

North Pacific Marine Research Institute: Semiannual Progress Report

- I. Project #: NPMRI 18 (T2110)
- II. Title: North Pacific Pelagic Seabird Database (NPPSD): Compiling Datasets and Creating an Archive, Accessible Database, and Pelagic Seabird Atlas
- III. Principal Investigator(s) and Recipient Organization(s):
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Web: <http://www.absc.usgs.gov/research/seabird&foragefish/index.html>

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- IV. Contract Period and Amount of Funding: 10/02 – 9/04
- V. Report Period: January 1, 2004 - June 30, 2004
- VI. Progress Summary:

In the current NPRB reporting period (January 1- June 30, 2004) we have finalized two sets of data (FWS and NODC data sets) that will form Version 1.0 of the NPPSD. Final proofing of a large, multi-year dataset from surveys conducted around Kodiak Island, Alaska is necessary, but we plan to announce the completion of the NPPSD Version 1.0 by 9/30/2004. We have spent most of our time during this reporting period in developing database tools for integrating data. These tools will make integration of future data considerably easier. Additionally, we have produced documentation materials including conceptual diagrams for data processing (Fig. 1). We will be posting metadata and documentation on the derivation and use of this data on our web site (<http://www.absc.usgs.gov/research/NPPSD/index.htm>).

In the process of creating the current Microsoft Access database, we also developed a number of value added by-products. For example, we developed a sister database for marine mammals, which will also be made available to researchers. We also developed a comprehensive taxonomic code list for use in most Pacific at-sea surveys for marine birds and mammals that is current with ITIS standards, and cross-linked it with historical four-letter and 12-digit codes used by investigators in the past. The current American Ornithological Union Bird Species List was not sufficient to cover all Pacific marine species of seabirds and marine mammals. We are recommending that researchers conducting pelagic predator surveys in the North Pacific use our list currently available on our web site (<http://www.absc.usgs.gov/research/NPPSD/index.htm>).

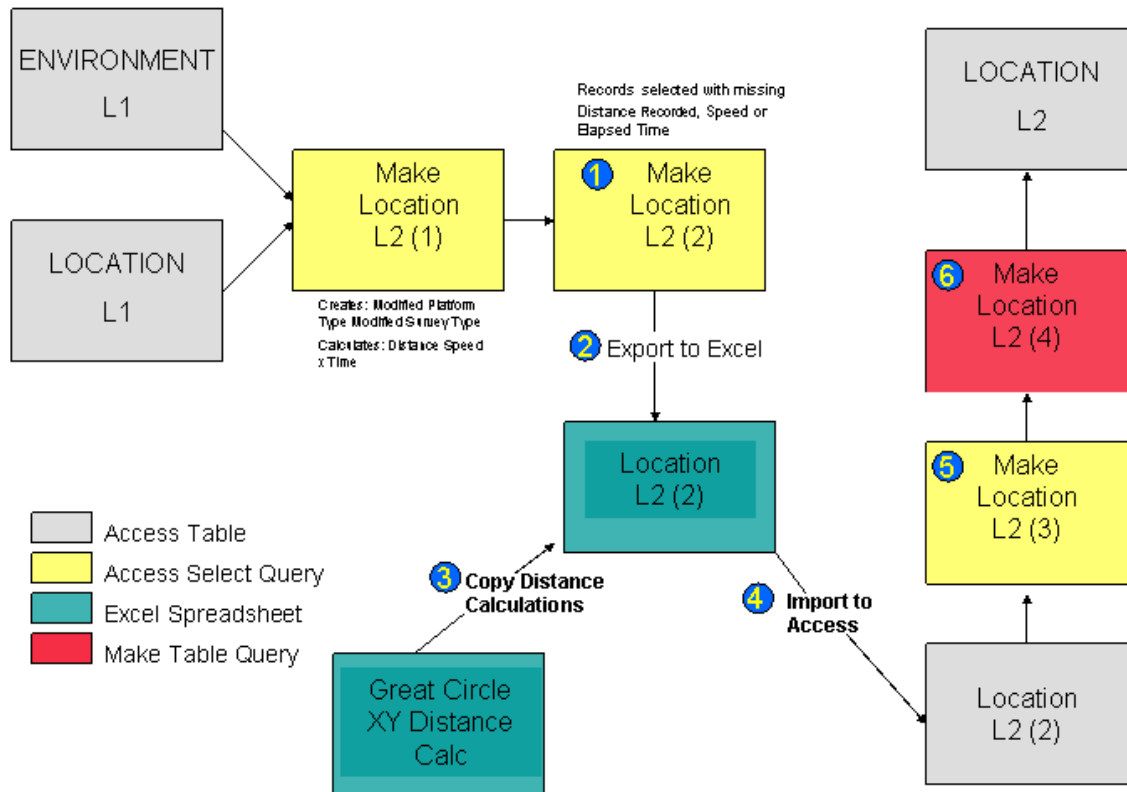


Figure 1. Conceptual diagram for processing location and environment tables in the NPPSD.

We are continuing work on integration of fine-scale datasets collected by USGS, Alaska Science Center staff working in Glacier Bay Alaska (2001-2003) and Cook Inlet Alaska (1996-2000). We have also collected survey data sets from the U.S. Fish and Wildlife Service “Seabird and Marine Mammal Coordinated Investigations” (1996-2004). These were collected in the same manner as the USGS data and will be integrated similarly.

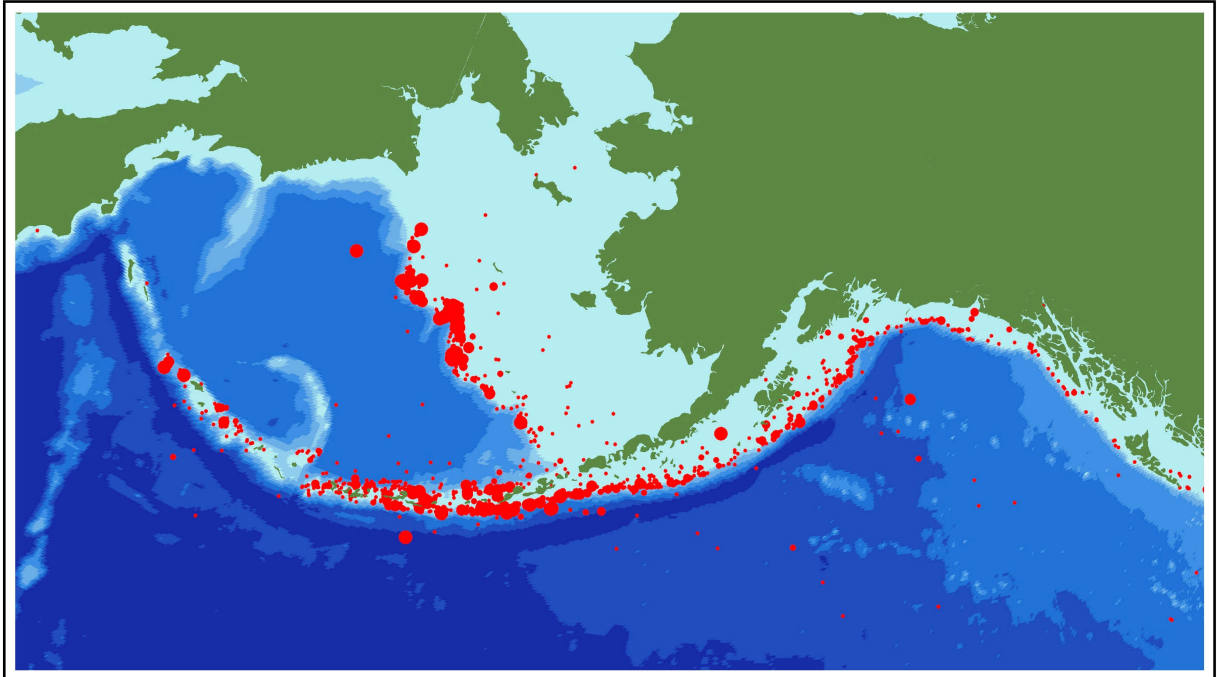
We are also continuing our work to integrate Russian seabird survey data (from V.P. Shuntov). During the past year we contracted with Shuntov to digitize survey data from the Russian Far East collected over a 15 year period. These additions are particularly important because they add considerable data from areas that were not well sampled in the current database. We recently acquired the methodology information crucial to calculate accurate densities of birds at sea from the data.

As noted in our previous report, the NPPSD will be a versioned product. As we add data sets we will change versions. The current dataset (428 surveys) is comprised of approximately 64,000 standard transects and observations on more than 7,000,000 animals. We would like to add data to the NPPSD on an annual or semi-annual basis; however, the rate of updates will be dependent on future funding.

Gary Drew (USGS) continues to be in charge of the development of the database and its associated metadata catalog. A GS-9 Biologist and a GS-5 Biological Technician are also working full time on this project.

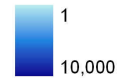
The NPPSD is an ongoing source of information for a variety of projects. As the following list indicates, we have provided information on seabird distribution to several organizations. Many products have resulted from these data, and may be viewed on our web site under “Products” at: <http://www.absc.usgs.gov/research/NPPSD/index.htm> .

- We provided the U.S. Fish and Wildlife Service and National Marine Fisheries Service with information about the pelagic distribution of Black-Footed and Laysan Albatrosses to help in the development of long-line fishing regulations in Alaska.
- We provided distribution data on Kittlitz’s Murrelet to the FWS for use in development of a status report on that species.
- Distribution maps for Kittlitz’s Murrelets have also been used to develop inventory plans for this species.
- We provided the Minerals Management Service with a general broad-scale map of seabird distribution in Alaska to assist in the assessment of environmental risk for offshore drilling lease areas in the Gulf of Alaska.
- We reported on our project at the “Marine Science In The Northeast Pacific: Science For Resource Dependent Communities” symposium in Anchorage, AK January 2003 and at the Pacific Seabird Group’s Annual meeting in Santa Barbara, CA.
- We prepared a database on endangered Short-tailed Albatross (STAL) for the USFWS Endangered Species Office, Anchorage, as part of a collaborative USGS/FWS project (Fig. 2). This dataset includes Short-tailed Albatross sightings from different sources that were gathered by many different people over a long period of time. We started with a database compiled by the FWS, verified records where we could and double-checked computer records against all hard copy reports, cleaned up many mistakes in the data (those which were apparent and fixable), eliminated duplicate records that had crept into the database over time, and added additional records gleaned from new sources. Two manuscripts describing the distribution of STAL in relation to the environment (1) and other albatrosses (2) are in preparation by USGS and FWS.
- We worked with George Hunt (Univ. California, Irvine) to compile and analyze pelagic data (Fig. 3) in order to estimate “Prey Consumption and Energy Transfer by Seabirds in the Gulf of Alaska”, and results were presented at the 12th annual PICES meeting in Seoul, Korea.
- We provided data on pink-footed shearwater to the “North American Conservation Action Plan” being prepared by the Commission for Environmental Cooperation. This species was selected based on it’s range and vulnerable status. Our data represented the only historical pelagic data for this species.
- We coauthored a publication with George Hunt and Jaime Jahncke for “Prey Consumption and Energy Transfer by Marine Birds in the Gulf of Alaska” for Fisheries Oceanography (in press).
- We presented a paper “Predictable hotspots and foraging habitat of the endangered short-tailed Albatross in Alaska” at the Alaska Bird Conference in Anchorage, AK March 2004.
- We presented a poster “Progress of the NPPSD: Current Utility and Future Goals”, at the Alaska Bird Conference in Anchorage, AK March 2004.



0 100 200 400 600 800 Miles

Ocean Depth (m)



Group Size of Sightings

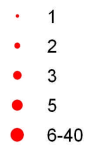


Figure 2. Sightings of Short-tailed Albatross (STAL) in the Northern Pacific 1903-2003. Red dots represent STAL sightings, with the size of the group indicated by the size of the dot.

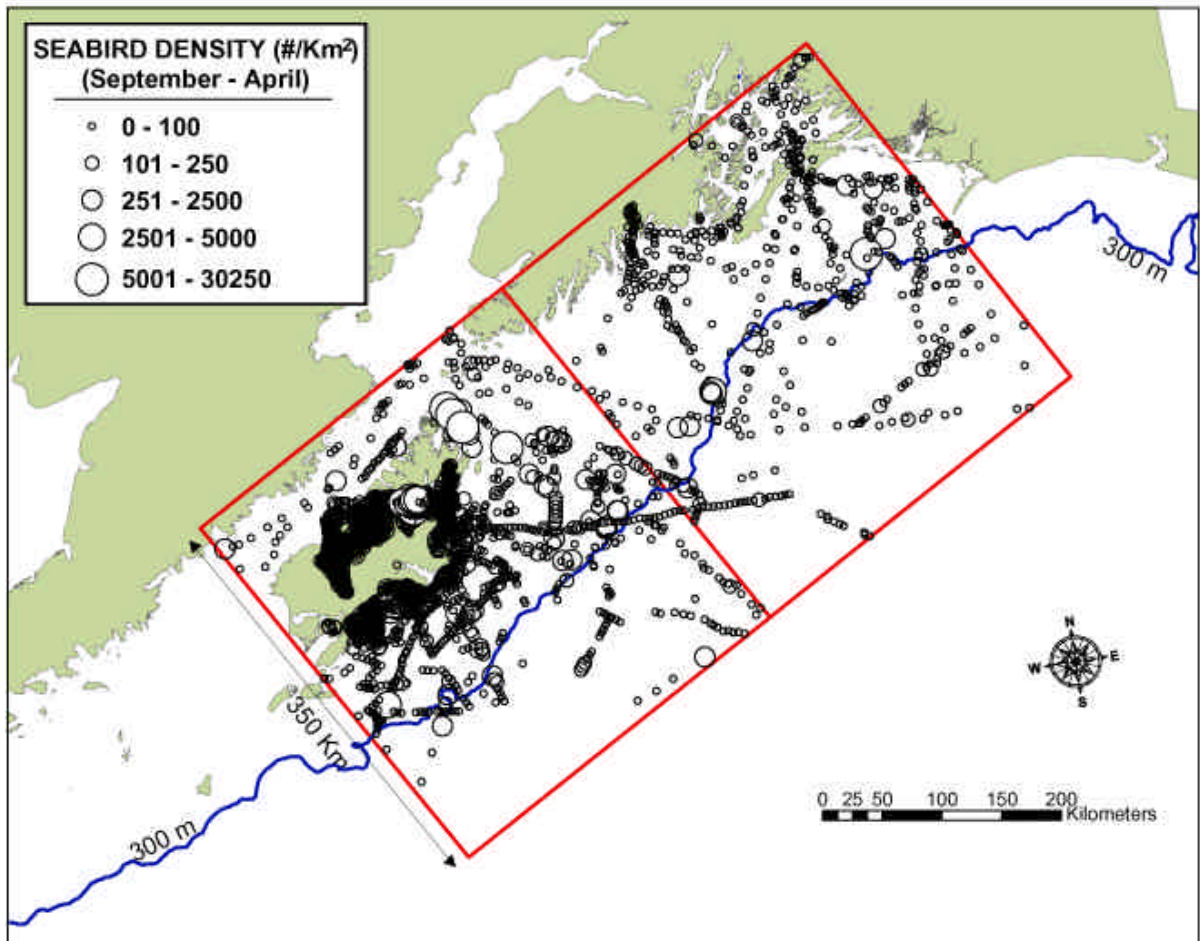


Figure 3. Area of the northern Gulf of Alaska examined in order to estimate “Prey Consumption and Energy Transfer by Seabirds in the Gulf of Alaska” (Hunt et al., in press). The red boxes represent the areas where seabird densities were calculated. Dot sizes reflect the summed densities of all seabirds on survey transects. The 300 m depth contour approximates the shelf break.