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1998 SHOREBIRD PROJECTS IN ALASKA

The second annual report of the Alaska Shorebird Working Group. Below are presented abstracts of projects undertaken by members of the Alaska Shorebird Working Group during 1998. For questions concerning the working group, contact Brad Andres.

March 1999

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SHOREBIRD SISTER SCHOOLS PROGRAM

The Shorebird Sister Schools Program is an on-line Internet education program developed in Homer, Alaska in 1994. The program was developed as an add-on to the Kachemak Bay Shorebird Festival, sponsored by the Alaska Maritime National Wildlife Refuge (NWR) and the Homer Chamber of Commerce. Objectives were to educate the students and teachers about Arctic-nesting shorebirds, their fascinating migration, and the importance of wetland habitats to their survival.

The program expanded way beyond the scope of the local committee, which was made up of educators from the local school district, college, and Alaska Maritime NWR. In 1996, the program was moved from Homer, Alaska to the Alaska Regional Office, to be administered by the Regional Education Coordinator. The program was developed from an America On-line chat to a World Wide Web site with an E-mail Listserv. From 1996 to the present, the program grew from 17 schools along the Pacific Flyway, to hundreds of schools throughout the world, including 36 states and 23 countries. There are currently 722 subscribers to the E-mail List Serv, including schools, shorebird biologists/managers, wetland ecologists, environmental educators, and shorebird enthusiasts from a variety of private and governmental organizations. This is a 288% increase in E-mail Listserv subscribers since 1996. From 1996 to 1997, web page information requests increased by 268%, including 24,400 hits during April and May of 1997. The World Wide Web page has been translated into Spanish and Portuguese, and contracts are currently being administered to complete its translation into Japanese and Russian.

The draft curriculum was revised and expanded to include K-12 activities on shorebird adaptations, migration, nesting/breeding, wetlands ecology, invertebrate sampling, and how to lead a successful field trip. A special unit within the curriculum was designed for the Shorebird Sister Schools Program to show teachers how to get on the World Wide Web, how to subscribe to the E-mail Listserv, and

how to share the data the students collected from their field trips with other students around the globe. The curriculum is currently in English, Spanish, and Russian, and will be available in Japanese by spring of 1999.

Future plans for the Shorebird Sister Schools Program are to expand the program to include more information on the World Wide Web page for all of the flyways across the United States and to utilize the program as an outreach tool for the Refuges 2003 campaign. National Wildlife Refuges across the United States have incredible shorebird resources. Now that we have a very broad audience for the Shorebird Sister Schools Program, we would like to encourage our participants to visit National Wildlife Refuges. While visiting Refuges as a "shorebird sister school", they will also be learning about the mission of the Refuge system and how important these protected areas are to fish, birds, plants, and other animals, including ourselves.

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PLOVERS AT NOME AND IN HAWAII -- 1998 FIELD SEASON REPORT

The 1998 season marked our eleventh consecutive year. Our efforts were focused on two main fronts. First, locating previously banded birds to add to our data base on site fidelity, mate retention, and longevity. Second, searching for young banded In 1997 and color banding additional chicks.

Several new insights were obtained an the question of site fidelity and longevity. Two male American Golden-Plovers, one banded in 1993 and the other in 1994, were seen on their territories for the first time since the year they were banded. We incorrectly assumed they had died since they had not been seen for several years. A male Pacific Golden-Plover banded in 1988 was once again on his territory in 1998. We know of only three seasons of the past eleven when this bird was successful at attracting a mate and hatching a clutch. We still had a pair of Black-bellied Plover together for their sixth breeding season. One of our male American Golden-Plovers was observed displacing his 1997 mate from his 1998 territory where he had a clutch under incubation with a new unbanded mate.

Eighteen Black-bellied, 15 Pacific Golden and four American Golden-Plover chicks were color banded in 1997. None were located In 1998. Our colleagues O.W. and P.M. Johnson banded an additional 13 Black-bellied chicks this past season. We will be at Nome in 1999 and 2000 to band additional chicks for our natal philopatry study. We would appreciate hearing about any sightings of color-banded Black-bellied, American Golden and Pacific Golden-Plover outside of the Nome area.

The Hawaii phase of the plover research focuses on Pacific

Golden-Plover. This work was begun in 1980 by O.W. and P.M. Johnson. We have been associated with the research since 1981. There are still three birds (two females and a male) banded in 1982,83 present in 1998,99. The past three winter seasons we have been looking at the question of sex ratios on lawns (a popular foraging site for plovers in Hawaii). This aspect of our work is ongoing but it appears there may be a male bias for this habitat.

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BERINGIAN SHOREBIRD DATABASE

Misha Stishov and Paul Cotter have developed a structure, and associated forms, for the Beringian Shorebird Database. This database will eventually be linked to GIS software to formulate a map of breeding shorebirds throughout northern and western Alaska, Wrangel Island, Chukotka and Kamchatka peninsulas, Magadan region, and eastern Yakutia. The database includes breeding status, phenology, local population estimates, and data collection methods. Currently, the final structure and problems with the database are being addressed, and available North Slope and Wrangel Island data are being entered. We hope to complete troubleshooting, entering these initial datasets, and establishing rules for database use, access and distribution by fall 1999.

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AVIAN ABUNDANCE, DENSITY, AND HABITAT ASSOCIATIONS AT INIGOK-1998

We surveyed 34 plots for nesting shorebirds at Inigok during summer 1998. Inigok is located on the Fish Creek drainage in eastern National Petroleum Reserve-Alaska approximately 70 km inland from the Beaufort Sea coast. The 34 plots were distributed among 4 covertypes: drained-lake basin, tussock, ridge, and riparian. Plots were 4 ha, except for riparian plots, which were of variable size and shape to follow the contours of Fish Creek. Drained-lake basins had the highest densities of nesting shorebirds (0.8 nests/ha) and the greatest species diversity (6 shorebird species); Semipalmated and Pectoral sandpipers were the most common (each having 0.3 nests/ha within basin plots). Total shorebird nest densities for other covertypes were: riparian (0.2 nests/ha), tussock (0.15 nests/ha)

and ridge (0.08 nests/ha). We also surveyed a 12.8 ha plot encompassing all covertypes for Black-bellied Plover and American Golden-plover pairs and nests. We found 20 American Golden-plover nests (1.56km2) of 33 probable breeding pairs. We observed only 3 pairs (0.23 pairs/km2) and 2 nests (0.16 nests/km2) of Black-bellied Plovers.

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SHOREBIRD STUDIES AT CAPE ESPENBERG, NORTHWEST ALASKA

The Cape Espenberg shorebird projects continued again in 1998, our fifth consecutive field season. Several main projects occur simultaneously. 1) Male and female reproductive strategies in Red-necked Phalaropes. We now have enough DNA samples from adult and young RNPHs to conduct DNA fingerprinting analyses. Of interest are the four polyandrous clutches and the 11 renest clutches. If extrapair fertilizations (EPFs) occur in this species, they should show up in these samples. Preliminary results (1/3 of samples done) suggest a low level of EPFs. 2) Habitat selection and productivity of three sympatric Calidris species: WESAs, SESAs, and DUNLs. Comparison with Cape Nome has shown that Espenberg WESAs lay smaller clutches, lay smaller eggs, lay much later, are less successful, and have lower return rates. This suggests a younger population, or a different population. We examined the innermost median covert for a buffy
(yearling) or a white fringe (older), as a metric of age; this was also done at Nome. We found that 39% (n=57) of the Espenberg birds had buffy, compared to 3% for Nome. We also found a significant difference in wing-length. 3) Return rates of color-banded individuals (all species mentioned, plus REPH). The main odd finding of 1998 was a much lower return rate of RNPH than expected: 1/7 of expected male return, 1/5 of female. These birds may have been killed by El Nino-related food depletion on the wintering grounds, 4) Observer-induced predation on nests. Our initial impression that frequent visits increase predation may have ignored hunting patterns by foxes. Our revised study found a "ridge" effect in action: one side of the ridge had heavier predation than the other side.
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BREEDING SURFBIRDS AT LAKE CLARK

Pavel Tomkovich and Maksim Dementyev returned to Turquoise Lake in Lake Clark National Park & Preserve for a second season studying Surfbird breeding ecology. Just prior to this we took a trip to Prince William Sound to look at spring staging birds and had the good fortune of finding a bird that we had marked on the breeding ground the year before. Only three weeks prior to this the same bird was seen in San Pedro Bay near Los Angeles and less than two weeks after our visit to PWS we found the bird back on its breeding grounds.

Whereas 1997 was a mild season with lots of young Surfbirds taking wing, 1998 was beset by a series of storms that resulted in no production of young. Nevertheless, we got good data on most aspects of nesting up to hatch. After the breeding work was done we kidnapped Declan Troy and all embarked on a whirlwind trip (2,000 km in 60 h) of interior AK looking at other known Surfbird breeding sites. At Eagle Summit we found a brood group of some 25 juveniles being attended by a lone adult. Pavel and HOPEFULLY Maks will return in '99.

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SHOREBIRD USE OF COOK INLET

This season was also the second for this study in which we looked at yearly shorebird use of intertidal habitats of middle and upper Cook Inlet (Tuxedni Bay to Anchorage). What appears to be most of the population (20,000 or so birds) of the nominate race of Rock Sandpiper again settled into Uper Cook Inlet for the winter. Like last year they made a living off of Macoma clams which provided enough fat (25-40% of body mass!!) to see them through the 2-3 periods of prolonged freeze that embrace the inlet each winter.

The other interesting find about shorebirds and Cook Inlet was the number of birds that pass through the region in spring, particularly southern Redoubt Bay. During the first two weeks of May in both 1997 and 1998 peak single day counts of almost 200,000 birds were recorded. This year the mean daily count during peak migration was over 141,000 birds (range 125,000-176,000, n = 8 days). Over 91% of these were Western Sandpipers. If turnover rates from the Copper River Delta can be applied to Cook Inlet, then about 3/4 of a million Western Sandpipers used the area in spring, 75% in southern Redoubt Bay alone. Based on WHSRN criteria for numbers, Redoubt Bay for sure and probably Trading Bay qualify as Hemispheric Reserves and Tuxedni Bay as an International Reserve.

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BRISTLE-THIGHED CURLEWS ON TELEVISION

Lee Tibbitts and I visited the Seward Peninsula in July to film segments for Animal Planet's All Bird TV (part of the Discovery channel). One segment concerned the curlew; the other focused on Beringian avifauna, including Bar-tailed Godwits, Wandering Tattlers, and a few non-wader species. Wally Johnson also did a segment on his Golden-Plovers. All segments were scheduled to air November 28-29, but I haven't found any Alaska cable affiliates that carry this program. We will be given a tape so if it doesn't air in Alaska, we can provide some light entertainment at a future meeting.

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BREEDING ECOLOGY OF SHOREBIRDS IN SOUTHCENTRAL ALASKA

In 1998, all fieldwork for this study took place in the Anchorage Bowl; during the previous 3 years of this study we had divided our time between study sites in Anchorage and the Susitna Flats State Game Refuge. From 1 May to 15 JulY we conducted weekly point-count surveys at intertidal and upland sites to assess the relative abundance, migration phenology, and habitat associations of shorebirds. In addition, we continued to make detailed observations of individually color-marked Lesser Yellowlegs (*Tringa flavipes)* to monitor their breeding success and post-breeding movements.

A brief summary of this year’s results includes: a) we recorded 20 species of shorebirds during surveys of vegetated intertidal and upland habitats, most of these species (12) migrated through in the spring while 8 species remained to breed locally; b) we resighted about 60 % (52/90) of the adult yellowlegs that had been banded since 1995; c) median hatch date for yellowlegs was 12 June (range = 2-26 June; n = 38 pairs); d) adults with broods traveled an average of 4.5 km before chicks fledged; e) we noted a substantial loss of natural breeding habitats in the Anchorage Bowl this year when portions of Klatt Bog and the lower Hillside were developed for residential use.

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DEMOGRAPHY OF WESTERN SANDPIPERS AT KANAGAYAK, YUKON DELTA NATIONAL WILDLIFE REFUGE

In 1998, Yukon Delta National Wildlife Refuge initiated a long-term study of western sandpipers at Kanagayak, a permanent field station on the central Yukon-Kuskokwim Delta. Western sandpipers arrived at Kanagayak on 6 May. The first eggs were laid on 21 May, and the first clutches were completed on 25 May. Preliminary censuses on 4 randomly selected, 16-ha plots yielded densities of 218 birds/km^2. On an 18-ha intensive study plot, nest-searching revealed 42 nests, for a density of 233 nests/km^2. Nest initiations spanned 4 weeks, but 76% of all nests were initiated in the first 2 weeks of that period. The modal size of completed clutches was 4 eggs, and the mean was 3.89. Four- and 3-egg clutches comprised 89% and 11%, respectively, of completed clutches. The mean initiation dates for 4- and 3-egg clutches were 29 May and 7 June, respectively. Nest fate was determined for 38 of 42 nests: 23 hatched, 12 were depredated, 2 were found abandoned, and 1 was stepped on. Mayfield nest success was 55.5%. Although nests were active from 21 May to 8 July, predation only occurred between 30 May and 23 June. Among depredated nests, 2 incubating adults were killed by the nest predator (presumably mink), 2 clutches were apparently destroyed by other sandpipers (based on small, round puncture holes in eggs), and 1 clutch was taken by a long-tailed jaeger. Fifty-four breeding adults were captured, banded, and individually color-marked on the 18-ha intensive study plot. Field work in 1999 will focus on demographic variables, including survival and reproductive success.

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