adak Is, Sweeper
9623	Cepphus	columba	09 Jul 1978	Nunivak Island, Mikisagimiut
9880	Cepphus	columba	16 Jun 1998	Andreanof Islands, Great Sitkin Island
9881	Cepphus	columba	16 Jun 1998	Andreanof Islands, Great Sitkin Island
9882	Cepphus	columba	22 Jul 1998	Andreanof Islands, Tanaklak Island
9883	Cepphus	columba	16 Jun 1998	Andreanof Islands, Great Sitkin Island
10010	Cepphus	columba	22 May 1998	Rat Islands, Buldir Island
10015	Cepphus	columba	17 Jun 1998	Andreanof Islands, Adak Is, Beyer Bay
10116	Cepphus	columba	17 Jul 1998	Chowiet Island
10119	Cepphus	columba	17 Jul 1998	Chowiet Island
10196	Cepphus	columba	17 Jul 1998	Chowiet Island
10204	Cepphus	columba	17 Jun 1998	Adak Island, Beyer Bay
10205	Cepphus	columba	99 Jun 1998	Great Sitkin Island
11473	Cepphus	columba	17 Jul 1998	Homer, Homer Spit
11600	Cepphus	columba	16 Jun 1998	Andreanof Islands, Great Sitkin Island
13197	Cepphus	columba	99 UNK 2000	Andreanof Islands, Adak Island
13904	Cepphus	columba	17 Jun 1998	Adak Island, Beyer Bay
9434	Cepphus	grylle	21 Jan 1999	Nuiqsut
10678	Cepphus	grylle	20 Dec 1993	"Red Dog Road by post", Red Dog Mine
14184	Cepphus	grylle	14 Aug 2000	Cooper Island
14185	Cepphus	grylle	24 Aug 2000	Cooper Island
14186	Cepphus	grylle	14 Aug 2000	Cooper Island
14187	Cepphus	grylle	15 Aug 2000	Cooper Island
14188	Cepphus	grylle	24 Aug 2000	Cooper Island
14667	Cepphus	grylle	15 Aug 2000	Cooper Island
14668	Cepphus	grylle	15 Aug 2000	Cooper Island
17795	Cepphus	grylle	08 Jul 1983	Cape Lisburne
10736	Diomedea	immutabilis	99 May 2000	approx 600 mi SE of Adak Island
10737	Diomedea	immutabilis	99 May 2000	approx 600 mi SE of Adak Island
10738	Diomedea	immutabilis	99 May 2000	approx 600 mi SE of Adak Island
13722	Diomedea	immutabilis	23 May 1999	Kanaga Deceit Point 51°41'N 177°19'W
13723	Diomedea	immutabilis	23 Jun 2000	51°27'N 178°30'W
14581	Diomedea	immutabilis	07 Dec 2001	55°39'N 169°25'W
14640	Diomedea	immutabilis	07 Dec 2001	55°39'N 169°25'W
14641	Diomedea	immutabilis	30 Nov 2001	
14777	Diomedea	immutabilis	01 Dec 2001	
14791	Diomedea	immutabilis	24 Feb 2002	North Pacific Ocean; 52°10'N 174°03'W
14792	Diomedea	immutabilis	30 Nov 2001	North Pacific Ocean
14887	Diomedea	immutabilis	24 Feb 2002	North Pacific Ocean; 52°10'N 174°03'W
14888	Diomedea	immutabilis	24 Feb 2002	North Pacific Ocean; 52°10'N 174°03'W
10152	Diomedea	nigripes	29 Dec 1997	
18130	Diomedea	nigripes	14 Oct 2002	North Pacific Ocean
18131	Diomedea	nigripes	06 Dec 2002	North Pacific Ocean
18132	Diomedea	nigripes	14 Oct 2002	North Pacific Ocean
18133	Diomedea	nigripes	13 Dec 2002	North Pacific Ocean
18134	Diomedea	nigripes	11 Oct 2002	North Pacific Ocean

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
18135	Diomedea	nigripes	11 Oct 2002	North Pacific Ocean
18136	Diomedea	nigripes	15 Dec 2002	North Pacific Ocean
9338	Fratercula	cirrhata	20 Aug 1998	Cordova, Controller Bay
9519	Fratercula	cirrhata	29 May 1998	Flat Islands
11254	Fratercula	cirrhata	08 Jul 1989	Kurile Islands, Dolgaya Rock, "Lovushki Is"
11421	Fratercula	cirrhata	17 Aug 2000	Rat Islands, Amchitka Island
11422	Fratercula	cirrhata	17 Aug 2000	Rat Islands, Amchitka Island
11423	Fratercula	cirrhata	17 Aug 2000	Rat Islands, Amchitka Island
11424	Fratercula	cirrhata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11425	Fratercula	cirrhata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11426	Fratercula	cirrhata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11427	Fratercula	cirrhata	17 Aug 2000	Rat Islands, Amchitka Is, Ivakin Point
11428	Fratercula	cirrhata	24 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11429	Fratercula	cirrhata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11430	Fratercula	cirrhata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11431	Fratercula	cirrhata	17 Aug 2000	Rat Islands, Amchitka Island
11445	Fratercula	cirrhata	99 May 2000	N Pacific Ocean, 600 mi SE of Adak Is
12362	Fratercula	cirrhata	23 Feb 1978	Ugaiushak Is
14848	Fratercula	cirrhata	27 Sep 1995	Cape Chiniak
11432	Fratercula	corniculata	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11487	Fratercula	corniculata	06 Aug 1997	King Cove
11488	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11489	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11490	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11491	Fratercula	corniculata	04 Jun 1998	Rat Islands, Semisopochnoi Island
11492	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11493	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11494	Fratercula	corniculata	22 May 1998	Rat Islands, Buldir Island
11495	Fratercula	corniculata	99 UNK 1996	Cold Bay
11610	Fratercula	corniculata	99 UNK 19XX	Buldir Island
11611	Fratercula	corniculata	99 UNK 19XX	Buldir Island
13010	Fratercula	corniculata	15 Aug 2000	Rat Islands, Kiska Island
17421	Fratercula	corniculata	10 Aug 1999	Buldir Island
17424	Fratercula	corniculata	24 Jul 1999	Buldir Island
10773	Fulmarus	glacialis	99 SUM 199X	
11450	Fulmarus	glacialis	99 May 2000	N Pacific Ocean, ca 600 mi SE Adak Is
11586	Fulmarus	glacialis	23 Sep 2000	56°22'N 167°35'W
11587	Fulmarus	glacialis	16 Sep 2000	
11588	Fulmarus	glacialis	22 Sep 2000	56°19'N 167°52'W
11589	Fulmarus	glacialis	25 Sep 2000	56°22'N 167°35'W
11590	Fulmarus	glacialis	25 Sep 2000	56°22'N 167°35'W
11592	Fulmarus	glacialis	16 Sep 2000	
11623	Fulmarus	glacialis	19 Aug 2000	56°38.8'N 170°12.8'W
11624	Fulmarus	glacialis	22 Sep 2000	56°14'N 167°49'W
11625	Fulmarus	glacialis	25 Sep 2000	56°22'N 167°35'W
11626	Fulmarus	glacialis	25 Sep 2000	56°20'N 167°35'W
11627	Fulmarus	glacialis	23 Sep 2000	
11628	Fulmarus	glacialis	17 Aug 2000	
11633	Fulmarus	glacialis	18 Aug 2000	
11634	Fulmarus	glacialis	18 Aug 2000	56°30'N 170°05'W
11635	Fulmarus	glacialis	10 Aug 2000	
11636	Fulmarus	glacialis	17 Aug 2000	56°58'N 170°12.8'W
13011	Fulmarus	glacialis	18 Aug 2000	Rat Islands, Amchitka Island
14072	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14073	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14074	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14075	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14076	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14077	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
14078	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14079	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14080	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14081	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14082	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14083	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14084	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14085	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14086	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14087	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14088	Fulmarus	glacialis	19 Apr 2001	Rat Islands, Amchitka Island
14105	Fulmarus	glacialis	25 Apr 2001	Andreanof Islands, Adak Island
14577	Fulmarus	glacialis	03 Dec 2001	55°37'N 168°02'W
14578	Fulmarus	glacialis	06 Dec 2001	59°25'N 172°39'W
14579	Fulmarus	glacialis	06 Dec 2001	59°25'N 172°39'W
14580	Fulmarus	glacialis	04 Dec 2001	57°18'N 173°17'W
14582	Fulmarus	glacialis	02 Dec 2001	55°44'N 167°56'W
14583	Fulmarus	glacialis	07 Dec 2001	58°42'N 176°35'W
14584	Fulmarus	glacialis	03 Dec 2001	55°37'N 168°02'W
14585	Fulmarus	glacialis	99 Dec 2001	56°21'N 169°39'W
14586	Fulmarus	glacialis	03 Dec 2001	55°37'N 168°02'W
14626	Fulmarus	glacialis	07 Dec 2001	57°27'N 173°52'W
14629	Fulmarus	glacialis	29 Nov 2001	
14630	Fulmarus	glacialis	01 Dec 2001	56°30'N 171°04'W
14631	Fulmarus	glacialis	01 Dec 2001	56°30'N 171°04'W
14632	Fulmarus	glacialis	28 Nov 2001	56°36'N 170°33'W
14633	Fulmarus	glacialis	28 Nov 2001	56°30'N 170°37'W
14634	Fulmarus	glacialis	01 Dec 2001	56°30'N 171°04'W
14635	Fulmarus	glacialis	01 Dec 2001	
14636	Fulmarus	glacialis	28 Nov 2001	56°30'N 170°37'W
14637	Fulmarus	glacialis	27 Nov 2001	
14638	Fulmarus	glacialis	29 Nov 2001	
14639	Fulmarus	glacialis	30 Nov 2001	
14642	Fulmarus	glacialis	03 Dec 2001	55°40'N 168°07'W
14643	Fulmarus	glacialis	28 Nov 2001	58°15'N 172°46'W
14645	Fulmarus	glacialis	09 Dec 2001	58°43'N 176°22'W
14646	Fulmarus	glacialis	03 Dec 2001	55°37'N 168°02'W
14716	Fulmarus	glacialis	21 Feb 2002	North Pacific Ocean; 56°21'N 170°53'W
14717	Fulmarus	glacialis	05 Feb 2002	North Pacific Ocean; 56°34'N 168°51'W
14718	Fulmarus	glacialis	03 Feb 2002	North Pacific Ocean; 56°19'N 170°19'W
14719	Fulmarus	glacialis	02 Feb 2002	North Pacific Ocean; 56°07'N 169°58'W
14720	Fulmarus	glacialis	03 Feb 2002	North Pacific Ocean; 56°19'N 170°19'W
14721	Fulmarus	glacialis	14 Feb 2002	North Pacific Ocean; 56°06'N 170°15'W
14722	Fulmarus	glacialis	17 Feb 2002	North Pacific Ocean; 56°15'N 166°51'W
14723	Fulmarus	glacialis	12 Feb 2002	North Pacific Ocean; 56°32'N 171°21'W
14724	Fulmarus	glacialis	21 Feb 2002	North Pacific Ocean; 56°21'N 170°53'W
14725	Fulmarus	glacialis	28 Feb 2002	North Pacific Ocean; 56°52'N 172°44'W
14726	Fulmarus	glacialis	28 Feb 2002	North Pacific Ocean; 56°52'N 172°44'W
14727	Fulmarus	glacialis	28 Feb 2002	North Pacific Ocean; 56°52'N 172°44'W
14728	Fulmarus	glacialis	28 Feb 2002	North Pacific Ocean; 56°52'N 172°44'W
14729	Fulmarus	glacialis	99 Feb 2002	North Pacific Ocean
14730	Fulmarus	glacialis	07 Jan 2002	North Pacific Ocean; 56°29'N 170°30'W
14731	Fulmarus	glacialis	22 Feb 2002	North Pacific Ocean; 56°31'N 167°57'W
14732	Fulmarus	glacialis	99 WIN 2002	North Pacific Ocean
14733	Fulmarus	glacialis	18 Feb 2002	North Pacific Ocean; 56°02'N 170°04'W
14734	Fulmarus	glacialis	12 Feb 2002	North Pacific Ocean; 56°27'N 168°01'W
14735	Fulmarus	glacialis	25 Feb 2002	North Pacific Ocean; 56°34'N 168°00'W
14738	Fulmarus	glacialis	17 Feb 2002	North Pacific Ocean; 56°29'N 167°00'W
14742	Fulmarus	glacialis	15 Jan 2002	56°29'N 171°08'W

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
14743	Fulmarus	glacialis	13 Feb 2002	52°36'N 185°24'W
14744	Fulmarus	glacialis	14 Feb 2002	56°20'N 171°03'W
14745	Fulmarus	glacialis	12 Mar 2002	57°27'N 173°55'W
14746	Fulmarus	glacialis	28 Nov 2001	58°15'N 172°46'W
14747	Fulmarus	glacialis	03 Dec 2001	55°37'N 168°02'W
14748	Fulmarus	glacialis	06 Dec 2001	59°25'N 172°39'W
14749	Fulmarus	glacialis	28 Nov 2001	58°13'N 172°37'W
14750	Fulmarus	glacialis	01 Feb 2002	56°29'N 167°00'W
14751	Fulmarus	glacialis	01 Feb 2002	56°27'N 168°45'W
14752	Fulmarus	glacialis	03 Jan 2002	54°47'N 166°03'W
14790	Fulmarus	glacialis	05 Dec 2001	North Pacific Ocean; 54°48'N 165°24'W
14828	Fulmarus	glacialis	17 Jan 2002	North Pacific Ocean; 56°49'N 167°27'W
18117	Fulmarus	glacialis	09 Oct 2002	North Pacific Ocean
18118	Fulmarus	glacialis	18 Nov 2002	North Pacific Ocean
18119	Fulmarus	glacialis	23 Nov 2002	North Pacific Ocean
18120	Fulmarus	glacialis	12 Oct 2002	North Pacific Ocean
18121	Fulmarus	glacialis	17 Sep 2002	North Pacific Ocean
18122	Fulmarus	glacialis	29 Nov 2002	North Pacific Ocean
18123	Fulmarus	glacialis	09 Dec 2002	North Pacific Ocean
18124	Fulmarus	glacialis	18 Nov 2002	North Pacific Ocean
18125	Fulmarus	glacialis	18 Oct 2002	North Pacific Ocean
18126	Fulmarus	glacialis	12 Nov 2002	North Pacific Ocean
18127	Fulmarus	glacialis	17 Mar 2002	North Pacific Ocean
18128	Fulmarus	glacialis	20 Nov 2002	North Pacific Ocean
18129	Fulmarus	glacialis	14 Dec 2002	North Pacific Ocean
18497	Fulmarus	glacialis	17 Nov 2002	North Pacific
18499	Fulmarus	glacialis	99 UNK XXXX	North Pacific
18513	Fulmarus	glacialis	13 Apr 2002	North Pacific
9432	Gavia	adamsii	99 Aug 1993	Barrow?
9433	Gavia	adamsii	08 Aug 1992	Point Barrow
11045	Gavia	adamsii	16 Mar 1999	Cook Inlet?
11145	Gavia	adamsii	06 Jun 1977	4 mi east of Sledge Island
13967	Gavia	adamsii	07 Aug 2000	Barrow
13988	Gavia	adamsii	99 Aug 2000	Barrow
14688	Gavia	adamsii	12 Aug 1989	Rat Islands, Rat Island
9424	Gavia	immer	99 UNK 199X	
14548	Gavia	immer	99 UNK 2000	
9339	Gavia	pacifica	99 Aug 1997	Barrow
9458	Gavia	pacifica	09 Oct 1984	Point Barrow
9605	Gavia	pacifica	28 Jun 1998	Barrow
9644	Gavia	pacifica	99 UNK 19XX	Old Chevak
13143	Gavia	pacifica	99 Feb 2000	Revillagigedo Island, Ketchikan
14110	Gavia	pacifica	31 Jul 2000	Barrow
17683	Gavia	pacifica	24 Jul 2002	Barrow
18946	Gavia	pacifica	26 Aug 2002	Barrow
9653	Gavia	stellata	99 UNK 19XX	Old Chevak
13486	Gavia	stellata	04 Jun 2001	Near Islands, Attu Is, W Massacre Valley
13601	Gavia	stellata	26 Jul 2001	13 Mile Taylor Hwy
13993	Gavia	stellata	31 Jul 2000	Barrow
9410	Larus	argentatus	23 May 1999	Near Islands, Shemya Island
9606	Larus	argentatus	25 Jul 1991	Barrow
13016	Larus	argentatus	05 Jun 1997	Cape Romanzof
14568	Larus	argentatus	28 May 1999	St Paul Island
14674	Larus	argentatus	04 Jun 1991	Rat Islands, Buldir Island
15154	Larus	argentatus	03 May 2002	48°22'N 92°22'E
15159	Larus	argentatus	04 May 2002	47°52'N 92°00'E
15164	Larus	argentatus	29 Apr 2002	47°52'N 92°00'E
18034	Larus	californicus	24 Aug 2002	Revillagigedo Island, Ketchikan
9061	Larus	canus	03 Jun 1999	Kodiak Island, Kalsin Bay

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
11014	Larus	canus	17 May 2000	Near Islands, Shemya Island
13377	Larus	canus	20 May 2001	Near Islands, Shemya Island
14682	Larus	canus	14 Mar 2002	Fox Islands, Unalaska Is, Iliuliuk Bay
14803	Larus	canus	14 Mar 2002	Fox Islands, Unalaska Is, Iliuliuk Bay
11218	Larus	glaucescens	16 Jun 2000	
11435	Larus	glaucescens	15 Aug 2000	Rat Islands, Kiska Is, Kiska Harbor
11436	Larus	glaucescens	17 Aug 2000	Rat Islands, Amchitka Is, Constantine Harbor
11437	Larus	glaucescens	24 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11438	Larus	glaucescens	26 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
11439	Larus	glaucescens	17 Aug 2000	Rat Islands, Amchitka Is, Ivakin Point
11440	Larus	glaucescens	17 Aug 2000	Rat Islands, Amchitka Is, Constantine Harbor
11441	Larus	glaucescens	01 Sep 2000	Andreanof Islands, Adak Island
11442	Larus	glaucescens	15 Aug 2000	Rat Islands, Amchitka Is, Constantine Harbor
11443	Larus	glaucescens	15 Aug 2000	Rat Islands, Kiska Is, Kiska Harbor
11444	Larus	glaucescens	15 Aug 2000	Rat Islands, Kiska Is, Kiska Harbor
11449	Larus	glaucescens	15 Aug 2000	Rat Islands, Kiska Island
11469	Larus	glaucescens	26 May 1998	St Paul Island
11597	Larus	glaucescens	30 May 1998	St Paul Island
11637	Larus	glaucescens	17 Sep 2000	
11638	Larus	glaucescens	24 Aug 2000	Adak Island, Kulik Bay
11639	Larus	glaucescens	24 Aug 2000	Adak Island, Kulik Bay
11640	Larus	glaucescens	24 Aug 2000	Adak Island, Kulik Bay
11641	Larus	glaucescens	24 Aug 2000	Adak Island, Kulik Bay
14567	Larus	glaucescens	04 Jun 1999	Shemya Island
14800	Larus	glaucescens	04 Oct 2001	North Pacific Ocean
17427	Larus	glaucescens	08 Jul 1999	Buldir Island
17794	Larus	glaucescens	01 May 2002	Near Islands, Shemya Island
9257	Larus	hyperboreus	25 Jul 1998	Taylor Highway
9607	Larus	hyperboreus	22 Sep 1998	Barrow
9624	Larus	hyperboreus	19 Jun 1992	Bethel
9625	Larus	hyperboreus	16 Jun 1976	Old Chevak field camp
10029	Larus	hyperboreus	24 May 1999	Andreanof Islands, Adak Island
10762	Larus	hyperboreus	18 Aug 1995	Barrow
10768	Larus	hyperboreus	20 Jul 1995	Barrow
13752	Larus	hyperboreus	09 Aug 1999	Barrow
13964	Larus	hyperboreus	11 Oct 2001	Barrow
13984	Larus	hyperboreus	12 Oct 2001	Barrow
13992	Larus	hyperboreus	12 Oct 2001	Barrow
9192	Larus	ridibundus	17 May 1999	Near Islands, Shemya Island
11112	Larus	ridibundus	99 May 2000	St Paul Island
10022	Larus	schistisagus	10 Jun 1999	St Paul Island
13155	Larus	schistisagus	26 Sep 2000	Point Barrow
9364	Oceanodroma	furcata	03 Aug 1998	Andreanof Islands, Adak Island
11398	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11399	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11400	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11401	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11402	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11403	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11404	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11405	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11406	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11407	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11408	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11409	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11410	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11411	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11412	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11413	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
11414	Oceanodroma	furcata	27 Aug 2000	Andreanof Islands, Adak Island
11484	Oceanodroma	furcata	06 May 1998	Andreanof Islands, Adak Island
11485	Oceanodroma	furcata	03 Jun 1998	Andreanof Islands, Adak Island
11819	Oceanodroma	furcata	27 Aug 2000	Adak Island
13756	Oceanodroma	furcata	04 Jun 1996	Attu Island
14346	Oceanodroma	furcata	08 Dec 2001	Andreanof Islands, Adak Island
14978	Oceanodroma	furcata	27 Aug 2000	Adak Island
15059	Oceanodroma	furcata	27 Aug 2000	Adak Island
17966	Oceanodroma	furcata	06 Jul 2002	St Lazaria Island
11415	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11416	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11417	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11418	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11419	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11420	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Island
11448	Oceanodroma	leucorhoa	27 Aug 2000	Andreanof Islands, Adak Is, Kuluk Bay
13504	Oceanodroma	leucorhoa	24 May 2001	Rat Islands, Buldir Island
14544	Oceanodroma	leucorhoa	04 Oct 2000	Shemya Island
17428	Oceanodroma	leucorhoa	18 Jul 1999	Buldir Island
9823	Phalacrocorax	pelagicus	22 May 1998	Rat Islands, Buldir Island
10028	Phalacrocorax	pelagicus	24 May 1998	Near Islands, Attu Is, Nevidiskov Bay
10694	Phalacrocorax	pelagicus	13 Sep 1997	Attu Island
12092	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
12132	Phalacrocorax	pelagicus	06 Sep 2000	Amlia Island
12133	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13018	Phalacrocorax	pelagicus	08 Sep 2000	Amlia Island
13020	Phalacrocorax	pelagicus	21 May 2000	Adak Island
13021	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13022	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13023	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13024	Phalacrocorax	pelagicus	06 Sep 2000	Amlia Island
13029	Phalacrocorax	pelagicus	06 Sep 2000	Amlia Island
13030	Phalacrocorax	pelagicus	30 Aug 2000	Kiska Island
13031	Phalacrocorax	pelagicus	06 Sep 2000	Amlia Island
13032	Phalacrocorax	pelagicus	30 Aug 2000	Kiska Island
13295	Phalacrocorax	pelagicus	30 Aug 2000	Kiska Island
13296	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13297	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13298	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13299	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13300	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
13301	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13303	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13304	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13307	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
13308	Phalacrocorax	pelagicus	08 Sep 2000	Amlia Island
13983	Phalacrocorax	pelagicus	03 Jun 2001	Andreanof Islands, Amlia Island
13994	Phalacrocorax	pelagicus	30 Aug 2000	Rat Islands, Kiska Island
14035	Phalacrocorax	pelagicus	05 Jun 2001	Near Islands, Attu Island
14036	Phalacrocorax	pelagicus	11 May 2001	Near Islands, Attu Island
14198	Phalacrocorax	pelagicus	12 May 2001	Attu Island
14199	Phalacrocorax	pelagicus	03 Jun 2001	Amlia Island
14200	Phalacrocorax	pelagicus	13 Aug 2000	Attu Island
14201	Phalacrocorax	pelagicus	03 Jun 2001	Amlia Island
14202	Phalacrocorax	pelagicus	03 Jun 2001	Amlia Island
14205	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
14251	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
14252	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
14253	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
14254	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
14255	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
14257	Phalacrocorax	pelagicus	03 Jun 2000	Amlia Island
14432	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
14433	Phalacrocorax	pelagicus	03 Jun 2001	Amlia Island
14434	Phalacrocorax	pelagicus	08 Sep 2000	Amlia Island
14435	Phalacrocorax	pelagicus	24 Aug 2000	Adak Island
14436	Phalacrocorax	pelagicus	21 May 2001	Attu Island
14437	Phalacrocorax	pelagicus	06 May 2001	Attu Island
14438	Phalacrocorax	pelagicus	21 May 2001	Attu Island
14439	Phalacrocorax	pelagicus	11 May 2001	Attu Island
14440	Phalacrocorax	pelagicus	21 May 2001	Attu Island
14441	Phalacrocorax	pelagicus	21 May 2001	Attu Island
14565	Phalacrocorax	pelagicus	19 Jun 2001	Amak Island
17643	Phalacrocorax	pelagicus	28 May 2001	Near Islands, Attu Island
9822	Phalacrocorax	urile	24 May 1998	Attu Island
9824	Phalacrocorax	urile	24 May 1998	Rat Islands, Buldir Island
12091	Phalacrocorax	urile	30 Aug 2000	Kiska Island
12134	Phalacrocorax	urile	08 Sep 2000	Amlia Island
12135	Phalacrocorax	urile	06 Sep 2000	Amlia Island
12136	Phalacrocorax	urile	24 Aug 2000	Adak Island
12137	Phalacrocorax	urile	30 Aug 2000	Kiska Island
12140	Phalacrocorax	urile	30 Aug 2000	Kiska Island
13019	Phalacrocorax	urile	13 Aug 2000	Attu Island
13025	Phalacrocorax	urile	13 Aug 2000	Attu Island
13026	Phalacrocorax	urile	08 Sep 2000	Amlia Island
13027	Phalacrocorax	urile	30 Aug 2000	Kiska Island
13028	Phalacrocorax	urile	30 Aug 2000	Kiska Island
13033	Phalacrocorax	urile	08 Sep 2000	Amlia Island
13034	Phalacrocorax	urile	30 Aug 2000	Kiska Island
13035	Phalacrocorax	urile	30 Aug 2000	Kiska Island
13036	Phalacrocorax	urile	08 Sep 2000	Amlia Island
13302	Phalacrocorax	urile	13 Aug 2000	Attu
13309	Phalacrocorax	urile	08 Sep 2000	Amlia Island
13310	Phalacrocorax	urile	08 Sep 2000	Amlia Island
13311	Phalacrocorax	urile	13 Aug 2000	Attu
13340	Phalacrocorax	urile	05 May 2001	Near Islands, Attu Island
13982	Phalacrocorax	urile	04 Jun 2001	Near Islands, Attu Island
14089	Phalacrocorax	urile	04 Jun 2001	Near Islands, Attu Island
14197	Phalacrocorax	urile	03 Jun 2001	Amlia Island
14203	Phalacrocorax	urile	19 Jun 2001	Amak Island
14204	Phalacrocorax	urile	19 Jun 2001	Amak Island
14256	Phalacrocorax	urile	19 Jun 2001	Amak Island
10761	Polysticta	stelleri	17 Aug 1995	Barrow
13978	Polysticta	stelleri	05 Jun 1996	Barrow
14131	Polysticta	stelleri	10 Jul 1993	Barrow
14133	Polysticta	stelleri	10 Jul 1993	Barrow
14176	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14177	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14178	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14179	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14180	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14181	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
14182	Polysticta	stelleri	08 Sep 2001	Izembek NWR, Neumann Island
11284	Ptychoramphus	aleuticus	02 Jun 1999	Islands of Four Mountains, Amukta Pass
11575	Ptychoramphus	aleuticus	13 Feb 1999	Graham Island
13178	Ptychoramphus	aleuticus	28 Jul 1998	Rat Islands, Buldir Island
14171	Ptychoramphus	aleuticus	02 May 2001	Little Koniuji Island
14557	Ptychoramphus	aleuticus	20 Jul 2000	Chowiet Islands

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
17431	Ptychoramphus	aleuticus	05 Jul 1999	Buldir Island
17965	Ptychoramphus	aleuticus	07 Jul 2002	51°38'N 176°26'W
13567	Puffinus	creatopus	03 Aug 2001	58°24'N 138°56'W
11375	Puffinus	griseus	99 May 2000	N Pacific Ocean, 600 km SE Adak Island
11376	Puffinus	griseus	99 May 2000	N Pacific Ocean, 600 km SE Adak Island
11377	Puffinus	griseus	99 May 2000	N Pacific Ocean, 600 km SE Adak Island
14885	Puffinus	griseus	15 Sep 2001	lower Cook Inlet
9365	Puffinus	tenuirostris	13 Aug 1998	Sitka Sound, Vitskari Rocks
9389	Puffinus	tenuirostris	11 Aug 1997	St Paul Island
9390	Puffinus	tenuirostris	06 Aug 1997	St Paul Island
10194	Puffinus	tenuirostris	11 Aug 1997	Chignik Lagoon
10226	Puffinus	tenuirostris	14 Aug 1997	Cold Bay
10227	Puffinus	tenuirostris	06 Aug 1997	Cold Bay
10228	Puffinus	tenuirostris	14 Aug 1997	Cold Bay
10229	Puffinus	tenuirostris	08 Aug 1997	Adak Island
10230	Puffinus	tenuirostris	08 Aug 1997	Adak Island
10684	Puffinus	tenuirostris	26 Jul 1997	St Matthew Island
10695	Puffinus	tenuirostris	12 Sep 1997	Attu Island
10904	Puffinus	tenuirostris	21 Sep 1998	Cold Bay, Izembek Lagoon
10905	Puffinus	tenuirostris	21 Sep 1998	Cold Bay, Izembek Lagoon
10906	Puffinus	tenuirostris	21 Sep 1998	Cold Bay, Izembek Lagoon
10907	Puffinus	tenuirostris	22 Sep 1998	Cold Bay, Izembek Lagoon
10908	Puffinus	tenuirostris	22 Sep 1998	Cold Bay, Izembek Lagoon
11055	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11056	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11057	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11058	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11059	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11060	Puffinus	tenuirostris	99 Aug 1997	St Paul Island
11212	Puffinus	tenuirostris	31 Aug 1999	
11213	Puffinus	tenuirostris	31 Aug 1999	
11214	Puffinus	tenuirostris	31 Aug 1999	
11215	Puffinus	tenuirostris	31 Aug 1999	
11216	Puffinus	tenuirostris	30 Aug 1999	
11434	Puffinus	tenuirostris	99 May 2000	N Pacific Ocean, 600 mi SE Adak Island
11486	Puffinus	tenuirostris	06 Aug 1997	St Paul Island
11591	Puffinus	tenuirostris	25 Sep 2000	56°22'N 167°35'W
11598	Puffinus	tenuirostris	23 Sep 1998	Cold Bay
11603	Puffinus	tenuirostris	17 Aug 1997	Cape Newenham
11612	Puffinus	tenuirostris	21 Sep 1998	Cold Bay
11629	Puffinus	tenuirostris	09 Sep 2000	
11630	Puffinus	tenuirostris	07 Sep 2000	
11631	Puffinus	tenuirostris	06 Sep 2000	
11680	Puffinus	tenuirostris	06 Aug 1997	Toksook Bay
11717	Puffinus	tenuirostris	06 Sep 2000	Amlia Island Svitchnokoff Bay
13013	Puffinus	tenuirostris	11 Aug 1997	St Paul Island
13014	Puffinus	tenuirostris	05 Aug 1997	St Paul Island
13015	Puffinus	tenuirostris	18 Aug 2000	Rat Islands, Amchitka Island
13989	Puffinus	tenuirostris	22 Aug 2001	Izembek NWR, Grant Point
13990	Puffinus	tenuirostris	21 Aug 2001	Izembek NWR, Grant Point
14982	Puffinus	tenuirostris	29 Jul 2000	Bogeslof Island
9178	Rhodostethia	rosea	31 May 1999	St Paul Island
14900	Rhodostethia	rosea	12 Oct 2001	Barrow
14901	Rhodostethia	rosea	10 Oct 2001	Point Barrow
14902	Rhodostethia	rosea	12 Oct 2001	Barrow
14903	Rhodostethia	rosea	10 Oct 2001	Point Barrow
14904	Rhodostethia	rosea	10 Oct 2001	Point Barrow
14905	Rhodostethia	rosea	10 Oct 2001	Point Barrow
10218	Rissa	brevirostris	22 Aug 1998	St George Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
10219	Rissa	brevirostris	22 Aug 1998	St George Island
10220	Rissa	brevirostris	22 Aug 1998	St George Island
10221	Rissa	brevirostris	22 Aug 1998	St George Island
10222	Rissa	brevirostris	22 Aug 1998	St George Island
10223	Rissa	brevirostris	22 Aug 1998	St George Island
10224	Rissa	brevirostris	22 Aug 1998	St George Island
10225	Rissa	brevirostris	22 Aug 1998	St George Island
10770	Rissa	brevirostris	27 Jul 1995	
11474	Rissa	brevirostris	22 Aug 1998	St George Island
13111	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13116	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13117	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13119	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13121	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13126	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13127	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13144	Rissa	brevirostris	99 UNK 2000	St George Island
13145	Rissa	brevirostris	99 UNK 2000	St George Island
13146	Rissa	brevirostris	10 Jun 2000	St George Island
13148	Rissa	brevirostris	99 UNK 2000	St George Island
13149	Rissa	brevirostris	99 UNK 2000	St George Island
13157	Rissa	brevirostris	05 Jun 2000	St George Island
13177	Rissa	brevirostris	17 Jun 2000	Bogoslof Island
13380	Rissa	brevirostris	10 Jun 2000	St George Island, Staraya Artil
13439	Rissa	brevirostris	17 Jun 2000	Fox Islands, Bogoslof Island
13440	Rissa	brevirostris	17 Jun 2000	Fox Islands, Bogoslof Island
13441	Rissa	brevirostris	17 Jun 2000	Fox Islands, Bogoslof Island
13442	Rissa	brevirostris	17 Jun 2000	Fox Islands, Bogoslof Island
13443	Rissa	brevirostris	08 Jun 2000	St George Island
13743	Rissa	brevirostris	08 Jun 2000	St George Island
13744	Rissa	brevirostris	99 UNK 2000	St George Island
13745	Rissa	brevirostris	10 Jun 2000	St George Island
13746	Rissa	brevirostris	99 UNK 2000	St George Island
13747	Rissa	brevirostris	99 UNK 2000	St George Island
13748	Rissa	brevirostris	10 Jun 2000	St George Island
13749	Rissa	brevirostris	08 Jun 2000	St George Island
13750	Rissa	brevirostris	99 UNK 2000	St George Island
13751	Rissa	brevirostris	06 Jun 2000	St George Island
14062	Rissa	brevirostris	99 UNK 2000	St George Island
14670	Rissa	brevirostris	99 UNK 2000	St George Island
14769	Rissa	brevirostris	15 Aug 2001	St George Island
14770	Rissa	brevirostris	15 Aug 2001	St George Island
14771	Rissa	brevirostris	15 Aug 2001	St George Island
14772	Rissa	brevirostris	15 Aug 2001	St George Island
14773	Rissa	brevirostris	15 Aug 2001	St George Island
14774	Rissa	brevirostris	15 Aug 2001	St George Island
14775	Rissa	brevirostris	15 Aug 2001	St George Island
14776	Rissa	brevirostris	15 Aug 2001	St George Island
15035	Rissa	brevirostris	08 Jun 2000	St George Island
17422	Rissa	brevirostris	08 Jul 1999	Buldir Island
15461	Rissa	brevirostris	11 Jun 2001	St George Island
15462	Rissa	brevirostris	11 Jun 2001	St George Island
15466	Rissa	brevirostris	11 Jun 2001	St George Island
15467	Rissa	brevirostris	11 Jun 2001	St George Island
15497	Rissa	brevirostris	11 Jun 2001	St George Island
15498	Rissa	brevirostris	11 Jun 2001	St George Island
9622	Rissa	tridactyla	99 UNK 19XX	Igiak Bay, south of "Landing" Lake
10206	Rissa	tridactyla	05 Aug 1997	King Cove
10207	Rissa	tridactyla	06 Aug 1997	Chignik

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
10208	Rissa	tridactyla	11 Aug 1997	Chignik Lagoon
10209	Rissa	tridactyla	05 Aug 1997	King Cove
10210	Rissa	tridactyla	22 Aug 1998	St George Island
10211	Rissa	tridactyla	10 Aug 1997	Chignik Lake
10212	Rissa	tridactyla	11 Aug 1997	Chignik Lagoon
10213	Rissa	tridactyla	22 Aug 1998	St George Island
10214	Rissa	tridactyla	22 Aug 1998	St George Island
10215	Rissa	tridactyla	11 Aug 1997	Chignik Lagoon
10216	Rissa	tridactyla	05 Aug 1997	King Cove
10217	Rissa	tridactyla	06 Aug 1997	Chignik River
10238	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10239	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10240	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10241	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10242	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10419	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10420	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10421	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10422	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10423	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10424	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10425	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10426	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10427	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10428	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10429	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10430	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10431	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10432	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10433	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10485	Rissa	tridactyla	99 UNK 1998	Cape Lisburne
10910	Rissa	tridactyla	31 Jul 1997	Ugamak Pass, near Kaligagin Island
11470	Rissa	tridactyla	05 Aug 1997	King Cove
11681	Rissa	tridactyla	05 Aug 1997	King Cove
11682	Rissa	tridactyla	99 UNK 199X	"N" Montague Island
11749	Rissa	tridactyla	11 Jun 1997	Cape Peirce
11750	Rissa	tridactyla	11 Jun 1997	Cape Peirce
11751	Rissa	tridactyla	11 Jun 1997	Cape Peirce
12352	Rissa	tridactyla	99 UNK 19XX	
13101	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13102	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13103	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13104	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13105	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13106	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13107	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13108	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13118	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13120	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13124	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13125	Rissa	tridactyla	17 Jun 2000	Bogoslof Island
13147	Rissa	tridactyla	08 Jun 2000	St George Island
13150	Rissa	tridactyla	99 UNK 2000	St George Island
13151	Rissa	tridactyla	99 UNK 2000	St George Island
13381	Rissa	tridactyla	08 Jun 2000	St George Island, Staraya Artil
13444	Rissa	tridactyla	08 Jun 2000	St George Island
13454	Rissa	tridactyla	17 Jun 2000	Fox Islands, Bogoslof Island
13455	Rissa	tridactyla	17 Jun 2000	Fox Islands, Bogoslof Island
13456	Rissa	tridactyla	17 Jun 2000	Fox Islands, Bogoslof Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
13724	Rissa	tridactyla	99 UNK 1999	St Paul Island
13725	Rissa	tridactyla	99 UNK 1999	St Paul Island
13726	Rissa	tridactyla	99 UNK 1999	St Paul Island
13727	Rissa	tridactyla	99 UNK 2000	St George Island
13728	Rissa	tridactyla	99 UNK 1999	St Paul Island
13729	Rissa	tridactyla	99 UNK 1999	St Paul Island
13730	Rissa	tridactyla	99 UNK 2000	St George Island
13731	Rissa	tridactyla	99 UNK 1999	St Paul Island
13732	Rissa	tridactyla	99 UNK 1999	St Paul Island
13733	Rissa	tridactyla	08 Jun 2000	St George Island
13734	Rissa	tridactyla	08 Jun 2000	St George Island
13735	Rissa	tridactyla	99 UNK 2000	St George Island
13736	Rissa	tridactyla	99 UNK 1999	St Paul Island
13737	Rissa	tridactyla	99 UNK 1999	St Paul Island
13738	Rissa	tridactyla	99 UNK 2000	St George Island
13739	Rissa	tridactyla	08 Jun 2000	St George Island
13740	Rissa	tridactyla	08 Jun 2000	St George Island
13741	Rissa	tridactyla	08 Jun 2000	St George Island
13742	Rissa	tridactyla	99 UNK 1999	St Paul Island
14042	Rissa	tridactyla	99 UNK 2000	St George Island
14043	Rissa	tridactyla	99 UNK 2000	St George Island
14044	Rissa	tridactyla	99 UNK 1999	St Paul Island
14045	Rissa	tridactyla	08 Jun 2000	St George Island
14055	Rissa	tridactyla	99 UNK 2000	St George Island
14056	Rissa	tridactyla	08 Jun 2000	St George Island
14057	Rissa	tridactyla	08 Jun 2000	St George Island
14554	Rissa	tridactyla	99 UNK 2001	Nome Area
14762	Rissa	tridactyla	15 Aug 2001	St George Island
14763	Rissa	tridactyla	15 Aug 2001	St George Island
14764	Rissa	tridactyla	14 Aug 2001	St George Island
14765	Rissa	tridactyla	15 Aug 2001	St George Island
14766	Rissa	tridactyla	15 Aug 2001	St George Island
14767	Rissa	tridactyla	15 Aug 2001	St George Island
14768	Rissa	tridactyla	15 Aug 2001	St George Island
14853	Rissa	tridactyla	30 Jul 2001	
14860	Rissa	tridactyla	28 Jul 2001	
17666	Rissa	tridactyla	99 UNK 1995	St George Island
17667	Rissa	tridactyla	99 UNK 1995	St George Island
17668	Rissa	tridactyla	99 UNK 1995	St George Island
17669	Rissa	tridactyla	99 UNK 1995	St George Island
17670	Rissa	tridactyla	99 UNK 1995	St George Island
17671	Rissa	tridactyla	99 UNK 1995	St George Island
17672	Rissa	tridactyla	99 UNK 1995	St George Island
17673	Rissa	tridactyla	99 UNK 1995	St George Island
17674	Rissa	tridactyla	99 UNK 1995	St George Island
17675	Rissa	tridactyla	99 UNK 1995	St George Island
17676	Rissa	tridactyla	99 UNK 1995	St George Island
18950	Rissa	tridactyla	11 Jun 1997	Cape Peirce
18951	Rissa	tridactyla	11 Jun 1997	Cape Peirce
18952	Rissa	tridactyla	11 Jun 1997	Cape Peirce
13965	Somateria	fischeri	28 May 2001	Kigigak Island
13974	Somateria	fischeri	22 May 2001	Kigigak Island
13985	Somateria	fischeri	26 Jun 2001	Tutakoke River
14139	Somateria	fischeri	28 May 2001	Kigigak Island
14158	Somateria	fischeri	01 Jun 2001	Kigigak Island
14173	Somateria	fischeri	26 Jun 2001	Tutakoke River
14550	Somateria	fischeri	06 Nov 2001	Prudhoe Bay
17890	Somateria	fischeri	17 Aug 2002	CAPTIVE
9394	Somateria	mollissima	03 Aug 1998	Point Barrow

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
9440	Somateria	mollissima	10 Oct 1996	Barrow
10771	Somateria	mollissima	25 Jul 1995	
13336	Somateria	mollissima	03 May 2001	Near Islands, Attu Island
13721	Somateria	mollissima	29 May 2001	Near Islands, Attu Island
17591	Somateria	mollissima	25 May 2002	Near Islands, Attu Island
9336	Somateria	spectabilis	99 Feb 1999	near St Matthew Island
9368	Somateria	spectabilis	15 Sep 1998	Barrow
9369	Somateria	spectabilis	99 UNK 1999	Barrow
9393	Somateria	spectabilis	12 May 1998	Barrow
9396	Somateria	spectabilis	15 Jul 1999	Point Barrow
9422	Somateria	spectabilis	15 Jun 1999	Point Lay, Kukpowruk River Delta
9423	Somateria	spectabilis	14 Sep 1996	Barrow
9439	Somateria	spectabilis	14 Jul 1999	Point Barrow
9520	Somateria	spectabilis	18 Jul 1996	Barrow
9521	Somateria	spectabilis	09 Aug 1997	Barrow
9522	Somateria	spectabilis	30 Aug 1999	Point Barrow, Elson Lagoon
9744	Somateria	spectabilis	19 Sep 1975	Nunivak Island, Mekoryuk
9745	Somateria	spectabilis	21 Aug 1972	lower Kashunuk River
9851	Somateria	spectabilis	20 Sep 1975	Nunivak Island, Mekoryuk
10763	Somateria	spectabilis	99 SUM 1995	Barrow
10764	Somateria	spectabilis	20 May 1994	Barrow
10765	Somateria	spectabilis	99 SUM 1995	Barrow
10766	Somateria	spectabilis	99 SUM 1995	Barrow
10767	Somateria	spectabilis	20 Jul 1995	Barrow
11205	Somateria	spectabilis	22 Jul 2000	Nunivak Island, Kingaktakamiut
11208	Somateria	spectabilis	07 Mar 2000	Unimak Pass
11319	Somateria	spectabilis	07 Mar 2000	Unimak Pass
11320	Somateria	spectabilis	07 Mar 2000	Unimak Pass
11737	Somateria	spectabilis	20 May 1996	
11738	Somateria	spectabilis	99 UNK 19XX	
11739	Somateria	spectabilis	99 UNK 19XX	
11740	Somateria	spectabilis	99 UNK 19XX	
11741	Somateria	spectabilis	18 Jul 1994	
11742	Somateria	spectabilis	13 Jul 1994	
11743	Somateria	spectabilis	24 Jul 1994	
11744	Somateria	spectabilis	99 UNK 19XX	
11745	Somateria	spectabilis	20 May 1994	
11746	Somateria	spectabilis	99 UNK 19XX	
11747	Somateria	spectabilis	31 Jul 1994	
13153	Somateria	spectabilis	24 Jun 2000	Point Barrow
13616	Somateria	spectabilis	99 UNK 19XX	
14937	Somateria	spectabilis	99 UNK 19XX	
14986	Somateria	spectabilis	20 May 1994	
14987	Somateria	spectabilis	20 May 1994	
14988	Somateria	spectabilis	20 May 1994	
18948	Somateria	spectabilis	99 UNK 1995	Barrow
9351	Uria	aalge	26 Feb 1994	Kodiak Island, Three Saints Bay Lagoon
9409	Uria	aalge	26 Feb 1994	Kodiak Island, Three Saints Bay Lagoon
9627	Uria	aalge	27 Jul 1978	Nunivak Island, Datheekok Point
10449	Uria	aalge	99 UNK 1998	Cape Lisburne
10450	Uria	aalge	99 UNK 1998	Cape Lisburne
10451	Uria	aalge	99 UNK 1998	Cape Lisburne
10452	Uria	aalge	99 UNK 1998	Cape Lisburne
10454	Uria	aalge	99 UNK 1998	Cape Lisburne
10457	Uria	aalge	99 UNK 1998	Cape Lisburne
10459	Uria	aalge	99 UNK 1998	Cape Lisburne
10460	Uria	aalge	99 UNK 1998	Cape Lisburne
10461	Uria	aalge	99 UNK 1998	Cape Lisburne
10462	Uria	aalge	99 UNK 1998	Cape Lisburne

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
10464	Uria	aalge	99 UNK 1998	Cape Lisburne
10685	Uria	aalge	26 Jul 1997	St Matthew Island
10686	Uria	aalge	26 Jul 1997	St Matthew Island
10687	Uria	aalge	26 Jul 1997	St Matthew Island
10688	Uria	aalge	26 Jul 1997	St Matthew Island
10689	Uria	aalge	26 Jul 1997	St Matthew Island
10690	Uria	aalge	26 Jul 1997	St Matthew Island
10691	Uria	aalge	26 Jul 1997	St Matthew Island
10692	Uria	aalge	26 Jul 1997	St Matthew Island
10693	Uria	aalge	26 Jul 1997	St Matthew Island
10909	Uria	aalge	23 May 1997	Nunivak Island
10948	Uria	aalge	99 SUM 1998	Cape Lisburne
11054	Uria	aalge	07 Jun 1996	Shemya Island
11090	Uria	aalge	21 Jun 1977	Cape Thompson
11326	Uria	aalge	03 Aug 1981	St George Island
11471	Uria	aalge	99 Apr 1998	Cold Bay
11472	Uria	aalge	16 Jun 1998	Andreanof Islands, Great Sitkin Island
11475	Uria	aalge	99 Apr 1998	Cold Bay
11483	Uria	aalge	18 Jun 1999	Anchor Point
11498	Uria	aalge	28 Aug 1997	Kivalina
11596	Uria	aalge	16 Jun 1998	Andreanof Islands, Great Sitkin Island
11599	Uria	aalge	28 Aug 1997	Kivalina
11601	Uria	aalge	04 Feb 1998	Homer
11606	Uria	aalge	29 Feb 1996	
13009	Uria	aalge	23 May 1997	Nunivak Island
13109	Uria	aalge	17 Jun 2000	Bogoslof Island
13112	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13113	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13114	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13115	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13122	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13123	Uria	aalge	16 Jun 2000	Fox Islands, Aiktak Island
13224	Uria	aalge	14 Sep 1998	Homer
13753	Uria	aalge	99 UNK 1999	St Paul Island
13754	Uria	aalge	99 UNK 1999	St Paul Island
13755	Uria	aalge	99 UNK 1999	St Paul Island
13874	Uria	aalge	21 Jun 2000	St George Island, East
13875	Uria	aalge	31 Aug 2000	St George Island
13876	Uria	aalge	31 Aug 2000	St George Island
13877	Uria	aalge	31 Aug 2000	St George Island
13878	Uria	aalge	14 Jun 2000	St George Island, Zapadni
14048	Uria	aalge	21 Jun 2000	St George Island
14050	Uria	aalge	29 Aug 2000	St George Island
14549	Uria	aalge	99 UNK XXXX	
14761	Uria	aalge	06 Sep 2001	St George Island
14850	Uria	aalge	26 Aug 1995	Women's Bay, Russian Creek Mouth
9608	Uria	lomvia	09 Aug 1989	Barrow
10447	Uria	lomvia	99 UNK 1998	Cape Lisburne
10448	Uria	lomvia	99 UNK 1998	Cape Lisburne
10453	Uria	lomvia	99 UNK 1998	Cape Lisburne
10455	Uria	lomvia	99 UNK 1998	Cape Lisburne
10456	Uria	lomvia	99 UNK 1998	Cape Lisburne
10458	Uria	lomvia	99 UNK 1998	Cape Lisburne
10463	Uria	lomvia	99 UNK 1998	Cape Lisburne
10465	Uria	lomvia	99 UNK 1998	Cape Lisburne
10481	Uria	lomvia	99 UNK 1998	Cape Lisburne
10482	Uria	lomvia	99 UNK 1998	Cape Lisburne
10483	Uria	lomvia	99 UNK 1998	Cape Lisburne
10484	Uria	lomvia	99 UNK 1998	Cape Lisburne

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
10772	Uria	lomvia	31 Jul 1995	
10949	Uria	lomvia	99 SUM 1998	Cape Lisburne
10950	Uria	lomvia	99 SUM 1998	Cape Lisburne
11051	Uria	lomvia	99 UNK 1998	Cape Lisburne
11052	Uria	lomvia	99 UNK 1998	Cape Lisburne
11053	Uria	lomvia	99 UNK 1998	Cape Lisburne
11433	Uria	lomvia	99 May 2000	N Pacific Ocean, 600 mi SE Adak Is
11464	Uria	lomvia	28 Aug 1997	Kivalina
11481	Uria	lomvia	28 Aug 1997	Kivalina
11496	Uria	lomvia	28 Aug 1997	Kivalina
11497	Uria	lomvia	28 Aug 1997	Kivalina
11499	Uria	lomvia	28 Aug 1997	Kivalina
11605	Uria	lomvia	28 Aug 1997	Kivalina
11608	Uria	lomvia	26 Apr 1998	"S tip"
11609	Uria	lomvia	28 Aug 1997	Kivalina
12370	Uria	lomvia	99 UNK 19XX	St George Island
13110	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13445	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13446	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13447	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13448	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13449	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13450	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13451	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13452	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13453	Uria	lomvia	16 Jun 2000	Fox Islands, Aiktak Island
13518	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13519	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13520	Uria	lomvia	17 Jun 2001	Fox Islands, Bogoslof Island
13521	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13522	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13523	Uria	lomvia	17 Jun 2000	Fox Islands, Bogoslof Island
13524	Uria	lomvia	14 Jun 2000	St George Island
13653	Uria	lomvia	99 UNK 19XX	Cape Thompson
13655	Uria	lomvia	99 UNK 19XX	Cape Thompson
13656	Uria	lomvia	99 UNK 19XX	Cape Thompson
13657	Uria	lomvia	99 UNK 19XX	Cape Thompson
13856	Uria	lomvia	99 UNK 2000	St George Island
13857	Uria	lomvia	99 UNK 2000	St George Island
13858	Uria	lomvia	99 UNK 1999	St Paul Island
13859	Uria	lomvia	99 UNK 1999	St Paul Island
13860	Uria	lomvia	99 UNK 1999	St Paul Island
13861	Uria	lomvia	99 UNK 1999	St Paul Island
13862	Uria	lomvia	16 Jun 2000	Aiktak Island
13863	Uria	lomvia	10 Jun 2000	St George Island, Staraya
13864	Uria	lomvia	99 UNK 2000	St George Island
13865	Uria	lomvia	99 UNK 1999	St Paul Island
13866	Uria	lomvia	99 UNK 2000	St George Island
13867	Uria	lomvia	99 UNK 2000	St George Island
13868	Uria	lomvia	14 Jun 2000	St George Island
13869	Uria	lomvia	99 UNK 2000	St George Island
13870	Uria	lomvia	14 Jun 2000	St George Island, Zapadni
13871	Uria	lomvia	14 Jun 2000	St George Island, Zapadni
13872	Uria	lomvia	14 Jun 2000	St George Island, Zapadni
13873	Uria	lomvia	31 Aug 2000	St George Island
14046	Uria	lomvia	02 Sep 2000	St George Island
14047	Uria	lomvia	14 Jun 2000	St George Island
14049	Uria	lomvia	10 Jun 2000	St George Island
14051	Uria	lomvia	99 UNK 2000	St George Island

Appendix 2 (continued)

UAM #	Genus	species	Date	Locality
14052	Uria	lomvia	14 Jun 2000	St George Island
14053	Uria	lomvia	12 Jun 2000	St George Island
14054	Uria	lomvia	31 Aug 2000	St George Island
14183	Uria	lomvia	99 Jan 1997	Kivalina
14753	Uria	lomvia	15 Aug 2001	St George Island
14754	Uria	lomvia	30 Aug 2001	St George Island
14755	Uria	lomvia	15 Aug 2001	St George Island
14756	Uria	lomvia	15 Aug 2001	St George Island
14757	Uria	lomvia	08 Aug 2001	St George Island
14758	Uria	lomvia	15 Aug 2001	St George Island
14759	Uria	lomvia	15 Aug 2001	St George Island
14760	Uria	lomvia	15 Aug 2001	St George Island
14798	Uria	lomvia	17 Jun 2000	Bogoslof Island
14855	Uria	lomvia	23 Aug 2000	Gull Island
15488	Uria	lomvia	99 UNK 1982	Buldir Island
17801	Uria	lomvia	99 UNK 2001	
17888	Uria	lomvia	19 Jul 2002	Bogoslof Island
17889	Uria	lomvia	19 Jul 2002	Bogoslof Island
17905	Uria	lomvia	19 Jul 2002	Bogoslof Island
17906	Uria	lomvia	19 Jul 2002	Bogoslof Island
18482	Uria	lomvia	19 Jul 2002	Bogoslof
18488	Uria	lomvia	19 Jul 2002	Bogoslof
18496	Uria	lomvia	19 Jul 2002	Bogoslof
18500	Uria	lomvia	19 Jul 2002	Bogoslof