Kachemak Bay Shorebird Monitoring Project: 2010 Ground and Aerial Survey Report

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With much support from Kachemak Bay Birders

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I. Executive Summary

In 2009 the Kachemak Bay Birders (based in Homer, Alaska) started the Kachemak Bay Shorebird Monitoring Project in order to obtain better information regarding the status of Kachemak Bay and Homer Spit spring shorebird migrations. Following a modified International Shorebird Survey protocol, a team of 16 volunteers simultaneously monitored six sites on or near the Homer Spit for two hours after high tide every five days from April 16 to May 26. We observed 24 species of shorebirds and approximately 7,406 individual birds.

These data were then compared to the seven years of data collected at the Homer Spit by former Homer resident George West in 1986 and 1989-1994. After adjusting West's daily counts of birds to match our survey protocols, we determined that the 2009 count for the Homer Spit was 68% of West's lowest year (1990) and only 13% of his highest year (1992).

The disparity between the two population data sets was alarming. Questions that we felt needed to be answered were whether 1) the ground-based survey results collected in 2009 represent a new "norm" or were they simply a low year, and 2) have shorebirds moved to other areas of the Bay given the increased level of activity present on the Homer Spit. Obviously, more work was needed.

Kachemak Bay Birders continued this citizen science project in 2010, essentially following the same protocol as in 2009. In nine sessions, from April 15 until May 25, a team of 20 volunteers observed 23 species of shorebirds and approximately 9,845 individual birds. What was notable this year was a slow start to the migration, perhaps because of a cold spring. However, a surge of Western Sandpipers and Dunlin between May 10th and 15th, creating a bimodal distribution in counts for these species, resulted in more birds being observed in 2010 than in 2009. Nevertheless, the total number of birds observed for 2009 and 2010 was still less than survey counts done in the late 1980s and early 1990s.

A concern we had was that migrating shorebirds might be passing through Homer Spit between scheduled monitoring dates, thus not being included in our data. Accordingly, this year we did a daily spot check at Mud Bay during the expected peak of the migration, anticipating that this data would give us a better understanding of day-to-day variances with shorebird presence. In addition we sought other observations, such as list-serve birding reports, during the project time frame. This supplemental data resulted in a total of 20 shorebird species being observed on the Homer Spit and approximately 8,600 individual shorebirds. Considering that scheduled monitoring for Mud Bay on May 5th reported 500 Western Sandpipers and that spot checking this

site the day before reported 1,100 Western Sandpipers and 700 the day after, it does appear that some flocks of shorebirds may be arriving and leaving between scheduled monitoring dates. While these supplemental data cannot be directly compared to the scheduled monitoring data, it does provide a better overall picture of the Homer Spit shorebird migration.

To answer question #2 above, we added to this year's project an aerial shorebird survey in which the 320 mile long Kachemak Bay shoreline was flown five times at low elevation, starting May 1st, once every three days. This effort was funded by a grant from the U.S. Forest Service Copper River International Migratory Bird Initiative (CRIMBI). Identification was by shorebird size, not species. While we couldn't identify species of shorebird, we could clearly distinguish between flocks of shorebirds, gulls and ducks.

Our first flight on the afternoon of May 1st observed only a couple of small flocks of shorebirds at the Homer Spit and in other parts of Kachemak Bay. The next morning an email alert reported about a thousand newly arrived sandpipers in the Homer Spit area. We would have seen these birds the previous afternoon if they had first visited the upper part of the Bay. While just one incident, it indicates that shorebirds seen at the Homer Spit are not the same shorebirds seen in other parts of the Bay.

Our main purpose for doing the aerial surveys was to determine the spatial and temporal number of shorebirds that use Kachemak Bay during spring migration. Because of the late migration, our first four aerial surveys resulted in few observations. But the surge of shorebirds that finally arrived for the last aerial survey indicates that migratory shorebird concentrations were dispersed throughout Kachemak Bay at suitable beaches. While the Homer Spit is certainly a key area, it is not the only place where shorebirds concentrate. However, with the exception of Seldovia Bay where we saw nearly two thousand shorebirds, the flocks were not very large. Consequently, based on this limited effort, it does not appear that the disparity between shorebird counts taken in the 1980s and 1990s can be attributed to shorebirds being displaced from Homer Spit to other parts of Kachemak Bay.

Our ground and aerial surveys do not provide enough data to accurately estimate the number of shorebirds that visit Kachemak Bay or Homer Spit during spring shorebird migration, but some order of magnitude guesses may be possible. For one, as expected, Homer Spit shorebird populations appear to be representative of Kachemak Bay both in terms of timing and numbers. Also, while the aerial surveys did observe more shorebirds in other parts of the Bay (3,440) than Homer Spit (1,403), we didn't find significantly larger concentrations. Based on our limited information, it appears that about 10,000 shorebirds visited Homer Spit this spring and at least that many visited other parts of Kachemak Bay. But this is substantially less than the 100,000 to 1,000,000 shorebirds said in previous surveys that stopover in Kachemak Bay during spring migration.

We feel that additional ground-based and aerial surveys are needed to provide better validation of what we have been able to surmise so far and plan to continue this effort next year.

During the last year, our observations were posted on local birding list-serves, there were four PowerPoint presentations of the 2009 results, we helped update the WHSRN profile for Kachemak Bay and our data was used to support testimony on the Homer Spit comprehensive plan.

This report as well as Excel spreadsheets of the monitoring data can be obtained from our website http://kachemakbaybirders.org/

II. Introduction

Kachemak Bay, located in Alaska's Cook Inlet region, is internationally recognized by biologists for the richness of its biological resources and as an important stopover for migrating shorebirds.

> Extensive mudflats in Kachemak Bay are oases for small shorebirds migrating over extensive ocean and mountainous terrain, particularly in early May when, in most years, terrestrial and aquatic habitats are still snow covered or frozen. Western sandpipers probably fly non-stop from Puget Sound to the Copper River Delta, depleting their energy reserves. Senner and West (1978) and Senner et al (1981) hypothesized that small shorebirds, enroute from their Copper River Delta stopover to western Alaska breeding grounds, cannot store enough energy to fly all the way and, therefore, must make intermediary stops on the mudflats of Kachemak Bay (AD&FG 1993).

Appendix A provides a checklist extracted from *A Birders Guide to Kachemak Bay* (http://www.birdinghomeralaska.org/) which includes just Kachemak Bay shorebirds. There are 37 species on the list of which 29 species are either common or uncommon at some season of the year (mostly spring and/or fall) and 8 are either rare or accidental.

The centerpiece of Kachemak Bay is the 4.5 mile long Homer Spit (see Figure 1). This is a road accessible site with a variety of littoral zone habitat which attracts a diversity of shorebirds during spring migration - in addition to tourists and fishermen. Two areas of Kachemak Bay (Fox River Flats and Mud Bay/Mariner Park Lagoon on the Homer Spit) are Western Hemisphere Shorebird Reserve Network (WHSRN) sites of international significance. As Figure 2 illustrates, other parts of the Bay also have conservation designations. Virtually the entire Bay has been named a State Critical Habitat Area as well as a National Estuarine Research Reserve unit. Audubon Alaska has named Kachemak Bay South Shore, Fox River Flats and the Homer Spit as an Important Bird Area.

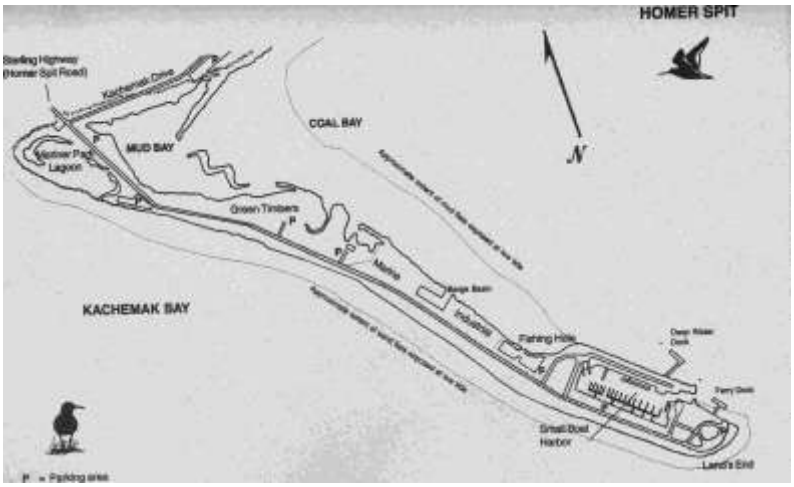

Figure 1. Graphical illustration of the Homer Spit showing primary survey areas mentioned in the text. Map courtesy of George West.

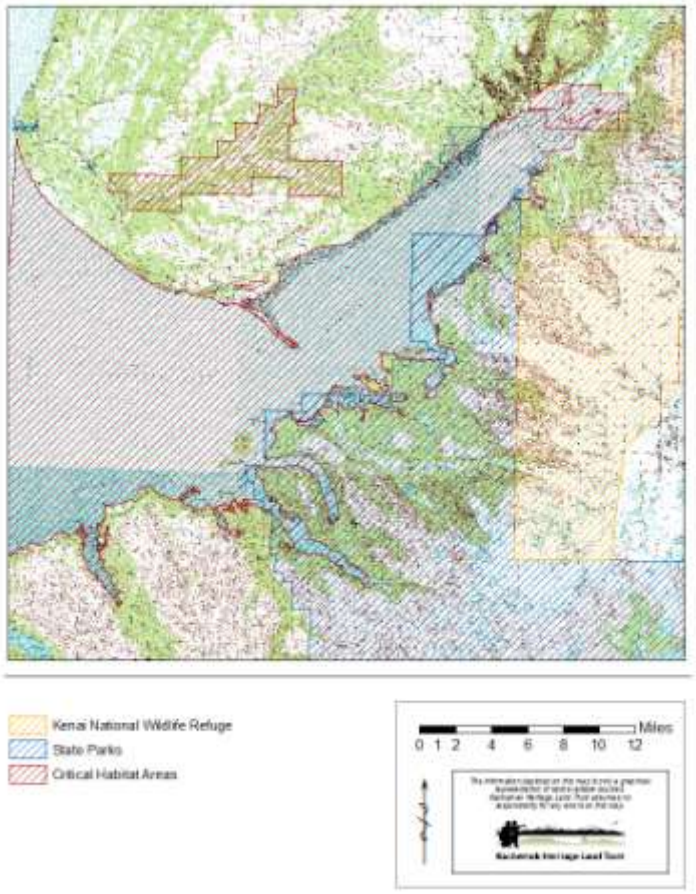

Figure 2. Illustration of Kachemak Bay area showing protected areas. Homer Spit is in the middle of the picture. Map courtesy of Kachemak Heritage Land Trust.

During the 1970s and 1980s there were occasional studies to estimate the number of migrating shorebirds that stopped in Kachemak Bay. During the late 1980s and 1990s, former Homer resident George West conducted daily counts in April and May to determine the number of shorebirds that use the Homer Spit portion of the Bay. The population of shorebirds in the Kachemak Bay area at the time is summarized in a March 30, 1994 letter by Alaska Department of Fish and Game (ADF&G) Deputy Commissioner McKie Campbell to WHSRN in support of having the Fox River Flats Critical Habitat Area designated as a WHSRN. He said the area has "at least 100,000 shorebirds which annually stop to rest and feed during spring and fall migration" and that "Mud Bay hosts tens of thousands of birds annually."

These studies provide a useful record. But there have been no recent studies before our project to determine the status of Kachemak Bay/Homer Spit shorebird populations. Homer area birders who have lived here for 20 years or more, including some who were involved in these earlier studies, believe that things aren't what they use to be.

To address this concern, in the spring of 2009, the Kachemak Bay Birders initiated a citizen's science shorebird monitoring project for the Homer Spit and adjacent waters. The purpose of the project is reflected in the mission statement that evolved the previous winter during planning for this effort.

> Mission: To better understand population trends associated with migrating shorebirds that stopover in Kachemak Bay and to use this information to advance the conservation of these species both locally, nationally, and internationally.

The project that ensued resulted in a report, *Kachemak Bay Shorebird Monitoring Project: Report for 2009 Spring Survey* (Matz 2009), which provided detailed information on not only the project, but the features of Kachemak Bay and the Homer Spit as well. The report concluded that the number of shorebirds counted in 2009 appeared to be less than surveys conducted in 1986 and 1989-1994 by West (West 1996). Conducting additional surveys in 2010 would help determine if this decline was due to annual variation or a real decline in shorebirds use of the area. In addition to repeating the ground surveys, the report recommended conducting an aerial survey of the greater Kachemak Bay Area to assess whether shorebirds use other portions of the Bay away from the Homer Spit.

The Kachemak Bay Birders continued ground monitoring of Homer Spit shorebirds in the spring of 2010. The protocol for ground monitoring was essentially the same as 2009. The protocol and its results are described in detail below. The Excel spreadsheets for this monitoring data can be obtained from the Kachemak Bay Birders website at http://kachemakbaybirders.org/ .

Last fall, in deciding how to approach an aerial survey, we found a local pilot Jose de Creeft of Northwind Aviation who has considerable experience in flying wildlife related aerial surveys, including annual surveys of Kachemak Bay clamming beaches. After working up a protocol and costs with Jose, we teamed up with the Kachemak Bay Conservation Society, a 501 (c)(3) organization in November to submit a proposal to the U.S. Forest Service Copper River International Migratory Bird Initiative (CRIMBI) to fund this effort. The proposal was granted in time for aerial surveys in May. The protocol and its results are described in detail following a review of the ground monitoring effort.

In addition to these two projects, we also discuss in this report additional efforts that resulted from this survey work, including:

- Reports on both the ground-based and aerial surveys that were submitted to the Kachemak Bay Birders and AKBirding list servers.
- Four PowerPoint presentations of the 2009 report.
- An update by Kachemak Bay Birders to the description of two Western Hemisphere Shorebird Reserve Network (WHSRN) sites located in Kachemak Bay.
- Testimony submitted by Kachemak Bay Birders to the City of Homer with regards to an updated Homer Spit Comprehensive Plan.

III. 2010 Homer Spit Ground-Monitoring Protocol

A. Methods

As in 2009, our ground monitoring protocol for 2010 used a modified version of the International Shorebird Survey (ISS) protocol to collect data (www.shorebirdworld.org/). Differences were:

1. Rather than collect data individually from one site, our protocol used a team effort to simultaneously cover several sites on or near the Homer Spit.

2. Despite the team effort, each monitoring site has different characteristics and data from each site should be considered an individual trip. But rather than report individually, monitoring data was gathered and entered into the database (ISS portal for eBird) by the project coordinator.

3. The ISS protocol states that monitoring frequency should be once every 10 days. However, migrating shorebirds tend to spend less time at Alaska stopover's than in the Lower-48. Studies of radio-tagged migrating shorebirds that stage in the Cooper River Delta found that these birds stay only 2 to 4 days (Warnock et al 2005). Other studies of radio-tagged shorebirds migrating through the Yakutat Forelands found that the stopover duration was just one day for 14 out 15 (93.3%) radio-tagged Western Sandpipers and two days for one (6.7%) bird (Andres et al 1998). Considering both the need to monitor more frequently than once every 10 days, yet to avoid double-counting by monitoring too often, we settled on monitoring once every five days. This was consistent with the level of effort that volunteer monitors were willing to commit.

4. Although not part of the protocol, this year we did do some daily spot monitoring of Mud Bay during the expected peak of the migration to determine if flocks of shorebirds (particularly Western Sandpiper and Dunlin) were passing through in-between our 5 day monitoring sessions.

Ground monitoring in 2010 was similar to that conducted in 2009. Differences were to eliminate Diamond Creek as a monitoring site (last year's effort yielded only one shorebird observation) and to reduce the field data report to one page (see Appendix B).

A total of 20 volunteers (all with birding experience in the Kachemak Bay area) monitored four sites on Homer Spit and two adjacent sites; Islands and Islets (which includes the waters between the Spit and the islands, islets, and shore on the south side of the Bay) and Beluga Slough (just north of the Spit). Each team monitored during the same two hours, once every five days, starting on April 15th and continuing through May 25th. (The 2009 report on our web site has aerial photos of each of these monitoring sites.) This time frame essentially brackets the beginning and end of the spring shorebird migration. Table 1 lists the volunteers who participated as well as the site and date of their participation.

Table 1. Shorebird Monitoring Schedule for ground surveys conducted on the Homer Spit and adjacent waters during the 2010 spring migration.

Volunteers		Monitoring Dates								
Monitoring Site	**Volunteers**	**15-Apr**	**20-Apr**	**25-Apr**	**30-Apr**	**5-May**	**10-May**	**15-May**	**20-May**	**25-May**
Mud Bay	Jason Sodergren	X	X	X	X	X	X		X	X
	Betty Siegel	X	X	X	X	X	X	X	X	X
	Gary Lyon	X				X	X	X	X	
	Victoria Winne				X					
	Lee Post							X		
Mariner Park Lagoon	George Matz	X	X	X	X	X	X	X	X	X
	Michael Craig	X	X	X	X	X	X		X	X
	Victoria Winne	X								
Mid-Spit	Lani Raymond	X		X	X	X	X	X	X	X
	Duane Howe	X	X	X	X		X	X		
	Gary Lyon		X							
	Nancy Wrocklege					X				
	Lee Post					X	X		X	X
Boat Harbor area	Sharon Baur	X			X					
	Michelle Michaud	X	X	X	X	X	X	X	X	X
	Victoria Winne		X	X		X	X	X		X
Islands & Islets	Karl Stoltzfus			X	X	X	X	X	X	X
Beluga Slough	Neil Wagner	X	X		X	X	X	X	X	X
	Kyra Wagner				X					
	Kim Donohue	X	X	X	X	X		X	X	
	Nina Daley	X	X	X	X	X	X	X		X
	Jessica Ryan						X			
	Phil Cowan			X	X			X		
	Angie Doroff				X					

As with last year, the starting time began when the outgoing tide was approaching 15.0 feet, or at high tide if the high tide was less than 15.0 feet. Table 2 lists the starting times, and the high tide time and levels (using the Seldovia tide tables) for each monitoring date. During our project, the tide ranged from a high of 21.1 feet on April 28 and 29 to a low of -4.4 feet on April 29.

Table 2: Homer Spit ground-monitoring times and tides for 2010.

	Starting Time		**High Tide**	
	Time	**Tide (ft.)**	**Time**	**Tide (ft.)**
Thursday, April 15th	5:45 pm	15.4	4:13 pm	18.3
Tuesday, April 20th	8:00 am	15.3	6:42 am	16.6
Sunday, April 25th	2:15 pm	15.5	1:03 pm	17.1
Friday April 30th	6:30 pm	15.7	4:57 pm	18.4
Wednesday May 5th	7:30 am	13.6	7:37 am	13.6
Monday May 10th	1:30 pm	14.7	1:16 pm	14.7
Saturday May 15th	6:15 pm	15.1	4:41 pm	17.6
Thursday May 20th	8:30 am	15.2	7:47 am	15.6
Tuesday May 25th	2:45 pm	15.3	1:47 pm	16.5

Monitors noted species and abundance, as well as when they first observed individual birds or flocks and when these birds left the monitoring site. The latter information allowed the coordinator to eliminate duplicate counts. Monitors also noted any disturbances to the shorebirds by people or predators. The coordinator added to the reports weather data for the monitoring period (including temperature, wind speed and direction, cloud cover, and precipitation) from the NOAA Homer Airport web site (http://weather.noaa.gov/weather/current/PAHO.html).

Volunteers caucused after each monitoring session to compare notes. If we determined that a flock of shorebirds had been counted at more than one site, an adjustment was made to the total count record. The data was entered in the ISS eBird database with a separate entry for each site. Data was also posted on Kachemak Bay Birders (birding@kachemakbaybirders.org) and AKBirding AKBirding@yahoogroups.com) list servers.

B. Results

Our ground monitoring surveys this spring observed 23 species of shorebirds and counted approximately 9,845 individual birds. Observers didn't venture to say which species of dowitcher was seen, but Short-billed Dowitchers breed locally and are more common in the area than Long-billed Dowitchers. Although we may have missed some shorebirds that passed through the area between monitoring dates (as discussed in the section on Supplemental Monitoring), it is likely that some birds were counted twice, particularly species that breed in the area (e.g. yellowlegs). Table 3 lists the species seen and their abundance.

Table 3. Shorebird species, ordered by abundance, that were detected during all survey dates during spring migration surveys in 2010.

Species	Count	Species	Count
Western Sandpiper	4,996	Pacific Golden Plover	42
Red-necked Phalarope	1,500	Greater Yellowlegs	36
LESA/WESA/SESA	803	Lesser Yellowlegs	26
Dunlin	561	Whimbrel	22
Rock Sandpiper	405	Yellowlegs sp.	18
Black Turnstone	373	Marbled Godwit	12
Black-bellied Plover	315	Black Oystercatcher	11
Least Sandpiper	245	Ruddy Turnstone	10
Semipalmated Plover	203	Pectoral Sandpiper	7
Surfbird	110	Semipalmated Sandpiper	5
Dowitcher sp.	82	Wilson's Snipe	5
Wandering Tattler	56	American Golden-Plover	1
		Sanderling	1

The table below lists the shorebirds observed for all six sites and for each monitoring session. Appendix B has detailed count data for each species at each site. Cells with red tabs have comments that give further details. These comments can be viewed via the Excel spreadsheet on our website, but not in this document. Some of this information (i.e., weather) is included in the email reports that are in Appendix C.

Table 4. Summary of the number and diversity of shorebird species observed at ground monitoring sites by survey date in 2010.

SITE : Homer Spit and Adjacent Waters
Survey Data

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	**Total**
Semipalmated Plover	0	0	0	3	0	5	128	54	13	203
Killdeer	0	0	0	0	0	0	0	0	0	0
American Golden-Plover	0	1	0	0	0	0	0	0	0	1
Pacific Golden Plover	1	2	25	5	7	0	0	2	0	42
Black-bellied Plover	0	6	14	134	137	3	8	13	0	315
Black Oystercatcher	0	0	0	2	2	0	2	1	4	11
Greater Yellowlegs	0	4	3	14	5	1	3	4	2	36
Lesser Yellowlegs	0	5	0	14	4	2	0	1	0	26
Yellowlegs sp.	0	10	0	3	0	0	0	5	0	18
Spotted Sandpiper	0	0	0	0	0	0	0	0	0	0
Whimbrel	0	0	0	0	2	1	1	5	13	22
Bar-tailed Godwit	0	0	0	0	0	0	0	0	0	0
Hudsonian Godwit	0	0	0	0	0	0	0	0	0	0
Marbled Godwit	0	0	0	0	0	1	0	11	0	12
Wandering Tattler	0	0	0	0	3	4	26	17	6	56
Surfbird	0	0	0	22	31	8	2	33	14	110
Ruddy Turnstone	0	0	0	0	3	0	3	1	3	10
Black Turnstone	0	0	0	0	14	110	228	20	1	373
Western Sandpiper	0	0	7	100	500	142	3880	367	0	4996
Least Sandpiper	0	0	0	0	0	2	97	146	0	245
Semipalmated Sandpiper	0	0	0	0	3	0	2	0	0	5
LESA/WESA/SESA	0	1	15	298	92	0	54	332	11	803
Sanderling	0	0	0	0	0	0	0	1	0	1
Pectoral Sandpiper	0	0	0	0	0	0	0	7	0	7
Dunlin	0	2	32	116	101	59	192	56	3	561
Rock Sandpiper	350	50	0	0	0	5	0	0	0	405
Baird's Sandpiper	0	0	0	0	0	0	0	0	0	0
Red Knot	0	0	0	0	0	0	0	0	0	0
Short-billed Dowitcher	0	0	0	0	0	0	0	0	0	0
Long-billed Dowitcher	0	0	0	0	0	0	0	0	0	0
Dowitcher sp.	0	0	0	12	3	5	31	31	0	82
Wilson's Snipe	0	0	0	3	1	0	0	1	0	5
Red Phalarope	0	0	0	0	0	0	0	0	0	0
Red-necked Phalarope	0	0	0	0	300	1000	100	100	0	1500
Other	0	0	0	0	0	0	0	0	0	0
Total	351	81	96	726	1208	1348	4757	1208	70	9845

No unusual disturbances were noticed during the entire project, though one observer mentioned there now appears to be fewer Bald Eagles in the area.

The figure below illustrates the arrival and departure of Western, Least, and Semipalmated Sandpipers as well as Dunlin. Note that there is a bimodal distribution in the arrival for all but the Least Sandpiper. This will be discussed later under Weather.

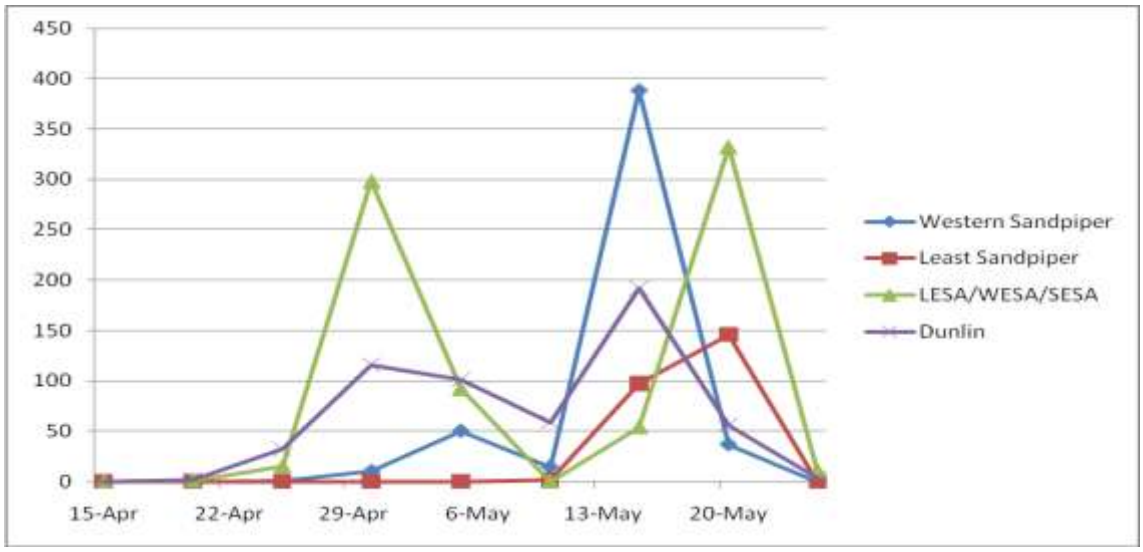

Figure 3. Number of Western, Least and Semipalmated Sandpipers and Dunlin observed during each ground survey in 2010. Note: The Western Sandpiper count was divided by 10 to keep it on scale.

The figure below illustrates the arrival and departure of six other relatively abundant species that had a count greater than 100. Note that Rock Sandpipers, which overwinter on the Homer Spit, were still present when we began monitoring, but were not at the peak abundance we typically observe in mid-winter. Unlike sandpipers and dunlin, there doesn't appear to be a bimodal distribution in abundance for any of these species, although the numbers may be too low to detect this.

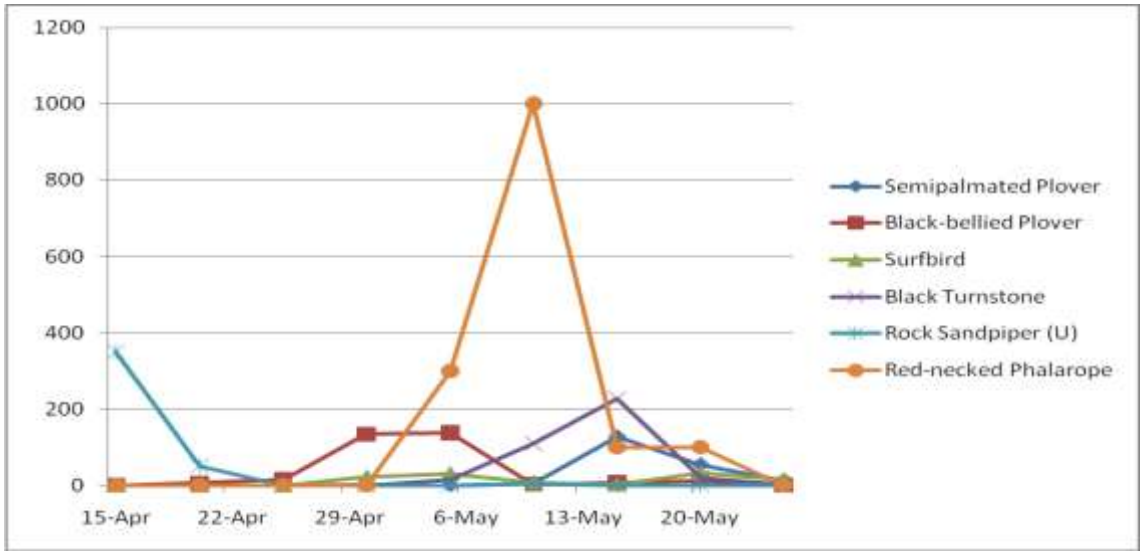

Figure 4: Arrivals and Departures for six species of shorebirds during 2010 ground surveys**.**

The next figure illustrates that Mud Bay, which has the most extensive mud flats of all six survey sites, is the most popular part of the Homer Spit for shorebirds. It attracted about 4,498 shorebirds during our monitoring session, or 46% of the birds counted. However, the Mid-Spit site, which has intertidal mudflats as well supratidal habitat, had the greatest species richness with 17 species of shorebirds observed. Beluga Slough had 15 species, Mud Bay and Mariner Park Lagoon each had 12 species, the Islands and Islets had 8, and Outer Spit had 7.

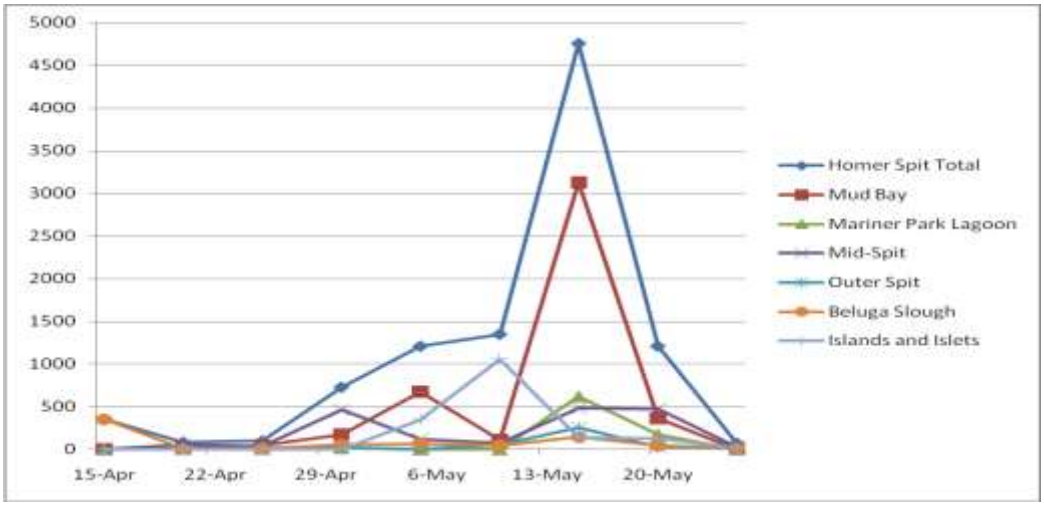

Figure 5: Number of shorebirds counted at each site during ground surveys in 2010.

C. Weather

Our first day of monitoring (morning of April 15) the temperature was 34° F at the nearby Homer Airport. Temperatures during monitoring sessions never reached 50° F until the last session on May 25th. The weather this spring for Homer and south coastal Alaska was abnormally cool. The *Summer 2010 Alaska Climate Dispatch* (http://ine.uaf.edu/accap//dispatch.htm) says "Temperatures in Southwestern Alaska and the Aleutians were much colder than normal for spring time. The colder temperatures in Southwestern Alaska were consistent with the extensive ice cover in the Bering Sea." The seasonal temperature departure for Homer was -1.0° F, with March being -1.9°, April being -0.5°, and May being -0.6° below average.

A cool spring may account for the late arrivals of some species. Western Sandpipers and Dunlins typically arrive in large numbers at the Homer Spit during the first week in May. But as Figure 3 illustrates, these species didn't arrive this year in appreciable numbers until well into the second week of May, two days after the Kachemak Bay Shorebird Festival ended. The Copper River Delta Shorebird Festival in Cordova held its event the same weekend. Milo Burcham said in a telephone call that they also experienced an earlier, smaller arrival of Western Sandpipers and Dunlin, then a drop-off which was followed by a large surge that was later than normal. However, an e-mail from Dianna Moore of the Grays Harbor Shorebird Festival said "they showed up right on schedule here."

IV. Supplemental Monitoring

Last year we noticed that a large flock of shorebirds arrived just after our May 1 session. These birds were mostly gone by our next session (May 6) and, therefore, do not show up in our data. This year we tried to get some idea as to how much "leakage" we might have with shorebirds that visit the Homer Spit in-between monitoring sessions.

To fill in the gaps, Michelle Michaud visited Mud Bay at around the 15.0 foot tide level from May 1 through 9 on days not scheduled for monitoring. Added to this were observations from Homer Spit locations during the Kachemak Bay Shorebird Festival (May 6-9) as well as Kachemak Bay Bird Alert postings. (Appendix C includes a summary of supplemental observations from April 28 to May 18). While these supplemental data cannot be directly compared to the scheduled monitoring data, it does provide a better overall picture of the Homer Spit shorebird migration.

The supplemental effort resulted in a total of 20 shorebird species being observed on the Homer Spit and approximately 8,600 individual shorebirds. The most effort and the most observations (84%) were from Mud Bay. In addition, a Red Knot was seen on May 31st at the Homer Spit, a species not seen during scheduled monitoring.

Table 5: Scheduled and supplemental observations of shorebirds at Mud Bay in 2010.

SITE : **Mud Bay**

Combined Data (Survey data and Other Observations)

	April	**May**														
SPECIES	**30**	1	2	3	4	**5**	6	7	8	9	**10**	11	12	13	14	**15**
Semipalmated Plover	**2**	2														**27**
Killdeer (R)																
American Golden-Plover (U)										x						
Pacific Golden Plover (U)	**5**	4					1			x						
Black-bellied Plover	**39**	64	66		67	**65**	75	21	7	x	**1**	5	1			**1**
Black Oystercatcher (U)																
Greater Yellowlegs	**3**	3			2		1		1							**1**
Lesser Yellowlegs							1	x	1		**1**					
Yellowlegs spp.	**3**		1													
Spotted Sandpiper																
Whimbrel																
Bar-tailed Godwit (U)																
Hudsonian Godwit (U)																
Marbled Godwit (U)								1	1			2				
Wandering Tattler																
Surfbird																
Ruddy Turnstone (U)			2		3	**3**	4	1								
Black Turnstone		1	2					x								
Western Sandpiper	**100**	27			1100	**500**	700	250		x	**108**	2000	1900			**2950**
Least Sandpiper										x						
Semipalmated Sandpiper																**1**
LESA/WESA/SESA			300						40							
Sanderling (U)		1	1		1											
Pectoral Sandpiper																
Dunlin	**16**	21	100		92	**100**	89	39	x	x		50	110			**120**
Rock Sandpiper (U)																
Baird's Sandpiper (R)																
Red Knot (U)																
Short-billed Dowitcher		6			1		3	6				1				
Long-billed Dowitcher (U)																
Dowitcher spp.	**4**		6			**3**			x	x						**28**
Wilson's Snipe																
Red Phalarope (R)																
Red-necked Phalarope																
Other																
Total	**172**	129	478	0	1266	**671**	874	318	50	0	**110**	2058	2011	0	0	**3128**

Monitoring data in bold

Table 5 provides a listing of observations of just Mud Bay between April 30th and May 15th. Scheduled monitoring observations are in bold. While the May 15th monitoring date coincided with a surge of Western Sandpiper's and Dunlin, it also appears that some shorebirds may come and go between scheduled monitoring dates. For example, note that 500 Western Sandpipers were counted on May 5th, but 1,100 the day before with 700 the day after.

Although observer bias could account for part of the count difference, there does appear to be significant day-to-day variation in Homer Spit shorebird presence during the spring migration. There have been no stopover duration studies specific to Kachemak Bay, so we can only surmise that there is some "leakage" to our monitoring counts. Based on the supplemental data, it appears that while some shorebirds may have come and gone in-between our monitoring dates, it is probably no more than 2-3 times our monitoring count. There is no evidence to suggest that it is significantly greater.

V. Trends

A. Comparing 2009 to 2010

About half way through this years project it was beginning to look like we might see even fewer shorebirds than last year. But, as illustrated by Figure 6, a late surge of Western Sandpipers and Duunlin were still mostly around by our May 15th session. As it turned out, this years total count of 9,845 shorebirds was about a third more than last years total count of 7,406. However, since this years monitoring caught some of the surge and last years didn't, it is probably more correct to state that the total count for the two years is reasonably similiar.

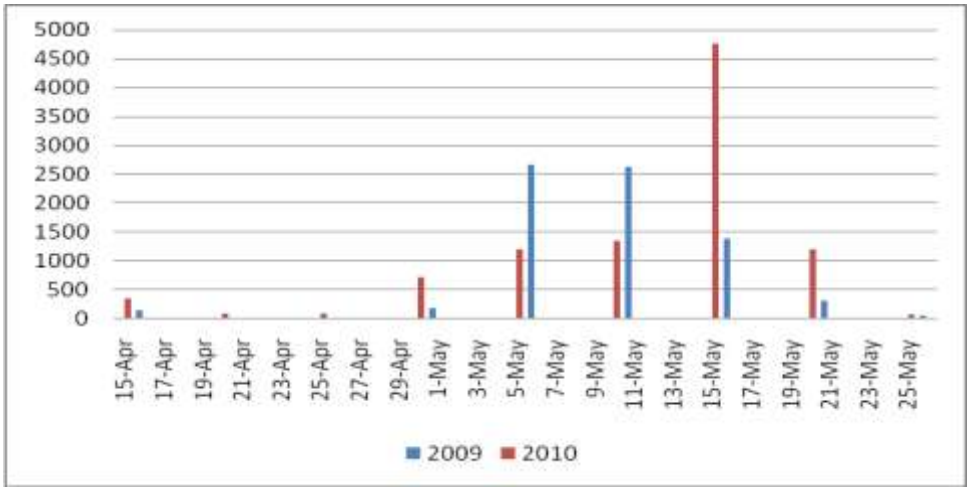

Figure 6. Total number of shorebirds of all species counted at six survey sites on the Homer Spit in 2009 and 2010.

In addition to the count, the number of shorebird species seen in 2009 (24 species) and 2010 (23 species) during monitoring was reasonably similar. Species observed in 2009 but not this year includes Spotted Sandpiper, Bar-tailed Godwit, Hudsonian Godwit, and Baird's Sandpiper. Species observed in 2010 but not in 2009 includes Lesser Yellowlegs, Sanderling, and Pectoral Sandpiper.

B. Comparing Current Data to West's Data

Last year, after completing our shorebird monitoring project, we compared our data to the seven years of data collected at the Homer Spit by former Homer resident George West in 1986 and 1989-1994. The protocol used by West was somewhat similar to ours. "Estimates, or actual counts when possible, of all shorebirds encountered in Mud Bay, Mariner Park Lagoon, and along the north side of the Homer Spit were made daily at or just after high tide from 22 April to 18 May (West 1996). "

West sent us a copy of his raw data in an Excel format, making it easier to arrange a more direct comparison between data sets. Since his monitoring included only the Homer Spit, we needed to use only our observations from Mud Bay, Mariner Park Lagoon, Mid-Spit, and Outer Spit and delete from the analysis our data for the Islands and Islets and the Beluga Slough sites. Also, West did daily counts and we monitored once every five days. Consequently, West's data that was used for the analysis was limited to just those dates that matched our monitoring protocol. After making these adjustments, we determined that our 2009 count for the Homer Spit was 68% of West's lowest year (1990) and only 13% of his highest year (1992).

The disparity between the two population data sets was alarming. Questions that we felt needed to be answered were whether 1) the ground-based survey results collected in 2009 represent a new "norm" or were they simply a low year, and 2) have shorebirds moved to other areas of the Bay given the increased level of activity present on the Homer Spit. Obviously, more work was needed.

Our intent this year was to extend the comparison between West's and the 2009 data by simply adding a 2010 column. But since shorebirds were still arriving this year past May16th, the last date used in the initial analysis, data for May 21st had to be added to both West's and our 2009 data in order to provide a more relevant comparison. Also, our monitoring dates for this year are a day earlier than last year because we base the date on the Monday after Shorebird Festival, plus or minus five days, to avoid conflict with those who volunteer for both this project and the shorebird festival. The table below compares by species and abundance, our 2009 and 2010 data for Homer Spit sites to West's data based on five day intervals.

Table 6: Comparison of West Shorebird Data (1986-1994) to Kachemak Bay Birders Data (2009 and 2010) for Homer Spit sites.

Based on five day intervals from April 26th to May 21st for 1986-2009 and from April 25th to May 20th for 2010.

SPECIES	1986	1989	1990	1991	1992	1993	1994	Homer Spit 2009	Homer Spit 2010
Semipalmated Plover	6	8	1	9	27	22	28	159	158
American Golden-Plover			5	26	9		1	3	
Pacific Golden Plover							7	4	39
Black-bellied Plover	275	1	86	52	244	51	79	170	307
Black Oystercatcher									1
Greater Yellowlegs					17	4		7	13
Lesser Yellowlegs									20
Yellowlegs spp.									3
Whimbrel				1	9	1		2	6
Bar-tailed Godwit				1	2			3	
Hudsonian Godwit							1	18	
Marbled Godwit		4		1	1		2	3	10
Wandering Tattler				5	2	1	2	3	37
Surfbird	1000	75	3015	602	10010	1200	830	69	39
Ruddy Turnstone	1		3		7	1	8		6
Black Turnstone	600	451	1812	766	1730	500	262	46	294
Western Sandpiper	14000	12025	2010	20510	20725	7200	17469	3071	4935
Least Sandpiper	50			2	21	2	20	121	195
Semipalmated Sandpiper								1	4
LESA/WESA/SESA								103	640
Sanderling									1
Pectoral Sandpiper	2			1	1				
Dunlin	130	1760	133	1219	3271	562	642	1091	535
Rock Sandpiper					7	2			
Baird's Sandpiper								1	
Red Knot						1	2		
Short-billed Dowitcher	600	525	58	183	1354	325	175	22	
Dowitcher spp.								97	71
Wilson's Snipe									
Red-necked Phalarope				100			100		
Total	16664	14849	7123	23478	37437	9872	19628	4994	7314

Figure 7 gives an overall picture by illustrating annual totals for all species. While more shorebirds were counted this year than last, fewer shorebirds were observed in 2009 and 2010 than in the mid 1980s to mid 1990s period. There isn't enough data at this point to state with certainty that there has been a decline in shorebird populations when comparing current surveys to surveys from previous years, but it does appear that this is a likely possibility.

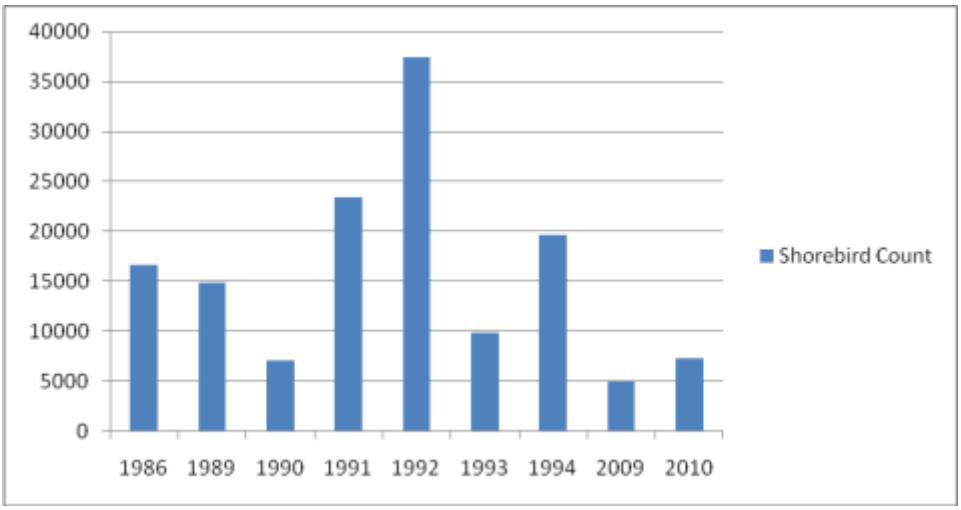

Figure 7. A comparison between West data and 2009 and 2010 data of the total number of shorebirds counted for the year.

Figure 8 provides an analysis of the trend for some of the prominent shorebird species we observed; Western/Least/Semipalmated Sandpipers (mostly Westerns), Dunlin, Surfbirds, and Black Turnstone. It does appear that for these species in particular, there has been a decline in abundance between the 1986- 1994 and 2009 and 2010.

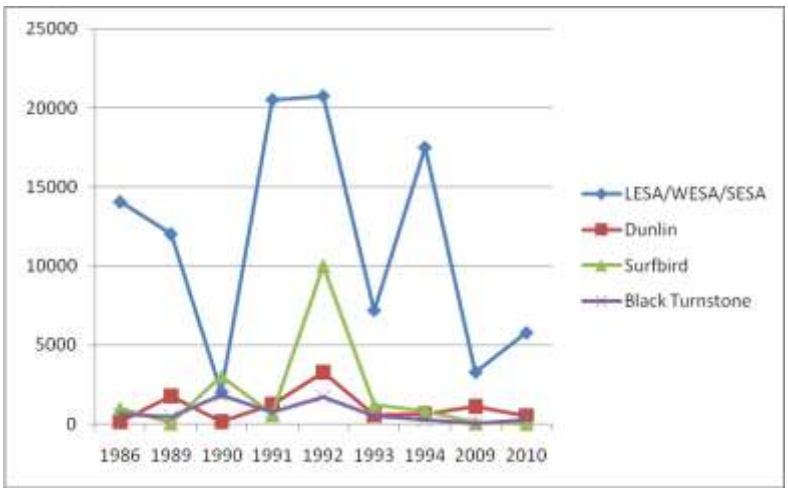

Figure 8. Homer Spit population trends for several select species.

Although West's data shows that in 1990 his count for Western Sandpipers was even less than our 2009 and 2010 count, a closer look reveals that some of his high counts for that year happened to miss the dates we are using for comparison. The average number of Western Sandpiper observed by West over seven years was 66,321. While the chart shows that 1990 is only 15% of this average for the six days being used for comparison, his total annual Western Sandpiper count for 1990 was 29,745, which is 45% of the average. Therefore, the 1990 data appears to be an anomaly.

While there appears to be fewer Surfbirds and Black Turnstones as well, West's data is based on daily observations and these species seem to spend more than a day or two on the Homer Spit. Therefore, West's data may have counted the same birds more than once. Nevertheless, the Audubon Alaska 2010 WatchList (http://ak.audubon.org/birds-science-education/alaska-watchlist) lists Surfbirds as "red" (populations are vulnerable, and declining or depressed) and the Black Turnstone as "yellow" (populations are vulnerable, but not declining).

VI. Kachemak Bay Aerial Survey

A. Previous Surveys

There have been aerial surveys of Kachemak Bay in previous years that tried to estimate shorebird populations during spring migration - with widely varying results. Most of these surveys focused on the Fox River Flats area in the upper part of the Bay and most were done before George West's ground-based monitoring on the Homer Spit during the late 1980s and early 1990s.

The ADF&G's *Kachemak Bay and Fox River Flats Critical Habitat Areas Management Plan* (December 1993) provides an overview:

> Shorebirds - A brief pulse of millions of migrating shorebirds each spring provides Kachemak Bay with its largest influx of shorebirds. Several sites in Kachemak Bay provide critical rest stops for migrating shorebirds. Fox River Flats attracts the most migrating shorebirds; over 600,000 (mostly western sandpipers) were counted on May 6, 1977 (Senner et al. 1981). Kransnow and Halpin (1981) estimated an average daily density of 10,207 western sandpipers/mile^2 in the Fox Farm area between May 1-15. An estimated 1-2 million small shorebirds were observed on an aerial survey of the Fox River Flats on May 11, 1976 (Table 4). Ten of fifteen western sandpipers collected at Fox River Flats had eaten Macoma balthica; total numbers of this clam accounted for 30% of the birds' diet (Senner and West). Similar large numbers of shorebirds have not been reported in recent years, although survey data is lacking.

The attachment to ADF&G's March 30, 1994 letter to WHSRN in support of having the Fox River Flats designated as a WHSRN site provides another synopsis of Fox River Flats shorebird populations.

> Shorebirds Using the Area: It appears that this area is used by over 100,000 shorebirds during spring migration each year. The predominant species in spring migration on the Fox River Flats in order of abundance are Western Sandpipers, Dunlin, and Short-billed Dowitchers. Because of the inaccessibility of this area by vehicle or on foot, or even easily by boat because of the extensive shallow mud flats, specific identification of shorebirds on the flats is not easy. The species composition of shorebirds utilizing Mud Bay, approximately 15 miles southwest of the Fox River Flats, probably reflects the composition of shorebirds on the Homer Spit during spring migration.

Number of Shorebirds: It appears that this area is used by over 100,000 shorebirds during spring migration each year. Only a few surveys have been taken of the Fox River Flats, and these are from the air. In 1976 Erikson reported the following; April 30: 8,000 small shorebirds; May 3: 5 large shorebirds, 10 yellowlegs, 4,058 small shorebirds; May 15: 35 medium shorebirds, 1,022 small shorebirds. Ballard estimates that there were 1-2 million shorebirds on the Fox River Flats on May 11, 1976. In 1981, Krasenow and Halpin estimated 50,000 Western Sandpipers on May1, and 10,000 daily from May 2 to 6. In the spring of 1992, Del Frate and Sinnott reported the following; May 5: 22,000+ shorebirds; May 8: 35,000+ shorebirds; May 14: 7,900+ shorebirds. Gill flew over the Fox River Flats on May 5, 1993, and estimated 98,703 small sandpipers.

This information provides a useful reference that can be used to roughly gauge the current status of Kachemak Bay shorebird populations.

B. 2010 Aerial Survey

After completing last year's monitoring, we realized that we needed a better idea as to the approximate number of shorebirds that currently stop at Kachemak Bay, other than the Homer Spit, and if these shorebirds also visit the Homer Spit. Last fall the Kachemak Bay Conservation Society, a 501 (c)(3) organization that can accept grants, submitted a proposal on behalf of Kachemak Bay Birders to the US Forest Service Copper River International Migratory Bird Initiative (CRIMBI) to fund an aerial shorebird survey in May 2010 of the 320 mile long Kachemak Bay shoreline. The objectives of the proposal were to;

1) Assess inter-annual variation in shorebird use and species composition of the Homer Spit by repeating ground-based surveys during spring migration in 2010,
2) Obtain contemporary estimates of the spatial and temporal number of shorebirds that use the greater Kachemak Bay Area during spring migration 2010, and
3) Estimate the population size of shorebirds using the greater Kachemak Bay area during spring migration 2010.

The proposal requested and received $4,530 from CRIMBI, which was matched with $5,600 in Kachemak Bay Birders in-kind volunteer effort. Most of the funding was used to pay for charters with Jose de Creeft of Northwind Aviation.

C. Methods

In preparing our aerial survey protocol we contacted the Homer office of the ADF&G Sport Fish Division who charters with Northwind Aviation for annual surveys of Kachemak Bay clamming activity. Since clammers tend to concentrate on beaches that have an abundance of Pacific little neck and butter clams, we thought that these beaches might also have smaller clams (e.g., *Macoma*) and other invertebrates that attract migrating shorebirds. ADF&G provided us with aerial photo maps of popular clamming beaches, which we used to plan our initial route.

The survey protocol we developed was based on flying the Kachemak Bay shoreline at a low elevation (100-200 feet) once every three days during the peak of the shorebird migration in early May To optimize for intertidal exposure, we began surveys three and a half hours before high tide (see Table 7 for schedule). We used three volunteers; two on the same side of the Cessna 206 floatplane we flew in who made independent observations and a recorder in the copilot's seat who recorded the GPS location and size of shorebird flocks sighted by the observers.

The volunteers were:
1. George Matz who recorded count data and GPS readings.
2. Michelle Michaud who was the primary observer.
3. Victoria Wilson Winne who was the secondary observer.
4. Laurie Daniel participated in the practice run, but was called out of town after that.

Table 7: Survey times and corresponding tides for the 2010 Kachemak Bay shorebird aerial survey.

	Survey Times		**High Tide**	
Date	**Start**	**Total Time**	**Time**	**Tide (ft.)**
Friday April 30th *	3:00 pm	1.4 hours	4:57 pm	18.4
1. Saturday May 1st	2:30 pm	1.7 hours	5:40 pm	17.3
2. Tuesday May 4th	4:23 pm	1.8 hours	8:12 pm	13.8
3. Friday May 7th	6:30 am	1.6 hours	10:09 am	12.2
4. Monday May 10th	9:30 am	1.7 hours	1:16 pm	14.7
5. Thursday May 13th	12:10 pm	1.7 hours	3:19 pm	17.3

***** Practice flight

After a practice flight we decided that the best route was to fly directly from the Homer Airport to Seldovia Bay (an appendage to Kachemak Bay), which would allow maximum beach exposure at the rockier parts of Kachemak Bay where visibility might be more of an issue. Figure 9 illustrates a typical GPS track for a flight. Rather than fly a straight transect, we decided to maximize our opportunity to see shorebirds by closely following the curvature of the shoreline. In areas with wide tidal flats, we would circle around and essentially hunt for flocks of shorebirds. Our approach was to try to find and record all the shorebirds within the area. Because shorebirds tend not to be evenly dispersed across the beach, the approach we used may be a more reliable for counting scattered flocks of shorebirds than following an arbitrary transect that might not be aligned with flocks are temporarily.

The GPS coordinates we recorded are only approximate since typically there was a few seconds delay between where a flock was first seen and then recorded. Flying at about 100 mph, the GPS reading could be several hundred feet distant from where the flock actually was when first seen. However, this inaccuracy in coordinates is probably less than the typical movement of a flock as it forages up and down a beach, or even after being disturbed by as plane.

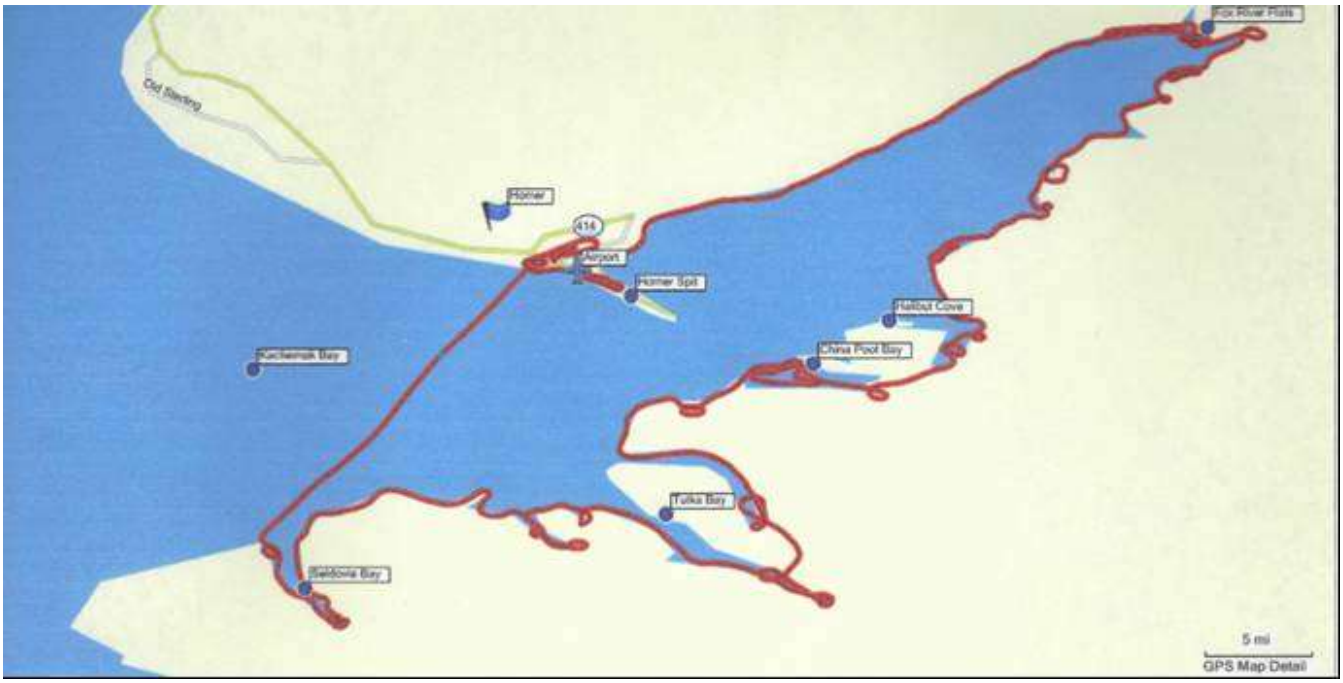

Figure 9. Aerial survey route #5 (based on GPS track lines) for shorebirds in Kachemak Bay.

D. Results

Birds were identified by size (small such as sandpiper, medium such as plovers, and large such as whimbrels) rather than by species since the flight speed doesn't allow much time to see details. While we couldn't easily identify species of shorebird, we could clearly distinguish between flocks of shorebirds, gulls and ducks.

Table 8: A summary by location of shorebird observations during the 2010 Kachemak Bay aerial survey.

Shorebirds Counted During 2010 Kachemak Bay Aerial Survey

	Flight					
Location	**1-May-10**	**4-May-10**	**7-May-10**	**10-May-10**	**13-May-10**	**Total**
Mid-Spit		74		25	1	100
Millers Landing	15					15
Mud Bay	11	400	150	27	700	1288
Homer Spit Subtotal	26	474	150	52	701	1403
Beluga Slough					88	88
Eastland Creek					50	50
Fox River Flats	7	90		65	588	750
Glacier Spit	60				350	410
Halibut Cove Lagoon		40				40
Jakolof Bay			2			2
Mallard Bay					1	1
Neptune Bay			200			200
Seldovia Bay					1870	1870
Tutka Bay					29	29
Kachemak Bay Subtotal	67	130	202	65	2976	3440
Total	93	604	352	117	3677	4843

Table 8 provides a summary of the observations noted in Figure 10.

Figure 10: Symbols indicating where shorebirds were observed during 2010 Kachemak Bay aerial surveys for all flights. Waypoint numbers correspond to data in Appendix D that lists the number of shorebirds that were seen.

One question that we hoped the aerial surveys might help resolve is whether shorebirds that stopover in other parts of Kachemak Bay, particularly Fox River Flats, also stop at the Homer Spit. Based on one good observation, it doesn't appear so. On our first aerial survey we saw just small flocks of shorebirds in the Fox River Flats and Glacier Spit areas. The next morning an email alert from a local birder said that overnight about a thousand sandpipers arrived at Millers Landing, which is two miles east of Mud Bay. If these shorebirds had first spent time in the upper part of the Bay, we would have seen them the previous afternoon.

Our main purpose for doing aerial surveys was to determine the spatial and temporal number of shorebirds that use Kachemak Bay, other than the Homer Spit, during spring migration. Because of the late migration this year, our first four aerial surveys resulted in few observations. But as illustrated by Table 8, the surge of shorebirds that finally arrived for the last aerial survey indicates that migratory shorebird concentrations are dispersed throughout Kachemak Bay where there are suitable beaches. While the Homer Spit is certainly a key area, it is not the only place where shorebirds concentrate. For all five flights, more shorebirds were seen in other parts of Kachemak Bay (3,440) than the Homer Spit (1403). However, with the exception of Seldovia Bay where we saw nearly two thousand shorebirds, the flocks were not very large. Based on this limited effort, it does not appear that the disparity between shorebird counts taken in the 1980s

and 1990s can be attributed to shorebirds being displaced from Homer Spit to other parts of Kachemak Bay.

VII. Summary

A. Surveys

With the exception of a later migration, perhaps because of a cold spring, the results from ground-based monitoring this year were comparable to last year. The addition of the aerial survey indicated that there doesn't appear to be significant differences between the Homer Spit and the rest of Kachemak Bay in timing and shorebird numbers. This year's ground-based and aerial surveys demonstrated that the ground-based and aerial surveys can work in tandem to provide a more complete picture of the shorebird population that pass through the Homer Spit and Kachemak Bay each year.

B. Population Estimate

Our ground and aerial surveys do not provide enough data to estimate the population of shorebirds that visited Kachemak Bay or Homer Spit during the 2010 spring shorebird migration, but some order of magnitude guesses may be possible. For one, as expected, Homer Spit shorebird populations appear to be representative of Kachemak Bay both in terms of timing and numbers. While the aerial surveys did observe more shorebirds in other parts of the Bay than the Homer Spit, as earlier mentioned, we didn't find significantly larger concentrations. Based on our limited information, it appears that about 10,000 shorebirds visited Homer Spit this spring and at least that many visited other parts of Kachemak Bay. This is substantially less than the 100,000 to 1,000,000 shorebirds that earlier surveys have said stopover in Kachemak Bay and the Homer Spit during spring migration. While our 2010 population estimate is just an educated guess, there doesn't appear to be much guessing that shorebird populations in the Kachemak Bay/Homer Spit area are not what they use to be 20-40 years ago.

It is uncertain how lower populations of shorebirds that stopover at Kachemak Bay/Homer Spit might affect previous designations that were based on population estimates, an example being the WHSRN site for Fox River Flats and Mud Bay/Mariner Park Lagoon. Nevertheless, both Kachemak Bay and the Homer Spit continue to be important stopover sites for migrating shorebirds.

VIII. Other Activities

A. Outreach

The information obtained as a result of the 2010 Kachemak Bay Shorebird Monitoring Project was reported to local birders via the Kachemak Bay Birders (birding@kachemakbaybirders.org) list serve and the AKBirding AKBirding@yahoogroups.com) list serve.

B. Presentations

A PowerPoint presentation on our 2009 effort was presented at the following.

- Alaska Shorebird Group annual meeting: Alaska Science Center, Anchorage, Alaska, Dec. 7 -8, 2009
- Kachemak Bay Research Reserve - What's New in the Bay: Homer, Alaska, Feb.2010
- Kachemak Bay Research Reserve - Citizen Science Teacher Workshop; Homer, Alaska, April 23, 2010
- Kachemak Bay Shorebird Festival; May 6, 2010, Homer, Alaska

C. Western Hemisphere Shorebird Reserve Network

Kachemak Bay Birders was asked by the Western Hemisphere Shorebird Reserve Network, which is managed by the Manomet Center for Conservation Sciences on Cape Cod, to write an updated profile for its two sites on Kachemak Bay (Mud Bay/Mariner Park Lagoon and Fox River Critical Habitat Area) and to organize a detailed site assessment using their Site Assessment Tool. The updated site profile for Kachemak Bay/Homer Spit can be read at http://www.whsrn.org/site-profile/kachemak-bay. For the site assessment we enlisted the help of the City of Homer Planning Department, Alaska Department of Fish and Game, and the Kachemak Bay Research Reserve. This detailed assessment provides a good overview of local conservation issues and is a good reference for any effort relating to Kachemak Bay habitat. It can be viewed at Kachemak Bay Birders website (http://kachemakbaybirders.org/).

D. Public Media

The May 5, 2010 issue of the Homer Tribune featured an article on the Kachemak Bay Shorebird Monitoring Project. See Attachment D

E. Testimony

One of the intents of the Kachemak Bay Shorebird Project is to acquire data that can be used for conservation purposes, such as to avoid threats to local shorebird habitat. Recently, the City of Homer began a review of the Homer Spit Comprehensive Plan. The Kachemak Bay Birders submitted verbal and written testimony about the importance of the Homer Spit as critical shorebird habitat, asking that this be reflected in any plan revisions. We seemed to be persuasive and hope the final plan will be friendly to shorebirds. Attachment E has the written testimony.

IX. Future Efforts

To be more confident of the population conclusion given above, we feel it is essential to continue both ground-based monitoring of the Homer Spit and aerial surveys of the entire Kachemak Bay shoreline. In addition to this effort we will look into options to provide some indication as to the status of marine invertebrates, like *Macoma*, that provide an essential food source for hungry migrating shorebirds. We will also be interested in looking into the possibility of coordinating our monitoring efforts with other key shorebird stopover sites within the Pacific Flyway.

X. Acknowledgements

The Kachemak Bay Shorebird Monitoring Project is a citizen science effort that could not exist without volunteer support. Those who volunteered in this year's effort are listed in Table 1.

This year we also received a grant from the U.S. Forest Service Copper River International Migratory Bird Initiative to conduct an aerial survey of Kachemak Bay shorebirds during peak migration. This funding allowed us to charter with Jose de Creeft of Northwind Aviation to conduct the survey. We are thankful to the Forest Service for this opportunity, Jose for his expertise in local flying conditions, and the Kachemak Bay Conservation Society for submitting the proposal on behalf of the Kachemak Bay Birders.

In addition, we had the opportunity to give four presentations on our 2009 project. We thank River Gates for including us in the Alaska Shorebird Group annual meeting, Megan Murphy of the Kachemak Bay Research Reserve for inviting us to "What's New in the Bay," Stormy Haught of Kachemak Bay Research Reserve for inviting us to the Citizen Science Teachers Workshop, and the Kachemak Bay Shorebird Festival Committee for asking us to give a presentation at this year's festival.

We also thank Meredith Gutowski of Manomet Center for Conservation Sciences for her assistance in updating the Western Hemisphere Shorebird Network information on its Kachemak Bay sites.

A special thanks to Richard Lanctot, PhD who is the Alaska Region Shorebird Coordinator, for the US Fish and Wildlife Service. Rick continues to provide us with important advice and assistance. Both Rick and Michelle Michaud devoted much time to reviewing drafts of this report.

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XI. **Appendices**

Appendix A: Birds of Kachemak Bay, Alaska: Shorebird Checklist

Appendix B: Kachemak Bay Shorebird Project Monitoring Report Form

Appendix C: Spreadsheets with observation data for each site and monitoring date.

Appendix D: Shorebird Observations during Kachemak Bay Aerial Survey.

Appendix E: Email reports to birdling list-serves.

Appendix F: Homer Tribune article on the Kachemak Bay Shorebird Project.

Appendix G: Letter from Kachemak Bay Birders to the Homer Planning commission regarding the Homer Spit Comprehensive Plan.

Appendix A

Birds of Kachemak Bay, Alaska: Shorebird Checklist

This Checklist covers the Anchor River drainage, the watersheds draining into Kachemak Bay including all of Kachemak Bay State Park and the Bay itself between Anchor Point and Point Pogibshi.

Abundance

C - Common: Easily found in small to large numbers in appropriate habitat at the right time of year.
U - Uncommon: Occasionally, but not always, found in small number with some effort in appropriate habitat at the right time of year.
R - Rare: Occurs in very small numbers or in very limited number of sites and may not be found every year or even with concentrated effort. There are more than a few records of these species in appropriate habitats at the right time of year.
A - Accidental: Represents an exceptional occurrence of birds outside their normal range that might not be repeated again for decades.

Status

B - confirmed breeder b - probable breeder
r - resident sr - summer resident wr - winter resident
m - migrant, passing through on way to summer or winter grounds, may only be found in narrow periods of time
v - visitor, not on normal migration route, may stay for one day or all season
i - irruptive species whose numbers are highly variable from year to year and may not be present every year.

Black-bellied Plover	C	C	C	-	m
American Golden-plover	U	U	U	-	m
Pacific Golden-plover	U	R	U	-	m
Semipalmated Plover	C	C	C	-	sr/m B
Killdeer	R	R	-	-	v
Black Oystercatcher	U	U	U	R	sr B
Greater Yellowlegs	C	C	C	-	sr B
Lesser Yellowlegs	C	C	C	-	sr b
Solitary Sandpiper	R	R	R	-	m
Wandering Tattler	C	C	C	-	sr
Spotted Sandpiper	C	C	C	-	sr B
Whimbrel	C	C	C	-	sr/m
Bristle-thighed Curlew	A	-	-	-	m
Hudsonian Godwit	U	A	-	-	m
Bar-tailed Godwit	U	A	A	-	m
Marbled Godwit	U	-	-	-	m
Ruddy Turnstone	U	R	R	-	m
Black Turnstone	C	U	U	-	m
Surfbird	C	C	C	-	sr/m
Red Knot	U	R	R	-	m
Sanderling	U	U	U	A	m
Semipalmated Sandpiper	C	C	C	-	m
Western Sandpiper	C	C	C	-	m
Red-necked Stint	A	A	-	-	v
Temminck's Stint	A	-	-	-	v
Least Sandpiper	C	U	U	-	sr/m B
Baird's Sandpiper	R	R	R	-	m
Pectoral Sandpiper	C	U	C	-	m
Sharp-tailed Sandpiper	-	-	U	-	m
Rock Sandpiper	C	R	U	C	wr
Dunlin	C	U	U	R	m
Ruff	A	-	-	-	v
Short-billed Dowitcher	C	C	C	-	m b
Long-billed Dowitcher	C	U	U	-	sr/m
Common Snipe	C	C	C	R	sr B
Red-necked Phalarope	C	C	C	-	sr B
Red Phalarope	A	A	A	-	v

Appendix B

Kachemak Bay Birders
2010 Shorebird Monitoring Project

Site: **Time Started:** **Monitor #1**
Date: **Time Ended:** **Monitor #2**
Distance Covered: **Monitor #3**
Disturbance:

Name of Species	Estimate	Actual Count	Total Count & Estimate	Time Observed	Time Left Site
Semipalmated Plover					
Killdeer (R)					
American Golden-Plover (U)					
Pacific Golden Plover (U)					
Black-bellied Plover					
Black Oystercatcher (U)					
Greater Yellowlegs					
Lesser Yellowlegs					
Yellowlegs spp.					
Spotted Sandpiper					
Whimbrel					
Bar-tailed Godwit (U)					
Hudsonian Godwit (U)					
Marbled Godwit (U)					
Wandering Tattler					
Surfbird					
Ruddy Turnstone (U)					
Black Turnstone					
Western Sandpiper					
Least Sandpiper					
Semipalmated Sandpiper					
LESA/WESA/SESA					
Sanderling (U)					
Pectoral Sandpiper					
Dunlin					
Rock Sandpiper (U)					
Baird's Sandpiper (R)					
Red Knot (U)					
Short-billed Dowitcher					
Long-billed Dowitcher (U)					
Dowitcher spp.					
Wilson's Snipe					
Red-necked Phalarope					
Other (specify):					

Appendix C

SITE : **Mud Bay**

Survey Data Stationary Count

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	**Total**
Semipalmated Plover				2			27	11	4	44
Killdeer (R)										0
American Golden-Plover (U)										0
Pacific Golden Plover (U)		1	25	5				2		33
Black-bellied Plover		3	1	39	65	1	1	12		122
Black Oystercatcher (U)								1		1
Greater Yellowlegs				3			1	1		5
Lesser Yellowlegs						1				1
Yellowlegs spp.		5		3						8
Spotted Sandpiper										0
Whimbrel										0
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)								9		9
Wandering Tattler										0
Surfbird										0
Ruddy Turnstone (U)					3					3
Black Turnstone										0
Western Sandpiper			7	100	500	108	2950	270		3935
Least Sandpiper										0
Semipalmated Sandpiper							1			1
LESA/WESA/SESA										0
Sanderling (U)										0
Pectoral Sandpiper										0
Dunlin		1	9	16	100		120	40		286
Rock Sandpiper (U)										0
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.				4	3		28	15		50
Wilson’s Snipe										0
Red Phalarope (R)										0
Red-necked Phalarope										0
Other										0
Total	0	10	42	172	671	110	3128	361	4	4498

SITE : **Mariner Park Lagoon**

Survey Data	Stationary Count									
	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	Total
Semipalmated Plover							37	13		50
Killdeer (R)										0
American Golden-Plover (U)										0
Pacific Golden Plover (U)	1									1
Black-bellied Plover							1	1		2
Black Oystercatcher (U)										0
Greater Yellowlegs		4		4		1		1		10
Lesser Yellowlegs		5		14	3	1		1		24
Yellowlegs spp.										0
Spotted Sandpiper										0
Whimbrel								2		2
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)										0
Wandering Tattler										0
Surfbird										0
Ruddy Turnstone (U)										0
Black Turnstone										0
Western Sandpiper							550	21		571
Least Sandpiper							22	136		158
Semipalmated Sandpiper							1			1
LESA/WESA/SESA			7							7
Sanderling (U)										0
Pectoral Sandpiper										0
Dunlin							2			2
Rock Sandpiper (U)										0
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.							3			3
Wilson’s Snipe										0
Red Phalarope (R)										0
Red-necked Phalarope										0
Other										0
Total	1	9	7	18	3	2	616	175	0	831

SITE : **Mid-Spit** Travelling Count

Survey Data

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	Total
Semipalmated Plover				1		5	30	28	8	72
Killdeer (R)										0
American Golden-Plover (U)		1								1
Pacific Golden Plover (U)		1			7					8
Black-bellied Plover		3	13	95	70	2	6			189
Black Oystercatcher (U)										0
Greater Yellowlegs								2		2
Lesser Yellowlegs										0
Yellowlegs spp.										0
Spotted Sandpiper										0
Whimbrel						1	1			2
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)						1				1
Wandering Tattler							7	2	1	10
Surfbird										0
Ruddy Turnstone (U)									3	3
Black Turnstone						11				11
Western Sandpiper						3	350	75		428
Least Sandpiper						2	25	10		37
Semipalmated Sandpiper					2					2
LESA/WESA/SESA		1		255	42			332	11	641
Sanderling (U)								1		1
Pectoral Sandpiper										0
Dunlin		1	23	100		49	60	16	3	252
Rock Sandpiper (U)	350	50								400
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.				8				10		18
Wilson’s Snipe										0
Red Phalarope (R)										0
Red-necked Phalarope										0
Other										0
Total	350	57	36	459	121	74	479	476	26	2078

SITE : **Outer Spit** Travelling Count

Survey Data

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	Total
Semipalmated Plover							2	2	1	5
Killdeer (R)										0
American Golden-Plover (U)										0
Pacific Golden Plover (U)										0
Black-bellied Plover										0
Black Oystercatcher (U)										0
Greater Yellowlegs										0
Lesser Yellowlegs										0
Yellowlegs spp.										0
Spotted Sandpiper										0
Whimbrel					1			1		2
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)										0
Wandering Tattler						2	17	9	5	33
Surfbird				22	1	1	2	13		39
Ruddy Turnstone (U)							3			3
Black Turnstone						55	228			283
Western Sandpiper								1		1
Least Sandpiper										0
Semipalmated Sandpiper										0
LESA/WESA/SESA							4			4
Sanderling (U)										0
Pectoral Sandpiper										0
Dunlin										0
Rock Sandpiper (U)										0
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.										0
Wilson’s Snipe										0
Red Phalarope (R)										0
Red-necked Phalarope										0
Other										0
Total	0	0	0	22	2	58	256	26	6	370

SITE : **Beluga Slough** Travelling Count

Survey Data

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	Total
Semipalmated Plover							30			30
Killdeer (R)										0
American Golden-Plover (U)										0
Pacific Golden Plover (U)										0
Black-bellied Plover					2					2
Black Oystercatcher (U)										0
Greater Yellowlegs			3	7	5		2		2	19
Lesser Yellowlegs					1					1
Yellowlegs spp.		5						5		10
Spotted Sandpiper										0
Whimbrel					1			2	13	16
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)								2		2
Wandering Tattler										0
Surfbird										0
Ruddy Turnstone (U)								1		1
Black Turnstone								20		20
Western Sandpiper						31				31
Least Sandpiper							50			50
Semipalmated Sandpiper					1					1
LESA/WESA/SESA			8	43	50		50			151
Sanderling (U)										0
Pectoral Sandpiper								7		7
Dunlin					1	10	10			21
Rock Sandpiper (U)										0
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.						5		6		11
Wilson’s Snipe				3	1			1		5
Red Phalarope (R)										0
Red-necked Phalarope										0
Other										0
Total	0	5	11	53	62	46	142	44	15	378

SITE : **Islands and Islets** Travelling Count

Survey Data

	April				May					
SPECIES	15	20	25	30	5	10	15	20	25	Total
Semipalmated Plover							2			2
Killdeer (R)										0
American Golden-Plover (U)										0
Pacific Golden Plover (U)										0
Black-bellied Plover										0
Black Oystercatcher (U)				2	2		2		4	10
Greater Yellowlegs										0
Lesser Yellowlegs										0
Yellowlegs spp.										0
Spotted Sandpiper										0
Whimbrel										0
Bar-tailed Godwit (U)										0
Hudsonian Godwit (U)										0
Marbled Godwit (U)										0
Wandering Tattler					3	2	2	6		13
Surfbird					30	7		20	14	71
Ruddy Turnstone (U)										0
Black Turnstone					14	44			1	59
Western Sandpiper							30			30
Least Sandpiper										0
Semipalmated Sandpiper										0
LESA/WESA/SESA										0
Sanderling (U)										0
Pectoral Sandpiper										0
Dunlin										0
Rock Sandpiper (U)						5				5
Baird's Sandpiper (R)										0
Red Knot (U)										0
Short-billed Dowitcher										0
Long-billed Dowitcher (U)										0
Dowitcher spp.										0
Wilson’s Snipe										0
Red Phalarope (R)										0
Red-necked Phalarope					300	1000	100	100		1500
Other										0
Total	0	0	0	2	349	1058	136	126	19	1690

SITE : **Kachemak Bay Summary**

Other Observations

	April			May																		
SPECIES	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
Semipalmated Plover				2			4				x	2		5						9	10	32
Killdeer (R)																						0
American Golden-Plover (U)												x										0
Pacific Golden Plover (U)				4					1			x										5
Black-bellied Plover	7			64	66		67		75	22	7	x		6	1							315
Black Oystercatcher (U)																						0
Greater Yellowlegs				3			3		3	2	2	1		6								20
Lesser Yellowlegs									1	x	2			1							1	5
Yellowlegs spp.					1																	1
Spotted Sandpiper																						0
Whimbrel										2		1		1								4
Bar-tailed Godwit (U)											x											0
Hudsonian Godwit (U)																						0
Marbled Godwit (U)										1	1	x		2								4
Wandering Tattler										x	x	x										0
Surfbird										x	x	x									65	65
Ruddy Turnstone (U)					2		3		4	1											1	11
Black Turnstone				1	2				x	x	x	x									2	5
Western Sandpiper				27			1100		830	250	3	x		2675	1900					215	25	7025
Least Sandpiper							40		22	12	12	2		45						15	15	163
Semipalmated Sandpiper																						0
LESA/WESA/SESA					300						40											340
Sanderling (U)				1	1		1															3
Pectoral Sandpiper											1			1								2
Dunlin				21	100		96		124	39	x	x		72	110					5		567
Rock Sandpiper (U)																						0
Baird's Sandpiper (R)																						0
Red Knot (U)																						1
Short-billed Dowitcher														1								1
Long-billed Dowitcher (U)				6			1		3	6				4								20
Dowitcher spp.											x	x										0
Wilson's Snipe					6		1															7
Red Phalarope (R)																						0
Red-necked Phalarope																						0
Other																						0
Total	7	0	0	129	478	0	1316	0	1063	335	68	6	0	2819	2011	0	0	0	0	244	119	8596

Appendix D

Shorebird Observations During Kachemak Bay Aerial Survey

Kachemak Bay 2010 Aerial Shorebird Survey

					Shorebird Count		
Survey	**Date**	**Waypoint #**	**Location**	**GPS**	**Small**	**Medium**	**Large**
#1	1-May-10	2	Mud Bay	N59 38.449 W151 28.021		11	
		3	Millers Landing	N59 40.217 W151 25.319	15		
		4	Fox River Flats	N59 45.178 W151 01.433		7	
		5	Glacier Spit	N59 38.164 W151 12.256	60		
#2	4-May-10	13	Halibut Cove Lagoon	N59 35.430 W151 10.860	20+20		
		15	Fox River Flats	N59 46.909 W150 59.890	30		
		18	Fox River Flats	N59 47.167 W151 02.472	50	10	
		19	Mud Bay	N59 37.858 W151 29.054	400		
		20	Mid-Spit	N59 37.470 W151 27.643	4+50	20	
#3	7-May-10	25	Jakolof Bay	N59 28.092 W151 32.155	2		
		29	Neptune Bay	N59 32.547 W151 24.360	200		
		33	Mud Bay	N59 38.119 W151 29.383	150		
#4	10-May-10	37	Fox River Flats	N59 47.230 W151 01.500	40		
		38	Fox River Flats	N59 47.156 W151 03.446	25		
		40	Mud Bay	N59 38.263 W151 28.902	7+20		
		41	Mid-Spit	N59 37.760 W151 28.523	25		
#5	13-May-10	44	Seldovia Bay Spit	N59 26.990 W151 44.766	300+350		
		45	Seldovia Bay	N59 23.628 W151 41.207	200		
		46	Seldovia Bay	N59 23.628 W151 41.207	10+1000	10	
		48	Tutka Bay	N59 24.469 W151 17.510	4+25		
		51	Glacier Spit	N59 38.787 W151 11.419	350		
		52	Mallard bay	N59 41.825 W151 07.000	1		
		53	Fox River Flats	N59 47.547 W151 01.605	400		
		55	Fox River Flats	N59 47.134 W150 59.506	180		
		56	Fox River Flats	N59 47.625 W151 01.810	8		
		57	Eastland Creek	N59 44.955 W151 10.372	50		
		58	Mud Bay	N59 38.081 W151 29.326	500		
		59	Mud Bay	N59 37.805 W151 29.181	200		
		60	Mid-Spit	N59 37.706 W151 28.248		1	
		61	Beluga Slough	N59 38.352 W151 32.300	6		
		62	Beluga Slough	N59 38.422 W151 31.266	40		
		63	Beluga Slough	N59 38.223 W151 31.436	40	2	

Appendix E

Report #1

On April 15 the Kachemak Bay Birders had their first shorebird monitoring event for this season. From now until May 25, we will be observing Homer Spit area shorebirds every 5 days for two hours when the outgoing tide is at 15.0 feet (or at high tide if it doesn't reach 15.0 feet).

Our hope is that on the first monitoring session we will catch some of the Rock Sandpipers still around plus some of the early shorebird migrants. This effort was successful. At the mid-Spit site 350 Rock Sandpipers were seen. At Mariner Park Lagoon a Pacific Golden Plover was seen, the first for the year for Homer. Thirteen observers participated in this effort.

There were also a lot of Northern Pintails and Mallard's at Mariner Park lagoon as well as a few Green-winged Teal.

Weather conditions at the airport were 34 degree from 6 to 8 pm, calm winds, and thin clouds.

George Matz

Report #2

Birders:

On April 20 the Kachemak Bay Birders had its second shorebird monitoring session for this season from 8:00- 10:00am. The weather at the Homer Airport during this time was 31° at 8 and 36° at 10. Wind was out of the NE from 0-10 mph. When we started, snain (snow and rain) was falling, but this cleared and we actually had some patches of sunshine. It doesn't take much for us to call it a nice day.

Despite recent impediments from the weather, shorebirds are starting to arrive at Homer Spit.

At Mariner Park Lagoon we saw two groups of yellowlegs for a total of 4 Greater Yellowlegs and 5 Lesser Yellowlegs. At one point, a pair of each was sharing the same pond. On group headed west and the other flew across the road to Mud Bay. In addition to seeing Northern Pintails, Mallards, Green-Winged Teal, NW Crows, Bald Eagles, Rock Pigeons, Canada Geese, Mew Gulls and a Ring-necked Pheasant, we watched a Black-capped Chickadee excavating a hole in a dead birch.

At Mud Bay, another team of observer's also saw 5 yellowlegs (which we are counting as the same seen at Mariner Park Lagoon) as well as 1 Pacific Golden Plover, 3 Black-bellied Plovers, and 1 Dunlin.

Report #3

Birders:

On Sunday afternoon April 25 from 2:15 - 4:15, the Kachemak Bay Birders had its third shorebird monitoring session for this season. At 2:00, the temperature at the Homer Airport was 42°, overcast and 8 mph winds from the head of the Bay (ENE). At 5:00 the temperature was 44°, light rain and 15 mph winds from the NNE. Conditions out on the Homer Spit were, as usual, gustier. But the fine spring day we had yesterday appears to have brought in an increase in new migrants.

Observers at Mud Bay, the usual hot spot, saw 25 Pacific Golden-Plovers, 1 Black-bellied Plover, 7 Western Sandpipers, and 9 Dunlin. These are the first sandpipers and dunlins seen at the Spit this spring migration. They also saw Sandhill Cranes, Northern Harriers, American Pipets and Lapland Longspurs.

On the other side of the Spit Road at Mariner Park Lagoon, observers saw a good variety of ducks, geese and the usual species, but no identifiable shorebirds. They did see 7 small shorebirds fly over at a distance towards Mud Bay, which could have been the Western Sandpipers seen thee earlier.

At the mid-Spit (Green Timbers and Louie's Lagoon), observers saw 13 Black-bellied Plovers and 23 Dunlin. No shorebirds were seen at the end of the Spit (the boat harbor and Lands End). Beluga Slough observers saw 3 Greater Yellowlegs and 8 unidentified peeps. In addition, they saw a number of Greater White-fronted Geese and Snow Geese.

No report from out on the water, but given the conditions, I doubt that Karl left the harbor.

George

Report #4

Birders:

On Friday evening April 30th from 6:30-8:30, the Kachemak Bay Birders had its fourth shorebird monitoring session for this season. A total of 15 observers participated.

At 6 pm the temperature at the Homer Airport was 41° with wind SW at 9 mph. At 8 pm the temperature was 40° with wind WSW at 12 mph. A light drizzle, almost wet snow, fell towards the end of the session. And shorebirds left the tropics for this! While true Alaskans relish winter, it always amazes me that the coldest part of a shorebirds life is when they come here in the summer to breed on the tundra - which seldom gets as warm in summer as a cold winter day in the tropics.

The beginning of the shorebird migration was really evident. As usual, plovers and yellowlegs were most prominent.

At Mud Bay observers saw 2 Semipalmated Plover, 5 Pacific Golden-Plover, 39 Black-bellied Plover, 3 Greater Yellowlegs, 3 Yellowlegs spp. , about 100 Western Sandpiper, 16 Dunlin, and 4 Dowitcher spp.

On the other side of the Spit road at Mariner Park Lagoon observers saw 4 Greater Yellowlegs and 14 Lesser Yellowlegs. Though shorebirds were limited, observers were entertained by watching the interaction between a lot of dabbling ducks (Green-winged Teal and Northern Pintail) and raptors (Bald Eagles, Sharp-shinned Hawk, and Northern Harrier). Several times the ducks scattered as an eagle swooped low.

At the mid-Spit (Green Timbers and Louie's Lagoon), observers were busy trying to count shorebirds scatted over the upper beach. They saw about 95 Black-bellied Plovers, 8 Dowitchers spp., 100 Dunlin, and three flocks of small sandpipers with about 20, 55, and 180 birds.

Observers at the end of the Spit (the boat harbor and Lands End) saw 22 Surfbirds, a new arrival for the year.

Beluga Slough observers saw 7 Greater Yellowlegs, 36-43 LESA/WESA/SESA (sandpipers). In addition they heard 2-3 Wilson's Snipe.

Karl Stoltzfus with Bay Excursions was out on the water and reported 2 Black Oystercatchers at the entrance to China Poot Bay. He went over to the Sixty-foot Rock area, but saw no shorebirds.

This year, in addition to the land based monitoring at Homer Spit, we are also doing aerial shorebird surveys once every three days of the entire Kachemak Bay from the Spit to Seldovia Bay. The flight takes about two hours. Funding for this is through a grant received by the Kachemak Bay Conservation Society. Friday we did a practice run. On Saturday afternoon, three hours before high tide, three observers did the first of five runs. In this survey we are identifying shorebirds only by size (small, medium, and large) rather than species. We saw only four small flocks; two flocks near Mud Bay with about 11 medium and 15 small birds, about 7 plovers (medium size) around Glacier Spit, and about 60 small birds in the China Poot area. While it doesn't appear many shorebirds are back yet, the encouraging part is that we could actually see shorebirds while flying at 150-200 feet.

Michelle Micaud, who is one of the observers, monitored Mud Bay after the flight, which provides sort of a reference. Her report follows.

I monitored Mud Bay today from 6:50 pm until 8:50 pm. I saw the following:
64 Black-bellied Plover
4 Pacific Golden Plover
21 Dunlin
27 Western Sandpiper
6 Dowitcher

2 Semi-palmated Plovers
3 Greater Yellowlegs
1 Black Turnstone
1 Sanderling

Interestingly, as I write this report I got an e-mail that about 1,000 shorebirds arrived overnight in the Mud Bay area. Having done flown over Kachemak Bay just 12 hours earlier, we can be fairly certain that they were not previously at the Fox River Flats or other parts of the upper Bay. With all the observers we have now, we may be able to get some idea as to how long they stay.

Once again the Kachemak Bay Shorebird Festival will be timed just right for the surge of the shorebird migration.

Next monitoring session is Wednesday, May 4th.

George

Report #5

Birders:

Following is the latest report on the Kachemak Bay Shorebird Monitoring Project.

On Tuesday afternoon starting at 4:30, three Kachemak Bay Birder observers (George Matz, Michelle Michaud, and Victoria Winne) flew the Kachemak Bay shoreline looking for concentrations of shorebirds. We are identifying birds by size (small, medium, and large) rather than species. This makes for a really simple field guide. This was our second of five flights, which lasted 1.8 hours. Typical of Homer (at least on occasion), the weather was perfect; warm, sunny, and calm.

Our flight (Northwind Aviation) left the Homer Airport and headed for Seldovia Bay where the exercise started. Flying at about 100-200 feet, we went to the wetlands at the head of the Bay hoping to see shorebirds but saw only eagles, ducks, gulls, and crows. The flight up and back Jakolof Bay, Tutka Bay, and Sadie Cove (with tight, dizzying turns at the head of each bay) had similar results. We circled the wide beach at China Poot Bay and still no shorebirds. We finally spotted two flocks of about 20 small shorebirds at Halibut Cove Lagoon. The flight over the vast Fox River Flats produced three small flocks of shorebirds (30, 50, and 10 birds). The flight back along the north shore of Kachemak Bay resulted in no shorebirds until we were at Mud Bay where there was a decent flock of about 400 small birds. Over mid-Spit we saw a flock of 4 and 50 small birds and 20 medium-sized birds.

On Wednesday morning May 5th from 7:30-9:30 the Kachemak Bay Birders had its fifth shorebird monitoring session for this season. A total of 14 observers participated.

At 7 am the temperature at the Homer Airport was 34° with winds calm and a clear sky. At 10 am the temperature was 43° and winds were still calm and sky clear.

At Mud Bay observers saw 65 Black-bellied Plovers, 3 Ruddy Turnstones, 500 Western Sandpipers, 100 Dunlin, and 3 Dowitchers. Good diversity and decent numbers.

At Mariner Park Lagoon observers saw only 3 Lesser Yellowlegs. Years ago this area used to be a premier place for shorebird observations. But now there seems to be more dabbling ducks than shorebirds. Perhaps the isostatic (glacial) rebound that is occurring here is changing the mudflats (and marine invertebrates) sought by shorebirds to wetlands (with aquatic plants) more favorable for ducks.

At the mid-Spit (Green Timbers and Louie's Lagoon), observers saw 65-70 Black-bellied Plovers fly over in one flock and then 3 more as well as 1 on the ground. They also saw 2 Semipalmated Sandpipers and three small flocks of small sandpipers flying towards Mud Bay. Observers noted that there seems to be more birds when the area gets flooded by high tide, which doesn't happen during periods of low tides like we are now in.

Observers at the end of the Spit (the boat harbor and Lands End) saw only 1 Surfbird this time plus 1 Whimbrel.

Beluga Slough observers were busy keeping up with 2 Black-bellied Plovers, 5 Greater Yellowlegs, 1 Lesser Yellowlegs, 1 Whimbrel, 1 Semipalmated Sandpiper, 1 Dunlin, a distant flock of about 50 small sandpipers, and 1 Wilson's Snipe.

Karl Stoltzfus with Bay Excursions was out on the water from 9 am till noon. He reports that the "water was calm with no wind. Route was west of spit, 60' Rock, Cohen Island and Gull Island. There were about 300 Red-necked Phalaropes seen along the route, mostly between Gull Island and the Spit. On 60' Rock counted 23 Surfbirds and 14 Black Turnstones. On Cohen Island 1 Wandering Tattler. Gull Island had 2 Wandering Tattler, 2 Black Oystercatchers and 7 Surfbirds."

In addition to our observations every 5 days, we are also getting daily reports from many observers. This nicely supplements our records. This information, though anecdotal, will let us know what might be slipping through the cracks. If you have any Kachemak Bay observations, please send them to Lani at: peep@islandsandocean.org.

Birding is getting fast and furious with changes every day. So get out there.

This week's Homer Tribune had a nice article about the shorebird monitoring project and the festival. It follows.

Report #6

Birders:

Here is a report on the Kachemak Bay Shorebird Monitoring Project.

On May 7th and 10th we completed the 3rd and 4th aerial survey of Kachemak Bay. Both surveys started out by flying directly to Seldovia Bay 3.5 hours before high tide and then following the Kachemak Bay shoreline in return to Homer. This involves about 1.8 hours of flying time and seems to provide good opportunity to see the beach.

On the 10th we left out Sadie Cove because of high winds at the head of the fiord. Fortunately we completed the flight before a gale warning storm swept in.

On the 7th, we saw a small flock of sandpipers at Jakolof Bay and a flock of about 200 at Neptune Bay. No shorebirds were seen anywhere else until we approached Mud Bay, which had a flock of about 150.

On the 10th, we saw two flocks of sandpipers of about 40 and 25 birds at the Fox River Flats. We saw two small flocks at Mud Bay and another flock at Louie's Lagoon.

On the afternoon of May 10th from 1:30 till 3:30, we monitored the Homer Spit area for shorebirds for the 6th time this spring. The temperature at the Homer Airport was 46° at 1:00 and 45° at 4:00. Winds were from the SE at 8-15 mph, though it was much windier on the Spit.

At Mud Bay observers saw 1 Black-bellied Plover and 1 Lesser Yellowlegs as well as 108 Western Sandpipers.

At Mariner Park Lagoon observers saw only 1 Greater Yellowlegs and 1 Lesser Yellowlegs.

At the mid-Spit observers saw 3 Semipalmated Plovers, 2 Black-bellied Plovers, 1 Whimbrel, 1 Marbled Godwit, 11 Black Turnstone, 3 Western Sandpipers, 2 Least Sandpipers, and 24 Dunlins as well as another flock of 25 that flew over.

At the boat harbor observers saw 2 Wandering Tattlers, 1 Surfbird, and 55 Black Turnstone.

At Beluga Slough there were flocks of 20 and 11 Western Sandpipers, a total of 10 Dunlin and 5 Dowitchers.

Karl Stoltzfus reported the following. "I am not going to be able to go to the usual areas today due to other commitments but here are yesterdays numbers. Cohen Island had 5 Surfbirds, 14 Black Turnstones and 2 Wandering Tattlers. Neptune Bay had 500 + shorebirds mostly Surfbirds with a few Black Turnstones and Rock Sandpipers. Gull Island 30 Black Turnstones and 2 Surfbirds. There were several hundred Red-necked Phalaropes on Sunday but on Saturday there were thousands, everywhere you looked there were flocks of Phalaropes."

One of the delights of shorebird migration is seeing large flocks of Western Sandpipers twisting and turning as they fly over the beach. We haven't seen much of that this year on the Homer Spit. The flocks have numbered in the hundreds, at most, rather than the thousands. Our aerial surveys indicate that the sandpipers are not visiting some other part of Kachemak Bay. Also, we have a lot of observers looking out there between our monitoring sessions every five days to make sure we don't miss a surge of birds. Although migration is not over yet, it is on the back-side of the curve. Observations between our official sessions haven't been that much different.

George West recently sent me an interesting report on his observations of Mud Bay shorebirds prior to 1990. A copy is attached without some graphs and tables.

Next report in five days.

Report #7

Birders:

Following is a report on the seventh Homer Spit session for the Kachemak Bay Shorebird Monitoring Project which took place on Saturday May 15th from 6:15-8:15 pm. There were 11 participants. At 6:00 pm the temperature at the Homer Airport was 45° with winds WSW at 12 mph. At 9:00 pm the temperature was 43° with winds WSW at 7 mph. As always, the winds on the Spit were stronger.

As you may recall, our last session five days ago was dismal; we were beginning to think that sandpipers had split the Spit this year. But someone famous once said, "Never count your shorebirds until they arrive" - or something like that. Just when we were ready to stop counting, they arrived by the thousands. Aaron Lang reported last Tuesday, less than 12 hours after our sixth monitoring session, about as many Western Sandpipers and Dunlin as we have seen all spring. There were perhaps twice as many within the next several hours. While the numbers seem to have tapered off a bit, fortunately, there were still thousands of sandpipers on the Spit when we started yesterday's session.

At Mud Bay, observers saw a large flock of about 1,600 Western Sandpipers, including some Dunlin, feeding voraciously on the mud flats. They saw another flock of 100 and 350 Westerns and Dunlins. They estimated that the Dunlin numbered around 120. They also saw 27 Semipalmated Plovers and only 1 Black-bellied Plover and 1 Greater Yellowlegs. The number of Black-bellied Plovers has dropped off considerably from previous sessions.

At Mariner Park Lagoon, observers first saw a small group with 1 Black-bellied Plover and 3 Dowitchers which left several minutes later. There was also a flock of about 100 Western Sandpipers flying towards Mud Bay (which apparently weren't picked up there) and about 450 feeding in the mud flats. About an hour later, the majority of this flock took off in several directions. There was also a flock of Least Sandpipers foraging in the grassy area right beneath the viewing platform. For about half an hour there was a Semipalmated Sandpiper with them, but it disappeared about the same time that the observers at Mud Bay noticed one(apparently the

same). The far side of the Lagoon had 37 Semipalmated Plovers scurrying around, but staying in the same general area during the two hours of observation. It appears that there is now a pulse of these small birds as well as sandpipers.

At mid-Spit, observers also saw a lot (30) of Semipalmated Plovers as well as 6 Black-bellied Plovers. In addition, they saw 1 Whimbrel, 7 Wandering Tattler, 350 Western Sandpipers, 25 Least Sandpipers, and 60 Dunlin.

In the rocky areas around the boat harbor observers saw 2 Semipalmated Plovers, 17 Wandering Tattler (a large group for this species), 2 Surfbirds, 3 Ruddy Turnstone, and 28 Black Turnstone on the breakwater as well as about 200 flying by. Their list included 4 sandpipers (ie, LESA/WESA/SESA).

Beluga Slough was also active. Observers saw at least 30 Semipalmated Sandpipers, 2 Greater Yellowlegs, 10 Dunlin, at least 50 Least Sandpipers, 50 sandpipers that were too far away to identify (LESA/WESA/SESA).

Karl was on the water for three hours that morning. He reports, "There were still some scattered flocks of Red-necked Phalaropes on the bay. We did not see more than 100 birds. The only other shorebirds we saw were on Glacier Spit; Black-bellied Plover - 2, Semipalmated Plover - 2, Wandering Tattler - 2 and a small flock of about 30 Western Sandpipers."

Last weekend during the shorebird festival the weather was sunny, calm and warm, but not many shorebirds. This weekend was just the opposite. It's interesting to speculate why the difference. How much does weather have to do with it? It seems that the windy weather lately might keep shorebirds in the Kachemak Bay area a bit longer, but why was the surge of sandpipers so late in arriving? Any thoughts?

Report #8

Birders:

Following is a report on the eighth Homer Spit session this spring for the Kachemak Bay Shorebird Monitoring Project. The session took place on Thursday May 20th from 8:30-10:30 am. There were 12 participants. At 8:00 am the temperature was 45° with calm winds and cloudy, but clearing, skies. At 11:00 am the temperature was 47° with SE winds at 6 mph and sunny skies.

The spring shorebird migration continues. Today we observed numerous small flocks, often with a mix of species, as well as some stragglers.

At Mud Bay observers saw 11 Semipalmated Plovers, 2 Pacific Golden-Plovers, and 12 Black-bellied Plovers. They also saw a Black Oystercatcher, which is unusual for Mud Bay though common on the rockier south side of Kachemak Bay. In addition, they observed 1 Greater

Yellowlegs, a flock of 9 Marbled Godwits (the highest count this year), 270 Western Sandpipers, 40 Dunlin, and 15 Dowitchers.

At Mariner Park Lagoon, observers started out with a flock of about 100 Least Sandpipers that were flying away and 1 Black-bellied Plover. The far-side of the Lagoon had a couple of mixed flocks that totaled 13 Semipalmated Plovers, 21 Western Sandpipers, and 36 Least Sandpipers. The Westerns and Least were right next to each other in the illuminating morning sun, giving good opportunity to study the slight differences. Both a Greater and Lesser Yellowlegs were seen stalking the puddles. Near the end of the session, 2 Whimbrel landed, which apparently were seen about a half hour earlier at Beluga Slough.

The mid-Spit team saw 28 Semipalmated Plovers, 2 Greater Yellowlegs, and 2 Wandering Tattlers. There were also small flocks that totaled 75 Western Sandpipers, 10 Least Sandpipers, 16 Dunlin, and 10 Dowitchers. Two flocks of 32 and about 100 birds included a mix of species. They also noted that there seems to be far fewer Bald Eagles this year compared to last year. One thing we note in our observations is disturbance to shorebirds (e.g. raptors).

The outer Spit, which includes the boat harbor, a rockier type of habitat, observed 2 Semipalmated Plovers, 1 Whimbrel, 9 Wandering Tattler, 13 Surfbirds, and 1 Western Sandpiper.

The Beluga Slough team noted disturbances to shorebirds from eagles and people walking dogs. In terms of shorebirds, they saw 5 Yellowlegs, 2 Whimbrel (also seen at Mariner Park Lagoon), 1 Black Turnstone, 20 Western Sandpipers, 7 Dunlin, and 6 Dowitchers. They also heard a Wilson's Snipe.

Karl Stoltzfus, who was on the water the previous day, reports that there still are small flocks of Red-necked Phalaropes in the Bay. He also saw a flock of about 20 Surfbirds on Gull Island and 6 Wandering Tattlers.

Next week is our last scheduled monitoring session. While there may still be some Greater Yellowlegs and Semipalmated Plovers in the area, these will most likely be breeding here.

Report #9

Birders:

The Kachemak Bay Shorebird Monitoring Project had its last session on May 25th from 2:45 till 4:45 pm. Surprisingly, these intrepid travelers of the Western Hemisphere are still winging their way north in an inspiring effort to procreate. Or are these stragglers actually nonbreeders? Comments invited.

The temperature at the Homer airport was 50° at 2:00 with winds WSW at 13 mph. At 5:00 the temperature was still 50° with winds WSW at 14 mph. Skies were bright and sunny.

Mud Bay observers saw only 4 Semipalmated Plovers. Mariner Park Lagoon observers didn't see any shorebirds, but enjoyed the afternoon watching a pair of Sandhill Cranes trade shifts at their nest. If it weren't for our commitment to spend two hours here, we might not have stayed around to witness this. The mid-Spit observers saw 8 Semipalmated Plovers, 1 Wandering Tattler, 3 Ruddy Turnstones, 11 sandpipers that were either Least or Western, and 3 Dunlin. Observers at the outer-Spit saw 1 Semipalmated Plovers and 5 Wandering Tattler's right in the boat harbor. Beluga Slough observers saw 2 Greater Yellowlegs and a flock of 13 Whimbrel.

Karl Stoltzfus was out on the Bay and has this interesting report. "I was able to take a look at Gull Island and Cohen Island and 60' rock between 2 pm and 4 pm and saw the following: 1 Black Oystercatcher at 60' Rock, 3 Black Oystercatchers on Cohen Island, 1 Black Turnstone Neptune Bay and 14 Surfbirds on Gull Island. I have checked my records over the last 10 years and the latest date that I have recorded (prior to this year) seeing Surfbirds or Black Turnstone was the 20th of May." Karl's 10 year record could help bridge part of the gap between this project and George West's records from 1986 to 1994.

This was our second year for monitoring the Kachemak Bay spring shorebird migration. Our enthusiastic team furthered its understanding of this spectacular event. I personally find that following a protocol provides more insight to my observations. Hopefully our efforts will further the knowledge of West Coast shorebird migrations and their population status. I highly recommend similar efforts next year in other Cook Inlet locations, particularly Kenai and Anchorage. All it takes is for someone to set a schedule for observation times and collect the data. If someone leads, I guarantee there will be followers. Birders enthusiastically support citizen science efforts and shorebirds have special appeal.

Appendix F

May 5, 2010

Shorebird 'scientists' look for answers

• Second year of bird study accumulates more information on timing for migrants' arrivals

By Naomi Klouda
Homer Tribune

Homer Tribune File Photo - Shorebirds and enthusiasts gather along the Homer Spit during last year's Kachemak Bay Shorebird Festival. This is the 18th year of the festival, which started as a way to prevent development in the sensitive shorebird ecological areas.

In the brief window of time when thousands of the world's shorebirds flock to Kachemak Bay, a team of birders become citizen scientists and use designated monitoring spots to take counts. The 20 or so bird-watchers are trained to take faithful roll call of the birds at the 15-foot tide level in George Matz's Kachemak Bay Shorebird Monitoring Program. They do this two hours a day, every five days on the same tidal level.

"We begin monitoring at 15-foot tides because science likes consistency," Matz said. "During high tides, (21-16 feet) the birds often disappear to an island or we aren't sure where they go. Low tide isn't suitable either, because it stretches a mile or more out, making shorebirds hardly visible."

The Semi-palmated Plover, Golden Plovers, Black-bellied Plovers, Western Sandpiper, the Dunlin and the Dowitcher — just some of the 30 shorebird species that routinely come here — feed on a tiny clam called macoma, as well as other invertabrates.

"This is the optimal time in the tide for them to get at the tiny clams," explained U.S. Fish and Wildlife Service Park Ranger Carla Stanley. "It's after high tide, when mud is the wettest and easiest to get at the clams. This should be when most of the birds are available for counting."

Matz's shorebird monitoring study, now in its second year, seeks to gather data that can help understand why shorebird numbers are so much lower today than in the past. His data will compare to an earlier Bay study of the birds by Biologist George West in the late '70s and early '80s. Now retired, West lives in Arizona and turned over his data to Matz.

“According to the first year of data, there has been a significant drop in shorebird population numbers (arriving in the Bay) now,” Matz explained. “The difference appears to be more than just sampling error. This gives us motivation to continue the effort.”
Matz has added aerial surveys once every three days for 15 days during the peak of the migration to obtain further data. The Kachemak Bay Birders received a grant from the Forest Service to hire a local pilot to fly Matz and other bird-viewing volunteers on surveys stretching from the Spit to Seldovia. Saturday’s excursion over the Fox River Flats valley and coves in between yielded only a couple of small flocks of shorebirds. However, Sunday morning turned up several hundred at Mud Bay.
Do the shorebirds go to the upper part of the Bay before coming to the Spit?
“In this case, they didn’t. We would have seen them if they first stopped in the upper Bay,” Matz said. “One thing we learned last year is that shorebirds arrive in stages.”
Matz said the Yellowlegs arrive first, then the four species of Plovers, sandpipers and godwits. But seldom does the same event happen exactly the same way twice in nature, he added.

Festival’s beginning

When an annual shorebird festival was conceived 18 years ago, it was in response to a potential ecological disaster: the City of Homer had intentions to fill in the Mariner Lagoon to make an RV Park. The city, which still owns the land and the estuary, operates a small RV park today, but the old plan was to gravel and dirt in wetlands to just below the Lighthouse Village.
In furious and fast response, Scientists Sue Matthews, Jack Lentfer and George West produced a paper about the ecological value of the area to hundreds of thousands of shorebirds.
“A lot of people didn’t realize we had this number of birds coming through town every year,” recalled the USFWS’s Poppy Benson. “Then, as the public read their report, enthusiasm grew for starting a festival to help prevent the development and to celebrate the migration.”
Benson put forth the festival as a way to improve the “shoulder” tourism season of early spring. Then Chamber of Commerce Chairman Johnny Bushell “jumped right on it and ran with it.” The main motivation, however, was to gain attention for the shorebird’s sanctuary.
Had the RV park plan been carried out, the Bay would have lost a major refuge for flight-weary shorebirds en route to points north. This area, as well as Mud Bay and the Fox River Flats, have since been recognized by the Western Hemisphere Shorebird Reserve Network as an area of international importance to migrating shorebirds.
“Below (Starvin Marvin’s) Pizza place is one of the best shorebird viewing stations — a lot of shorebirds can be seen in that whole area,” said Benson, who was the festival’s first keynote speaker and remains involved nearly two decades later.
The dates chosen for the festival were based on George West’s data that indicated the bulk of the migration arrived around May 8. The four days of the weekend closest to that date were then selected for the festival.
Willy Dunne, the USFWS Visitor Center Manager, was instrumental in organizing the event, along with Dale Chorman, Buzz Scher, Dave Erickson and Rich Kleinleder.
From a Mother’s Day breakfast at the Elks Lodge where Benson delivered the first keynote address, the event grew in scope and attracted more and more visitors.
“We’ve come a long way from that first festival when we can have a Peter Harrison,” Benson said, referring to world-renowned pelagic shorebird expert and author Harrison, set to give the opening address 4-6 p.m. Friday at the Pratt Museum.

How to monitor

The monitoring project that utilizes "citizen scientists" is looking for information on the birds' status by identifying all shorebird species using Kachemak Bay during spring migration. It defines the seasonal period and annual timing of when shorebirds migrate through the area in the spring, and estimating the abundance and distribution of the species in the Kachemak Bay area.

Matz points out that this approach to using ordinary residents — rather than trained biologists — is long-established in events such as the annual Christmas bird count, which has continued for more than 100 years.

Useful information from those counts helps scientists understand bird population changes and response to other factors such as climate change.

"People like to watch birds," Matz said. "If they can contribute to a study, it draws more interest."

If an agency were to fund that many individuals conducting a survey at regular intervals, it would prove costly and wouldn't receive the same kind of coverage.

That isn't to say it's less scientific. The shorebird survey follows scientific protocol modified from the Lower 48 to fit Alaska conditions, Matz said. He worked with Rick Lanctot Ph.D, the USF&WS shorebird specialist for the Alaska Region and National Shorebird Coordinator Brad Andres Ph.D, who lent scientific support and advice.

Future plans are to coordinate this effort with other agency work, such as Kachemak Bay Research Reserve studies of the Kachemak Bay shoreline and Fish and Game's study of invertebrates in inter-tidal zones.

"Their work complements our work," Matz said. "In terms of the bigger picture, it is looking at how healthy the Bay is, and if things are changing, how are they changing?"

Comparing Kachemak Bay's relatively pristine status to other marine habitats could mean shorebird visitors here are demonstrating stresses from other parts of the globe.

Biologist Stanley says she has noticed that, over time, the seawall below Ocean Drive Loop has changed the tidal energy and how sand moves.

"I personally have noticed the difference in Mariner Park Lagoon. More sand is going into the lagoon. You still get a nice variety of birds, but not huge numbers," Stanley said. "Kachemak Bay is one of richest estuaries in the world. They really like the mud there, and it doesn't have huge wave action. That allows little worms to survive. On high-energy beaches, you don't get that."

The food is crucial for allowing the shorebirds to "bulk up." By May 15, most will be gone. Since these species arrive from warmer places in the world, a realization strikes Matz as providing an interesting juxtaposition in global navigation.

"A light drizzle — almost wet snow — fell toward the end of the session," Matz reported of Friday's beach monitoring. "And shorebirds left the tropics for this. While true Alaskans relish winter, it always amazes me that the coldest part of a shorebird's life is when it comes here in the summer to breed on the tundra — which seldom gets as warm in summer as a cold winter day in the tropics."

To read the complete 2009 Kachemak Bay Shorebird Monitoring Project Report, go to www.kachemakbaybirders.org

Appendix G

http://kachemakbaybirders.org/

City of Homer Planning Department
491 E. Pioneer Avenue
Homer, Alaska 99603

June 21, 2010

Dear Planning Department and Commission:

The Kachemak Bay Birders, a loosely organized group of birders who reside in the Homer area, would like to submit the following comments and information regarding the April 30, 2010 version of the Homer Spit Comprehensive Plan.

General Comments

Key general concerns of the Kachemak Bay Birders, relative to the Homer Spit Comprehensive Plan, are:

- Recognizing that the ecological values of the Homer Spit provides important bird habitat, particularly for shorebirds. While the Plan does mention bird and marine mammal habitat, we think this could be underscored by adding to the appendix a bird checklist (see http://www.birdinghomeralaska.org/).
- Recognizing that the Spit is nationally recognized for its bird life and that this attracts numerous birders to the Homer area at all seasons of the year - not just during the Kachemak Bay Shorebird Festival. Although there have not been any studies on the economic impact of birding to the Homer area, studies in other areas show that birding can create significant economic opportunity. Birders tend to make more use of expensive activities, like charters, than most tourists.
- Recognizing and mentioning that both the Homer Spit and Kachemak Bay have a number of important conservation designations, such as critical habitat areas. The Plan makes no mention of this other than stating city zoning codes. Protecting habitat could place conditions on some types of Spit based development projects. For instance, if a project were to impact the shallow areas just to the west of the Spit, it might have to contend with the Endangered Species Act. This area provides winter habitat for many sea ducks, including the Steller's Eider which is on the Threatened and Endangered species list.

We also want to highlight two of our recent activities; the Kachemak Bay Shorebird Monitoring Project and our efforts to update the description and assessment of the Kachemak Bay area as a Western Hemisphere Shorebird Reserve Network site. Both efforts are of importance to the Homer Spit Comprehensive Plan.

Kachemak Bay Shorebird Monitoring Project

When the Kachemak Bay Birders first formed in 2008, it decided that one of its objectives would be to learn more about the status of the local shorebird population during spring migration. Although the Kachemak Bay Shorebird Festival has documented shorebird migrations for the past 17 years, this weekend event covers only a portion of the migratory period. Accordingly, it was decided to use volunteers to monitor the entire spring migration (mid April through late May) every five days at seven sites on or near the Homer Spit using a modified version of the International Shorebird Survey protocol. The data would then be compared to the seven years of data captured by George West from 1986 and 1989-1994 in order to provide some indication of shorebird population trends.

So far we have completed two spring surveys; the report for the 2009 is attached and can be obtained online at http://kachemakbaybirders.org/. This website also has the protocol for the 2010 survey, which was recently completed.

Relative to the Homer Spit Comprehensive Plan, our observations are:

- All undeveloped parts of the Homer Spit are being used by shorebirds.
- While shorebird foraging in the intertidal areas is obvious, what is less obvious is their need for supratidal habitat, particularly for roosting.
- Shorebird use the Homer Spit occurs most months of the year, not just during the Shorebird Festival.
- Alaska's birding community, via social networking, is keenly aware of the status of Homer Spit bird populations and habitat.

We ask that consideration of any undeveloped areas of the Homer Spit take the points made above into account.

Western Hemisphere Shorebird Reserve Network

Last fall, the Kachemak Bay Birders was asked by the Manomet Center for Conservation Sciences, which manages the Western Hemisphere Shorebird Reserve Network (WHSRN), to assist in updating its assessment of the two WHSRN sites in Kachemak Bay that are of international significance to shorebirds; MudBay/Mariner Park Lagoon and Fox River Flats. While a WHSRN designation creates no legal mandate, it does highlight for Western Hemisphere conservation agencies and NGO's, areas that are especially important relative to shorebird management. Also, a WHSRN designation can attract tourists and, accordingly, should be mentioned in the Plan.

We enlisted the assistance of the City of Homer Planning Department, the Kachemak Bay Research Reserve, and the Department of Fish and Game in taking on this task. The updated site profile for Kachemak Bay/Homer Spit can be read at http://www.whsrn.org/site-profile/kachemak-bay.

Part of this effort was to complete a comprehensive and detailed site assessment following a scientifically accepted protocol. This assessment provides a lot of information that could bolster the technical quality of the Homer Spit Comprehensive Plan. A copy is attached.

Specific Concerns

We are especially concerned about the Plan with respect to Mariner Park. The Plan states the following (in italics):
Mariner Memorial Park Improvements:
As one of Homer's most popular recreation areas, Mariner Park attracts campers, beach walkers, kite-flyers, trail users, birders, people with dogs, and others who come to enjoy the views and open-air recreation opportunities. Homer's growing population and tourist visitation are placing greater demand on Seafarer's Memorial Park, increasing the need for recreation and safety enhancements.

- *The following have been identified as specific areas for improvement in the next six years:*
- *Construct a plumbed restroom facility*
- *Develop a bike trail from "Lighthouse Village" to Seafarer's Memorial Park*
- *Expand the park and move the vehicle entrance to the north*
- *Construction of a tunnel under the Spit Road to provide safe access to the Homer Spit Trail*
- *Fee camping sites*
- *Picnic/barbeque area*

At the base of the Spit, adjacent to the Seafarer's Memorial Park, is a tidal area already impacted by dike construction. Historically, this area was permitted for fill, but never was completely implemented. This area should be considered for expansion of the city campground.

First of all, the Plan seems to confuse Seafarer's Memorial Park and Mariner Park.

Aside from that, as previously stated, our observations are that the Mariner Park supratidal and intertidal areas provide important bird habitat. Any development other than within the existing footprint of already disturbed area would contradict other parts of the plan, namely:
The public clearly indicated its recognition of the value of the tidal habitat, beaches, and views available on the Homer Spit. These areas are not just important as habitat for a myriad of shorebirds, waterfowl, fish, mammals, and plant life, but are important to the identity of the community of Homer. Protection of these areas is endemic to any development or use that is allowed on the Homer Spit.

The consultants suggestion to build a tunnel under the Spit Road, which could be routinely subject to high tides and storm surges, does not appear to be a well thought out idea - and would

probably be prohibitively expensive. Furthermore, construction could impact not only Mariner Park Lagoon, but Mud Bay.

Also, there is no way that another Spit bike trail, presumably on the west side of the Spit, or having entrance to Mariner Park from the north starting at the Lighthouse Village could occur without significant fill and disturbance to Mariner Park Lagoon. Apparently, as with the tunnel suggestion, the consultant is not aware that the east side, where there already is perfectly adequate bike trail, is more favorably because it is not as subject to strong winds and high waves.

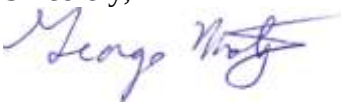
What may be the most questionable statement in this section of the Plan is the consultant alluding to the idea that building a road and bike trail in the intertidal area of Mariner Park Lagoon is already "permitted for fill." Besides being unprofessional by not stating exactly what permit is being referred to or whether it is even valid anymore, the Plan provides a false impression of viability. For one, it should be obvious that filling in critical habitat may require more than one permit. This area is part of the State of Alaska Kachemak Bay Critical Habitat Area. Also, given the environmental importance of this intertidal area, the NEPA process may apply and require more thorough analysis than most fill permits. More importantly, the suggestion ignores a previous commitment by the City of Homer to maintain Mariner Park Lagoon as a WHSRN site. Attached is the 1994 application from the City of Homer, which is after suggestions about filling in Mariner Park Lagoon and was, to some degree, stimulated by these suggestions. The cover letter states: "We believe that the designation of city owned lands important to migrating birds as part of the WHSRN will enhance the festival and bring increased attention to the critical nature of our wetlands."

Given that this section of the Plan is fraught with error and speculation, we recommend deleting it entirely and replacing it with improvements that stay within the existing footprint. The present random parking arrangement wastes a lot of space that could be better utilized by camping and other activities if vehicles weren't able to drive everywhere. We suggest designated parking spaces and covering a much of the existing gravel with grass. This would be more conducive to non-vehicle use.

We understand that city ordinance does not allow the use of motorized vehicles in Mariner Park Lagoon. It isn't clear whether this applies to just the intertidal areas or other beach areas as well. Although there are some signs to let visitors know that there are restrictions, more signs and a map on the bulletin board, which clearly shows areas off-limits to motorized vehicles, would be helpful.

We thank you for this opportunity and look forward to further drafts of the Plan.

Sincerely,



George Matz

cc USKH