

Kachemak Bay Shorebird Monitoring Project: 2012 Report



By

George Matz
PO Box 15182
Homer, Alaska
geomatz@alaska.net

With much support from Kachemak Bay Birders
<http://kachemakbaybirders.org>

October, 2012

Table of Contents

I. Executive Summary.....	3
II. Introduction.....	4
A. Overview of Kachemak Bay and Homer Spit Environment.....	4
B. Review of Kachemak Bay Shorebird Monitoring Project.....	6
III. 2011 Homer Spit Monitoring Protocol.....	10
A. ISS Modified Protocol.....	10
B. Monitoring Sites.....	10
C. Monitoring Dates and Times.....	11
D. Volunteer Schedule s and Monitoring Dates.....	12
E. Recording Observations.....	13
IV. 2012 Monitoring Results.....	14
A. Total Counts.....	14
B. Data Analysis.....	15
C. Supplemental Monitoring.....	17
D. Calibration Monitoring.....	19
V. Trends.....	20
A. Comparing 2012 to Previous Years.....	20
B. Comparing Recent Data to West’s Data.....	21
VI. Other Activities.....	23
A. Outreach.....	23
B. Presentations.....	23
C. Publications.....	23
VII. Future Efforts.....	24
VIII. Acknowledgements.....	24
IX. Literature Cited.....	24
X. Appendices.....	25
Appendix A: Birds of Kachemak Bay, Alaska: Shorebird Checklist.....	26
Appendix B: Kachemak Bay Shorebird Project Monitoring Report Form.....	27
Appendix C: Observation Data for Each Site.....	28
Appendix D: Supplemental Monitoring Data for 2012.....	35
Appendix E: Calibration Monitoring.....	37
Appendix F: Session Reports Sent to Birding Lists.....	38

List of Tables

Table 1. Homer Spit Shorebird Monitoring Times and Tides.....	11
Table 2. Dates and volunteers for the 2012 shorebird monitoring project.....	12
Table 3. Number of shorebirds seen by species for all 2012 survey dates, sorted by abundance for All Sites.....	14
Table 4. Shorebirds counted by species and date for all six sites during 2012 monitoring.....	15
Table 5. Supplemental Count for 2012 on Four Homer Spit Sites.....	17

Table 6. Supplemental and Protocol Monitoring Data for four Homer Spit Sites. (Scheduled monitoring dates are in blue).....18

Table 7. Comparing the West Monitoring Approach to Kachemak Bay Birders Protocol.....19

Table 8. Annual Shorebird Count by Species Sorted by Average Abundance.....20

Table 9. Comparison of six days of West shorebird monitoring data to six comparable days of Kachemak Bay Birders data for similar survey sites.....22

List of Figures

Figure 1. Kachemak Bay Land Ownership.....4

Figure 2. Illustration of shorebird monitoring sites for 012.....11

Figure 3. Number of shorebirds counted during 2012 by date and site.....15

Figure 4. Kachemak Bay Arrival and Departure Dates for Plovers and Yellowlegs in 2012...16

Figure 5. Kachemak Bay Arrival and Departure Dates for Sandpipers and Dowitchers in 2012.....16

Figure 6. Total shorebird counts by year for the Home.....22

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I. Executive Summary

In May 2012, the Kachemak Bay Birders (based in Homer, Alaska) completed its fourth consecutive shorebird monitoring project. The main purpose of this citizen science project is to attain a better understanding of the status of shorebird populations in the Kachemak Bay area. By comparing our current data to monitoring data collected by former Homer resident George West, who conducted counts of Homer Spit shorebird species and numbers during the 1980s and 1990s, we will have a better understanding of population trends. Secondary purposes for this project are; 1) to contribute information that might be useful to others assessing shorebird populations across the entire Pacific Flyway, and 2) to use the monitoring data to help protect Kachemak Bay/Homer Spit shorebird habitat.

Between April 14, 2012 and May 24, 2012 a total of 28 volunteers monitored four sites on the Homer Spit, one site at nearby Beluga Slough, and by boat the Islands and Islets on the south side of the Bay. The protocol we followed is a modification of the International Shorebird Survey (ISS) protocol. We monitored for two hours once every five days when the outgoing tide reached 15.0 feet (or at high tide if less). Weather conditions this spring were ideal despite a severe winter; mild temperatures with no strong storms. In nine monitoring sessions we observed 27 species of shorebirds and counted a total of approximately 23,972 individual shorebirds. The top 10 species includes Western Sandpiper (16,375), Surf-bird (2,919), Red-necked Phalarope (1,501 all but one seen by boat), Dunlin (1,205), a lumping of unidentified *Calidris* (844), Black-bellied Plover (354), Dowitcher (153 of which almost all were Short-billed), Semipalmated Plover (142), Least Sandpiper (103), and Pacific Golden Plover (95). There were no significant disturbances from humans, dogs or predators (e.g. raptors).

The number of shorebird species we counted this year was higher than in 2009 (24), 2010 (23), or 2011 (25). Also, the total number of individual shorebirds counted was significantly higher than in 2009 (7,406), 2010 (9,845), or 2011 (16,007). A review of our daily spot check data taken at prime sites during the peak of migration revealed a significant reason; in 2012 the peak of three large pulses of migrating shorebirds occurred on the same day as our monitoring date. In previous years, the relatively short pulse never peaked on a scheduled monitoring date thereby not including in the count a significant percentage of shorebirds that stopped at the Homer Spit.

As in previous years, we compared this year's data to George West's shorebird monitoring data from two decades ago. This comparison requires some adjustment since West monitored daily and our protocol calls for monitoring once every five days. West's seven year average for total shorebird count was about three times greater than our average from 2009-2011. However, our 2012 total count was even higher than some of the low count West years.

We plan to continue monitoring shorebirds next year using the same approach. The results should shed more light on our 2012 results. Was this high count mostly due to an improbable coincidence between three large pulses and monitoring dates, or has there been an increase the past couple of years in the number of shorebirds stopping at the Homer Spit during spring migration? We also extend our effort by monitoring the nearby Anchor Point beach.

I. Introduction

A. Overview of Kachemak Bay and Homer Spit Environment

The effort for this year’s Kachemak Bay Shorebird Monitoring Project was limited to the Homer Spit and adjacent waters and intertidal areas. But an overview that includes Kachemak Bay and how the Spit is an integral part of the Bay is needed for a more comprehensive understanding of the area. The recent Management Plan 2012-2017 for the Kachemak Bay National Estuarine Research Reserve provides a good overview of this bountiful environment (KBNERR 2012). Excerpts below emphasize portions that pertain to shorebirds. Note that KBNERR is a conservation designation but does not include actual ownership of land or water.

The Bay is 63 km (39 mi.) long and 39 km (24 mi.) wide at its entrance between Anchor Point and Point Pogibshi, with more than 515 km (320 mi.) of shoreline. The Homer Spit projects 7.2 km (4.5 mi.) out into the Bay, dividing it into an ‘inner’ and ‘outer’ Bay. The inner Bay is east of Homer Spit to the head of Kachemak Bay, and the outer Bay is west of Homer Spit to the mouth of Kachemak Bay. The Bay is bordered on the north by the rolling hills and bluffs of the Kenai lowlands, and on the south by the Kenai Mountains, with the watershed encompassing more than 2,658 km² (1,026 mi.²).

Kachemak Bay has two State Critical Habitat Areas (Kachemak Bay and Fox River Flats), and two State Parks, (Kachemak Bay State Park and Kachemak Bay State Wilderness Park). The State CHAs comprise 923 km² (233,650 ac.) within the Reserve boundary [Kachemak Bay = 926 km² (226,400 ac.); Fox River Flats = 27 km² (7,200 ac.)]. Areas of Kachemak Bay State Park and Kachemak Bay State Wilderness Park within Kachemak Bay watershed make up the remaining 554 km² (138,350 ac.).

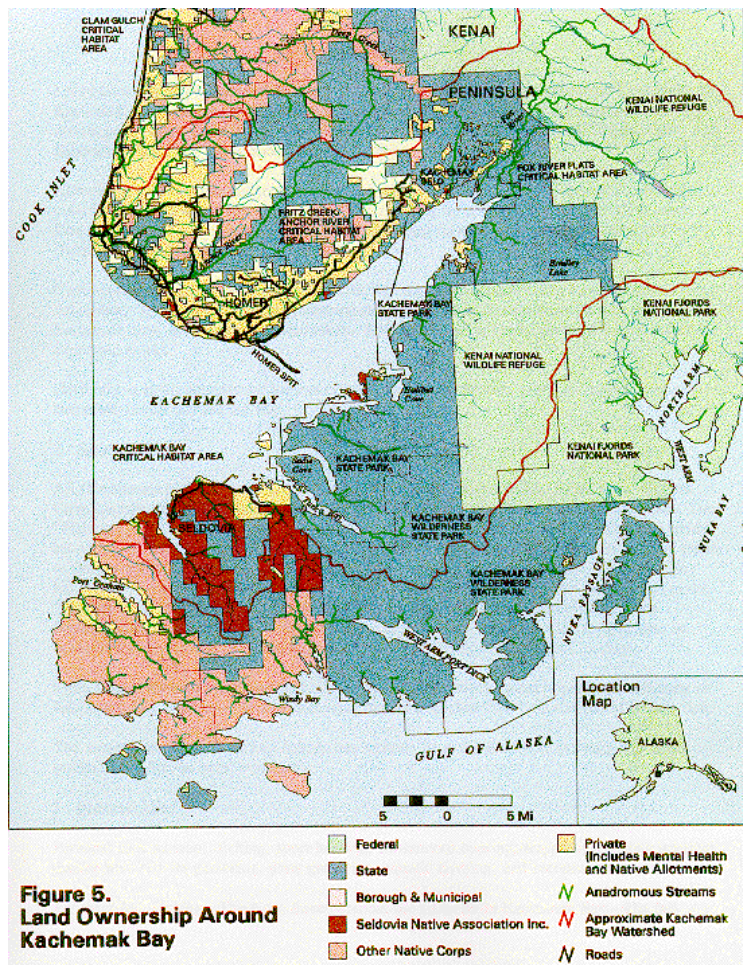


Figure 2. Kachemak Bay Land Ownership

The climate in the Kachemak Bay watershed is maritime and characterized by a relatively moderate seasonal range of temperatures, high humidity, and ample rain and snow. The Bay and the Pacific Ocean minimize large extremes in the air temperature, resulting in mild winters and cool summers. Annually, the mean Homer temperatures vary from the high of 15°C (60°F) in summer to the low of 5°C (30°F) in winter. Surface water temperatures in the Bay range between a high of 12.8°C (55°F) in the summer, and a low of -2°C (28°F) in the winter. Most of the 0.7 m (25 in.) of annual precipitation occurs in late summer and fall. The majority of snow falls from November to March.

The head of Kachemak Bay is characterized by extensive tidal flats, braided drainages, and marshlands. The northern shore consists of cliffs composed mostly of sand and clay leading down to shallow mud flats. The southern shoreline consists of hard rock cliffs and deep embayments. Many islands are also found along the southern shore. Several major glacial streams discharge into inner Kachemak Bay: Fox, Martin, Wosnesenski, and Bradley rivers; and Sheep, Battle, Halibut, Portlock and Grewingk Creeks. In addition, several minor nonglacial streams discharge into Kachemak Bay along the southern shore. The northern coast is drier, and only eight small nonglacial streams of limited drainage enter the inner Bay from that side.

Kachemak Bay and the adjacent Cook Inlet are known for their amazing tidal ranges. Kachemak Bay has an 8.7 m (28.5 ft.) tidal range that results from the complex geomorphology of the Gulf of Alaska and adjacent Cook Inlet. Tides in Kachemak Bay and Lower Cook Inlet are semi-diurnal with a significant inequality between successive low waters. This means there are two high tides within a lunar (24 hour 50 minute) day, one of which will generally exceed the other by several feet. The mean diurnal range in Kachemak Bay is 4.7 m (15.4 ft.) at Seldovia. Highest tides exceed 6.9 m (22.5 ft.) and the lowest tides are about -1.8 m (-6.0 ft.).

The Homer Spit is a striking geologic feature of Kachemak Bay, and it also has a dramatic impact on the Bay's circulation. The Spit bisects the Bay into inner and outer zones. These zones differ in freshwater influence and in wave action. The outer Bay is a mixing basin for the cold, saline, nutrient-rich Alaska Coastal Current (ACC) which enters from the southeast via Cook Inlet, and the fresh glacial water that drains from the Bay's tributaries. It is an environment typified by high wave energy that receives the full force of swells from across the Inlet. The inner Bay has a lower salinity because the influence of freshwater tributaries is stronger in the semi-contained water found behind the Homer Spit. The inner Bay also remains calmer because the Homer Spit blocks the swells from the Inlet. Water masses from the inner and outer zones of the Bay meet at the end of the Spit during the daily tidal cycle.

From 1500-m (5,000 ft.) high alpine peaks to 176-m (576 ft.) deep sea trenches, Kachemak Bay is home to a diversity of flora and fauna. In Kachemak Bay and its watershed, the following species have been documented: 11 species of marine mammals, 36 species of terrestrial mammals, 244 species of birds, 1 species of amphibian, 120 species of fish, 404 species of marine invertebrates, 125 species of

marine algae, and 663 species of vascular plants. There are undoubtedly additional species that have yet to be documented, especially fish, invertebrates, marine algae and plants. Kachemak Bay's varied coastline, numerous freshwater sources, and diverse geomorphology create a microcosm of Southcentral Alaskan habitat types.

Rocky habitats support the most diverse aquatic communities. Invertebrates are most abundant and diverse where currents are high, and least abundant and diverse in slow currents. Jakolof Bay supports the most robust subtidal macroinvertebrate communities known in Southcentral Alaska. Most of the macroinvertebrates are sedentary filter feeders, such as clams. Grazers, such as chitons and sea urchins, are abundant. Abundant predatory macroinvertebrates are primarily sea stars, snails, and hermit crabs.

Invertebrate abundance in sand and mud substrates is strongly influenced by seasonal conditions, and dominance patterns are influenced by tidal exposure. Most invertebrates in sand and mud substrates are deposit or suspension feeders. Many species are more abundant at lower tidal levels; however, species composition does not appear to be affected by tide stage. Mud flats have greater species richness, biomass, and diversity of perennial species than sand beaches and, consequently, attract the highest numbers of shorebirds and ducks.

Kachemak Bay has several populations of clams, including Pacific littlenecks, butter clams, surf clams, various cockles, razor clams, and several *Macoma* (Baltic, stained, chalky, oblique, and bent-nosed). Hard-shelled clams can be found in the lower intertidal region on protected gravel-sand-mud beaches. Soft-shelled clams are usually found in areas of mixed sand and mud, or mud and gravel.

Two hundred forty-four species of birds have been identified on and around Kachemak Bay. Kachemak Bay is the most important marine bird habitat in Lower Cook Inlet, with no comparable areas in Upper Cook Inlet. During winter months over 90% of the marine birds in Lower Cook Inlet are found in Kachemak Bay. Kachemak Bay is also important for avian feeding, nesting, rearing, and migratory staging throughout the year.

In 1996, Kachemak Bay was dedicated as an international site of the Western Hemisphere Shorebird Reserve Network. An international site designation indicates that the site hosts greater than 100,000 shorebirds or 10% of a flyway population.

B. History of Kachemak Bay Shorebird Monitoring Project

For the past four years Kachemak Bay Birders (a network of birders who live in the Homer, Alaska area) have been monitoring the spring migration of shorebirds that stopover at Kachemak Bay every year from late April to mid May. This effort has focused on the Homer Spit portion of Kachemak Bay because of its easy accessibility and excellent habitat for shorebirds. The purpose of this citizen science monitoring project is to provide a better understanding of the status of shorebird populations in the area. By comparing our current data to monitoring data collected by former Homer resident George West, who conducted counts of Homer Spit shorebird species and numbers during the 1980s and 1990s, we should arrive at a better

understanding of current population trends. These trends will be of local interest and could contribute as well to other monitoring efforts at shorebird stopover and wintering areas with similar objectives.

The first year of this project began during the 2008-2009 winter, soon after Kachemak Bay Birders was formed. A committee was set up to draft a strategic plan and seek advice on the selection of proper protocol. We were advised to use the International Shorebird Survey (ISS) protocol but found that some modification was needed, primarily because it called for monitoring once every 10 days. While this may be suitable in areas where shorebirds overwinter, it wasn't suitable for monitoring the Kachemak Bay spring shorebird migration where some species stay no more than a couple of days at most.

2009 - The project got underway in the spring of 2009. A team of 16 volunteers were assigned sites on or near the Homer Spit. The teams recorded shorebird observations once every five days, starting April 16 and ending May 28. Monitoring times were based on having consistent tide levels. It was decided that the best time for monitoring was when the outgoing tide was approaching 15.0 feet. Also, since this was a team effort rather than individual effort, monitoring was done simultaneously at all but one site which monitored nearby waters by boat. A caucus after each session reviewed observations. A total of 24 species of shorebirds and approximately 7,406 individual birds were observed. Data was entered into eBird-ISS. A report entitled *Kachemak Bay Shorebird Monitoring Project: Report for 2009 Spring Survey* (Matz 2009) gives further explanation on the protocol as well as a presentation and analysis of the data. The report also compares 2009 data to obtained by George West about two decades earlier. The report includes a Kachemak Bay species list, the forms used by observers, data by session for each site, and maps as well as aerial photos of each monitoring site. This report is only available in electronic form and can be downloaded from <http://kachemakbaybirders.org/>.

2010 – The second year of monitoring followed a similar protocol. We experienced a slow start with spring migration, perhaps because of abnormally cold weather for the whole region. However, disappointing results were saved by a late surge of Western Sandpipers and Dunlin between May 10 and 15, creating a bimodal distribution in counts for these species. This surge resulted in more birds being observed in 2010 than in 2009. In 2010 we recorded 9,845 shorebirds during the 2010 project but one less species (23). The total number of birds observed for 2009 and 2010 was significantly less than surveys done in the late 1980s and early 1990s.

A concern we had was whether migrating shorebirds are passing through the Homer Spit area between scheduled monitoring dates, thus not being included in our data. To test this possibility we did daily spot checks at Mud Bay for two weeks during the expected peak of the migration. Considering that scheduled monitoring for Mud Bay on May 5 reported 500 Western Sandpipers and spot checking the day before and after reported 1,100 and 700 Western Sandpipers respectively, it did appear that some flocks of shorebirds may be arriving and leaving between scheduled monitoring dates.

In addition to the spot checking, we sought out other shorebird observations at the time, such as list-serve birding reports. The supplemental data resulted in a total of 20 shorebird species being observed on the Homer Spit and approximately 8,600 individual shorebirds. While these

supplemental data cannot be directly compared to the scheduled monitoring data, it did give us a more complete picture of the Homer Spit shorebird migration. Our scheduled monitoring dates missed some flocks of migrating shorebirds, but not by an order of magnitude or more.

We were also concerned about the disparity between our 2009 data set and West's data set. 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.

To gain insight into question #2, we obtained funding from a U.S. Forest Service Copper River International Migratory Bird Initiative (CRIMBI) grant for an aerial shorebird survey of Kachemak Bay. Concurrent with our ground-based monitoring, four volunteers flew the 320 mile long shoreline of the Bay five times at low elevation, once every three days starting May 1. 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 1 observed only a couple of small flocks (tens) of shorebirds at the Homer Spit and other parts of Kachemak Bay. The next morning an email alert reported about a thousand newly arrived sandpipers near the Homer Spit. If these birds had first visited the upper part of the Bay we would have seen them the previous afternoon. While just one observation, it did indicate that most shorebirds seen at the Homer Spit are not likely 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 using 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 indicated that migratory shorebird concentrations were dispersed throughout Kachemak Bay where there were suitable beaches. While the Homer Spit is certainly an attractive area for shorebirds, it is not the only place in the Kachemak Bay area where migrating shorebirds concentrate. However, with the exception of Seldovia Bay where we saw nearly two thousand shorebirds, the flocks were not very large.

One of our objectives in 2010 was to attempt a rough estimate of the number of shorebirds that visit Kachemak Bay and Homer Spit during the spring shorebird migration. Observers estimated that during the aerial surveys there were more shorebirds in other parts of the Bay (3,440) than at the Homer Spit (1,403), but not significantly larger concentrations. Based on our limited information, it appears that about 10,000 shorebirds visited Homer Spit in the spring of 2010 and at least that many visited other parts of Kachemak Bay. Though just a rough estimate at best, this is substantially less than that mentioned in reports from a decades ago which said that 100,000 to 1,000,000 shorebirds stopover in Kachemak Bay during spring migration.

Our online report for 2010, *Kachemak Bay Shorebird Monitoring Project:2010 Ground and Aerial Survey Report* (Matz 2010), provides an overview of the environmental features of Kachemak Bay, designated conservation areas within the Bay, a brief review of the earlier shorebird studies that were conducted in Kachemak Bay, protocols for both ground-based and

aerial monitoring, observation details, trends with comparison to West's data, and public presentations of the data.

2011 - The 2011 project followed the ground-based monitoring protocol used the previous two years. Due to a lack of funding, this year there was no aerial survey of the greater Kachemak Bay.

In 2011, between April 14 and May 24, a total of 18 volunteers participated in monitoring four sites on Homer Spit, plus nearby Beluga Slough, and by boat the Islands and Islets on the south side of the Bay. The number of shorebird species observed in 2011 (25) was higher than 2009 (24) or 2010 (23). The total number of individual shorebirds counted in 2011 (16,007) was also higher than in 2009 (7,406) or 2010 (9,845). The biggest increase was Western Sandpipers and Dunlin, as well as Red-necked Phalarope, Surfbirds, and Rock Sandpipers (which overwinter at Kachemak Bay). Despite the increase, the 2011 count was still substantially less than that observed by West. Adjusting West's daily counts to match our five day counts, he saw an average of 18,436 individual shorebirds per year during his seven years of survey. Including only the Homer Spit sites and matching dates, we counted 8,858 individual shorebirds in 2011. The adjusted count for 2009 was 4,994 individual birds and in 2010 it was 7,314.

Supplemental monitoring continued in 2011. From daily spot checks on the Homer Spit during the two week peak of migration we were able to establish that we did miss some flocks of sandpipers, but were able to get some estimate as to the amount of leakage. Looking at all the data, the amount of leakage is probably no more than 2-3 times our monitoring count. The report for this year (Matz 2011) provides detailed spreadsheets of the count for each site. A review of our three years of monitoring appeared in a peer reviewed journal (Matz et al 2012).

III. 2012 Homer Spit Monitoring Protocol

A. ISS Modified Protocol

As in previous years, our shorebird monitoring protocol for 2012 used a modified version of the International Shorebird Survey (ISS) protocol (www.shorebirdworld.org/). Differences are:

1. Rather than collect data individually from one site, our protocol used a team effort to simultaneously cover five sites on or near the Homer Spit. Four sites are actually on the Homer Spit and one site (Beluga Slough) is nearby. In addition we obtained observations the same day from a charter boat captain who volunteered to monitor the other side (south) of the Bay during scheduled trips. This site is called Islands and Islets.
2. Since each monitoring site has different habitat, data from each site is recorded individually as well as collectively. Accordingly, the project coordinator, in addition to writing a combined report for each session, gathered the individual site reports and entered each in the ISS portal for eBird.
3. Under the ISS protocol monitoring frequency should be once every 10 days. However, migrating shorebirds tend to spend less time at Alaska stopover sites than in the Lower-48. Studies of radio-tagged migrating shorebirds that stage in the Cooper River Delta found these birds stayed 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 of 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 and to avoid double-counting by monitoring too often, we settled on monitoring once every five days. This also agreed with the level of effort that volunteers were willing to commit; always an important factor with citizen science projects.

B. Monitoring Sites

Homer Spit Area - Monitoring sites and how the count was conducted (stationary, walking, or by boat) are listed below. Our 2009 report on Kachemak Bay Birders web site has aerial photos of each monitoring site.

- Homer Spit
 - ✓ Mud Bay - stationary
 - ✓ Mariner's Park Lagoon - stationary
 - ✓ Mid-spit area including Green Timbers and Louie's Lagoon - walking
 - ✓ Boat harbor and Lands End – stationary at several spots
- Beluga Slough - walking
- Islands and Islets on south side of Kachemak Bay - boat
 - ✓ Gull Island
 - ✓ Sixty-foot Rock
 - ✓ Cohen Island
 - ✓ Lancashire Rocks near Neptune Bay

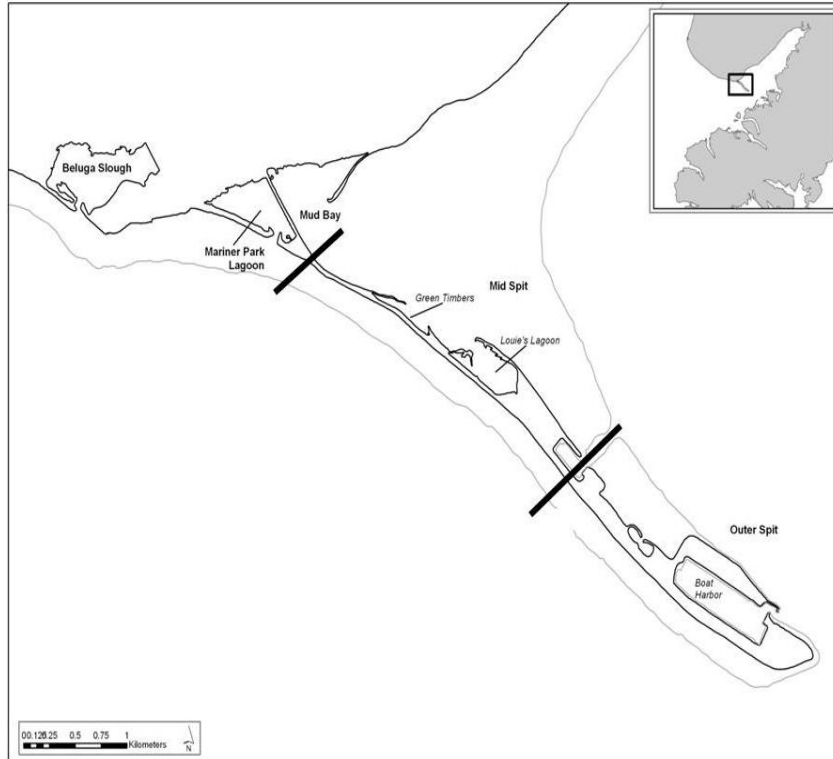


Figure 2. Illustration of shorebird monitoring sites for 2012.

C. Monitoring Dates and Times

The most important factor in establishing survey times is the tide. The highest and lowest tide during this year's project (but not the year) was on the same morning; May 7 when the highest tide was 22.1 feet at 3:33 am and the lowest tide was -5.8 feet at 10:03 am. These tides are based on the Seldovia District tide tables. The correction factor for the Homer Spit is inconsequential.

Table 1. Homer Spit Shorebird Monitoring Times and Tides

Date	Starting Time		High Tide	
	Time	Tide (ft.)	Time	Tide (ft.)
Thursday, April 14 th	1:15 pm	15.3	12:14 pm	16.1
Tuesday, April 19 th	6:15 pm	16.0	4:30 pm	20.3
Sunday, April 24 th	8:00 am	15.0	7:36 am	15.1
Friday April 29 th	1:30 pm	14.8	1:23 pm	15.0
Wednesday May 4 th	5:45 pm	15.4	4:26 pm	17.4
Monday May 9 th	7:30 am	15.3	6:49 am	15.6
Saturday May 14 th	2:00 pm	15.4	12:57 pm	16.5
Thursday May 19 th	6:45 pm	15.5	5:07 pm	18.7
Tuesday May 24 th	8:30 am	13.5	8:12 am	13.6

Monitoring is not conducted during higher than average high tides since shorebirds often leave the intertidal area at this time. Conversely, low tides put shorebirds out of viewing range. Based on our previous experience, the best time to begin monitoring is when the outgoing tide is approaching 15.0 feet, or at high tide in cases when high tide doesn't reach this level. The times used to begin monitoring are based on the quarter hour.

D. Volunteers Schedule

On most monitoring dates, at least two observers, all having local birding experience, were assigned to each team. This year, a total of 28 volunteers participated in this year's project on at least monitoring date.

Table 2. Dates and volunteers for the 2012 shorebird monitoring project.

Monitoring Site	Volunteers	Monitoring Dates								
		14-Apr	19-Apr	24-Apr	29-Apr	4-May	9-May	14-May	19-May	24-May
Mud Bay	Betty Siegel		X	X	X	X	X	X	X	X
	Jason Sodergren		X	X			X	X	X	X
	George Matz	X								
	BJ Hitchcock	X	X	X	X	X	X	X	X	X
	Joanne Thordarson	X	X			X			X	
	Dale Chorman				X	X				
Mariner Park Lagoon	Bette Seaman	X		X	X		X		X	
	Michael Craig	X	X	X	X	X	X	X	X	X
	Neal Wagner		X			X		X		X
Mid-Spit	Lani Raymond	X	X		X	X	X	X	X	X
	Gary Lyon	X	X	X	X	X	X	X	X	
	Carol Harding	X	X	X	X	X				X
	Lee Post			X						
	Jack Wiles					X	X	X	X	X
	Nancy Wrockledge					X				
	George Matz						X			
	Dale Chorman							X		
Boat Harbor area	Sharon Baur		X	X			X			
	Carla Stanley		X	X	X	X	X	X	X	
	Wayne Stanley		X		X	X	X	X	X	X
	Neal Wagner	X								
	Kyra Wagner	X								
	Aaron Lang			X	X	X				
	Bruce Bezon					X				
	Michelle Michaud									X
	Eric Paulsrud									X
Lori Paulsrud									X	
Beluga Slough	Kim Cooney	X	X	X					X	X
	Neal Wagner						X			
	Kyra Wagner						X			
	George Matz		X	X	X	X		X	X	X
	Nancy Lord		X	X	X	X	X	X	X	X
	Bruce Bezon								X	
Islands & Islets	Karl Stoltzfus	X			X	X	X	X	X	X
	Michelle Michaud				X	X	X	X	X	
All Spit Sites	Jack Wiles				X					
	Linda Gorman					X				

Considering that each of the 28 volunteers monitored for 2 hours, this year's project included 282 hours of monitoring effort. There were a couple of cases where a monitor had to leave early, which is not being accounted for. In 2009, 15 volunteers contributed about 108 hours of

monitoring effort. This first year many additional hours were spent on protocol discussion. In 2010, 20 volunteer contributed 230 hours of monitoring effort. In 2011, 18 volunteers contributed 186 hours of monitoring effort. In each year, most volunteers also attended a caucus after each monitoring session where observations were discussed.

E. Recording Observations

Appendix A provides a Kachemak Bay shorebird checklist extracted from *Checklist of Birds of Kachemak Bay, Alaska 2011* (CACCS 2011). There are 39 species on the list of which 31 species are either common or uncommon at some season of the year (mostly spring and/or fall) and eight are either rare or accidental.

Monitors used a one page form listing common and uncommon shorebirds (Appendix B) to record observations. On this form, they noted the species observed and abundance as well as when they first observed individual birds or flocks and when these birds left the monitoring site. The latter was used to match times with other sites in order to eliminate duplicate counts. Monitors also noted on the form any disturbance to shorebirds by people, dogs, or predators (e.g. raptors).

The coordinator obtained the current weather data for each 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>). Weather records are also available for the Homer Harbor but have a shorter history.

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, a corresponding adjustment was made to the total count record. While the cumulative site counts for each monitoring deducts any double counting, the record for the site does not.

Monitoring data was entered in the ISS eBird database by site. A report for each monitoring session was also posted on Kachemak Bay Birders (birding@kachemakbaybirders.org) and AKBirding (AKBirding@yahoo.com) list servers. These reports are included in this report under Appendix D.

IV. 2012 Monitoring Results

A. Total Counts

The 2012 Kachemak Bay Shorebird Monitoring Project observed 27 species of shorebirds and counted a total of approximately 23,972 individual birds. Table 3 presents a breakdown of this count by species for the four monitoring sites on Homer Spit, Beluga Slough, and Islands and Islets as well as the total for all six sites. This sort of breakdown allows a more accurate approach for comparisons West's data (discussed later) which covered just the Homer Spit.

Table 3. Number of shorebirds seen by species for all 2012 survey dates, sorted by abundance for All Sites.

SPECIES	Homer Spit Sites	Beluga Slough	Islands & Islets	All Sites
Western Sandpiper	7	327	-	16,375
Surfbird	17	-	2,377	2,919
Red-necked Phalarope	-	1	1,500	1,501
Dunlin	1	24	-	1,205
LESA/WESA/SESA	4	227	-	844
Black-bellied Plover	542	3	-	354
Semipalmated Plover	16,048	3	-	142
Least Sandpiper	6	3	-	103
Pacific Golden Plover	617	3	-	95
Short-billed Dowitcher	1	13	-	76
Dowitcher sp.	1	-	-	76
Black Turnstone	8	-	44	71
Greater Yellowlegs	139	19	-	68
Semipalmated Sandpiper	4	1	-	34
Whimbrel	63	13	-	28
Wandering Tattler	27	-	1	18
Lesser Yellowlegs	100	11	-	15
Black Oystercatcher	351	-	8	8
Sanderling	2	-	-	8
Marbled Godwit	33	-	-	7
Rock Sandpiper	1	-	5	6
Baird's Sandpiper	1	-	-	6
Bar-tailed Godwit	49	-	-	4
Yellowlegs sp.	92	-	-	2
Ruddy Turnstone	15	-	-	2
American Golden-Plover	1,181	-	-	1
Spotted Sandpiper	76	-	-	1
Pectoral Sandpiper	2	-	-	1
Long-billed Dowitcher	1	-	-	1
Wilson's Snipe	-	-	-	1
Total	19,389	648	3,935	23,972

Note: LESA/WESA/SESA lumps Least Sandpipers, Western Sandpipers, and Semipalmated Sandpipers when the observer couldn't identify by species. It likely includes Dunlin as well.

The table below provides a breakdown by species and date for all sites monitored. Appendix C has a similar spreadsheet for each site. Cells with red tabs have further information (e.g. weather, tides, and observers) when viewed in Excel. An Excel file of this data is available through the Kachemak Bay Birders web site.

Table 4. Shorebirds counted by species and date for all six sites during 2012 monitoring.

SPECIES	April			May			14	19	24	Total
	14	19	24	29	4	9				
Semipalmated Plover	-	-	-	4	7	30	51	29	21	142
Killdeer	-	-	-	-	-	-	-	-	-	-
American Golden-Plover	-	-	-	-	-	-	-	1	-	1
Pacific Golden Plover	-	2	3	9	75	1	4	-	1	95
Black-bellied Plover	-	-	66	27	240	11	6	3	1	354
Black Oystercatcher	-	-	-	-	4	2	1	1	-	8
Greater Yellowlegs	-	3	27	17	5	6	2	3	5	68
Lesser Yellowlegs	-	12	1	2	-	-	-	-	-	15
Yellowlegs sp.	-	-	-	-	-	-	1	1	-	2
Spotted Sandpiper	-	-	-	-	-	-	-	-	1	1
Whimbrel	-	-	-	-	2	1	8	8	9	28
Bar-tailed Godwit	-	-	-	-	1	1	2	-	-	4
Hudsonian Godwit	-	-	-	-	-	-	-	-	-	-
Marbled Godwit	-	-	-	-	7	-	-	-	-	7
Wandering Tattler	-	-	-	-	-	-	5	3	10	18
Surfbird	-	-	-	123	500	2,001	256	-	39	2,919
Ruddy Turnstone	-	-	-	-	-	-	1	-	1	2
Black Turnstone	-	-	-	3	12	1	54	-	1	71
Western Sandpiper	-	-	-	114	3,115	6,623	6,028	477	18	16,375
Least Sandpiper	-	-	2	9	9	50	30	2	1	103
Semipalmated Sandpiper	-	-	-	-	-	-	25	8	1	34
LESA/WESA/SESA	-	-	-	18	66	715	45	-	-	844
Sanderling	-	-	-	1	-	-	-	7	-	8
Pectoral Sandpiper	-	-	-	-	-	-	1	-	-	1
Dunlin	-	-	5	28	257	654	193	43	25	1,205
Rock Sandpiper	2	-	-	-	1	-	3	-	-	6
Baird's Sandpiper	-	-	-	-	-	-	-	6	-	6
Red Knot	-	-	-	-	-	-	-	-	-	-
Short-billed Dowitcher	-	-	-	1	60	2	11	2	-	76
Long-billed Dowitcher	-	-	-	-	1	-	-	-	-	1
Dowitcher sp.	-	-	-	-	19	21	21	14	1	76
Wilson's Snipe	-	-	-	-	-	-	-	-	1	1
Red Phalarope	-	-	-	-	-	-	-	-	-	-
Red-necked Phalarope	-	-	-	-	500	500	500	1	-	1,501
Other	-	-	-	-	-	-	-	-	-	-
Total	2	17	104	356	4,881	10,619	7,248	609	136	23,972

B. Data Analysis

Figure 3 illustrates arrival and departure dates as well as peak dates for all shorebirds by site.

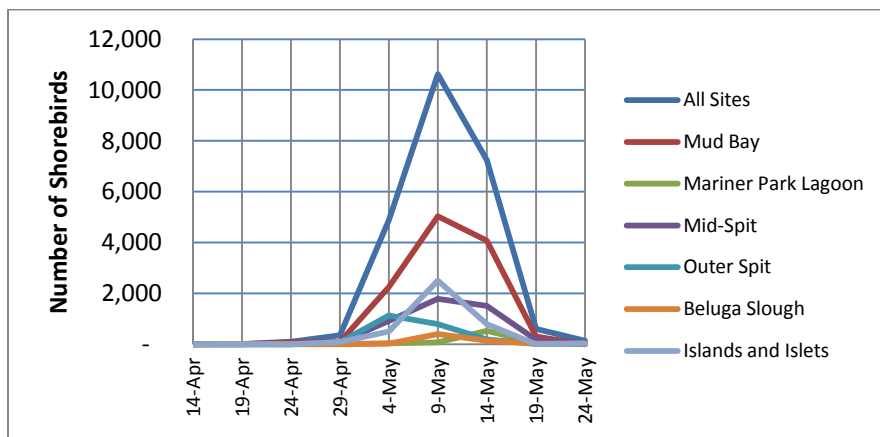


Figure 3. Number of shorebirds counted during 2012 by date and site.

As can be seen from Figure 3, the majority of shorebirds arrived within a two week span with May 9th being the peak. The peak occurred on May 6 in 2009, May 15 in 2010, and May 14 in 2011. However, in some cases, the actual peak occurred in-between monitoring dates, but this was not the case this year. As in other years, Mud Bay attracted the largest number of shorebirds.

Migrating shorebirds species arrive in Kachemak Bay at different times. Typically, yellowlegs and plovers are the first wave followed by sandpipers, and then tattlers, etc. However, the first shorebird usually recorded in our monitoring is the Rock Sandpiper; thousands overwinter in Kachemak Bay. But unlike other years, this year there were just a couple of Rock Sandpipers left when we started our monitoring session. Most had already left for their breeding grounds.

Figures 4 and 5 illustrate the arrival and departure dates of the more abundant Kachemak Bay shorebird species based on the number of birds seen, by species, for a monitoring date divided by the total number of birds of that species counted this year. Using this percentage rather than number of birds allows comparison on a scale that easily fits the chart.

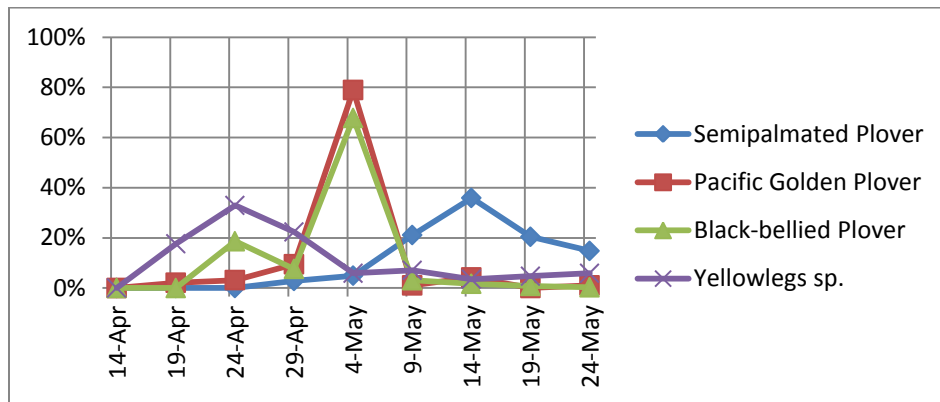


Figure 4. Kachemak Bay Arrival and Departure Dates for Plovers and Yellowlegs in 2012.

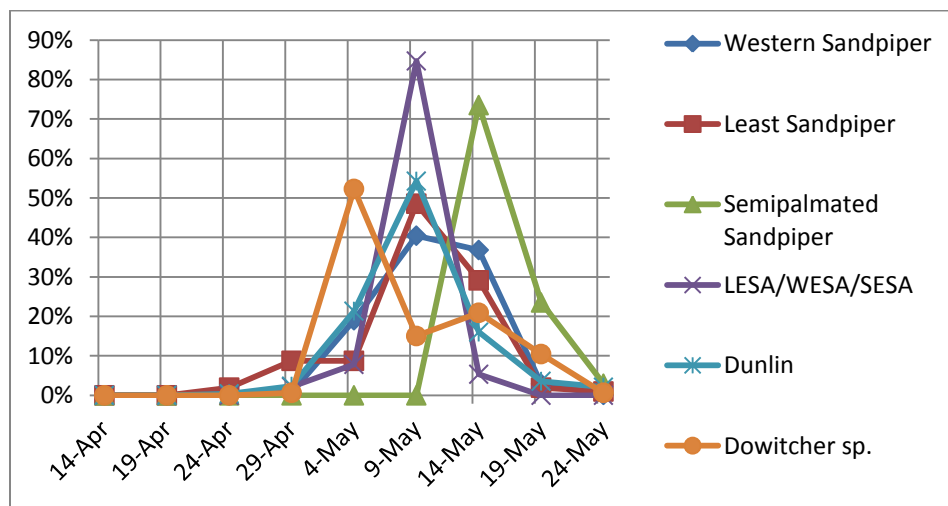


Figure 5. Kachemak Bay Arrival and Departure Dates for Sandpipers and Dowitchers in 2012.

C. Supplemental Monitoring

In our first year of monitoring (2009) it appeared as if large flocks of shorebirds (particularly Western Sandpipers and Dunlin) arrived at the Homer Spit after a scheduled monitoring date but left before the next monitoring date; hence, they were not included in the count. To get a better handle on turn-over, in 2010 we monitored Mud Bay daily for shorebirds during the two weeks of peak migration. From this we verified that there were substantial day-to-day variances in shorebird presence. For instance, on May 4th our observer counted 1,100 Western Sandpipers and 92 Dunlin after high tide. On May 5th, a scheduled monitoring day, 500 Western Sandpipers and 100 Dunlin were counted. The following day, there were 700 Western Sandpipers and 89 Dunlin. Based on this supplemental data we estimated that although “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.” (Matz, 2010).

Since the supplemental observations did not follow our protocol, the data could not be added to our monitoring data. This led to a decision; do we change our protocol and monitor once every three days, or even less, in order to include some of the shorebirds we were missing, or do we stick with the existing protocol? The consensus with volunteer monitors was that monitoring once every five days was about the right amount of effort they were willing to expend. But a couple of volunteers were willing to do daily spot checks during the peak of migration to provide a supplemental database in order to estimate how many shorebirds were missed via our protocol. So we decided to stick with the original protocol, but use supplemental monitoring to approximate how many shorebirds may have been missed.

In 2011, supplemental monitoring indicated that two large pulses of shorebirds arrived after a monitoring date and the majority had left before next monitoring date. The report for last year stated that, “The number of sandpipers seen on Friday that left that morning was about 2-3 times greater than the number of shorebirds counted on Saturday during a scheduled monitoring session.”(Matz, 2011). Once again, our shorebird count for the year was less than what had been present at Homer Spit, but at least we had some idea as to the amount of error.

In 2012 we continued to obtain supplemental data. Four sites on the Homer Spit were spot checked nearly every day from April 25th through May 17th. Table – presents a summary of this data.

Table 5. Supplemental Count for 2012 on Four Homer Spit Sites.

Site	Count	Percentage
Mud Bay	13,551	82%
Mariner Park	379	2%
Mid-Spit	2,018	12%
Outer Spit	642	4%
Total	16,590	100%

This year the supplementary count (16,590) was substantially less than the count obtained using our protocol (23,972), indicating that most of this year’s Homer Spit shorebird migrants were included in our count dates. The table below, which includes both the supplementary count and count data for the four Homer Spit sites during the peak of migration (April 29-May16), shows our scheduled monitoring date seems to have coincided with three pulses of sandpiper arrivals (May 4, 9, 14). This gives us a closer estimate of the number of shorebirds that stopped at the Homer Spit during spring migration in 2012, but it also skews the 2012 count compared to previous years. As we will see later, given this coincidence between monitoring dates and shorebird pulses, it is not surprising that the count for 2012 has been our highest.

Table 6. Supplemental and Protocol Monitoring Data for four Homer Spit Sites. (Scheduled monitoring dates are in blue)

SPECIES	April	May														Total			
	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Semipalmated Plover	4	-	-	-	6	7	-	-	-	-	30	3	-	-	-	50	4	-	104
Killdeer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
American Golden-Plover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific Golden Plover	9	13	27	12	45	73	8	-	-	-	1	-	5	-	-	4	-	-	197
Black-bellied Plover	25	15	74	175	126	240	11	-	-	8	11	5	15	17	-	6	-	-	728
Black Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greater Yellowlegs	14	-	-	-	2	3	2	-	-	-	4	-	-	-	-	-	-	-	25
Lesser Yellowlegs	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	4
Yellowlegs sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Spotted Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whimbrel	-	-	36	-	6	2	-	-	-	-	1	-	-	4	2	8	-	-	59
Bar-tailed Godwit	-	-	-	-	-	1	-	-	-	-	1	-	-	-	2	2	-	-	6
Hudsonian Godwit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marbled Godwit	-	-	1	1	1	7	-	-	-	-	-	-	-	-	-	-	-	-	10
Wandering Tattler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	15	19
Surfbird	40	-	150	-	408	500	-	-	-	-	1	-	-	-	-	-	-	-	1,099
Ruddy Turnstone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Black Turnstone	-	-	1	10	1	12	-	-	-	-	-	-	-	-	-	15	-	-	39
Western Sandpiper	114	17	70	203	1,980	3,115	270	-	-	1,500	6,443	1,750	1,500	335	750	5,903	3,004	2,380	29,334
Least Sandpiper	9	-	-	25	36	9	12	-	-	-	48	10	-	-	-	30	6	16	201
Semipalmated Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	25
LESA/WESA/SESA	13	-	-	-	-	44	-	-	-	-	515	-	-	-	-	45	-	-	617
Sanderling	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Pectoral Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Dunlin	28	20	75	129	206	257	30	-	-	100	634	150	-	60	50	190	5	150	2,084
Rock Sandpiper	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Baird's Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Knot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short-billed Dowitcher	1	2	2	16	15	60	-	-	-	15	2	20	10	26	8	-	10	-	187
Long-billed Dowitcher	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Dowitcher sp.	-	-	-	-	-	19	-	-	-	-	21	-	-	-	-	21	-	-	61
Wilson's Snipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red-necked Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other (solitary sandpiper)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	260	67	436	572	2,832	4,351	335	-	-	1,623	7,712	1,938	1,530	442	812	6,306	3,029	2,561	34,806
Total less scheduled count																			16,177

Appendix D has spreadsheets for each site plus totals.

It might seem that a solution to getting a more accurate population estimate of shorebird migrants would be to simply add the supplemental data to the protocol data, but that is not necessarily the case. As the table above illustrates, the pulses tend to be spread over a couple of days. While flocks of birds were coming and going during the pulse, it is likely that at least some of the migrants were here for more than one day, thus being double counted by the daily supplementary count. But since we don’t know the how long the Homer Spit stopover typically lasts, no estimate of double counting can be made.

An interesting side note of observing the arrival of the three pulses mentioned above was the correlation with weather. Previous to the arrival of the pulse, the weather was stormy and windy (the date tabs for the spreadsheets includes weather conditions). The wind seemed to blow the shorebirds into Kachemak Bay. As the stormy weather passed, the number of shorebirds

foraging on the Homer Spit mud flats increased dramatically. It was observed that their departure often occurred just before high tide.

D. Calibration Monitoring

One of the main objectives of this project is to compare our results with those of George West who monitored Homer Spit spring shorebird migrations from 1986-1994. Although we have similar protocols (e.g., monitoring after high tide), there is one important difference. As previously mentioned, we use a team of two or more volunteers per site whereas George West did a travelling count of the entire Spit. While it stands to reason that our more intensive approach should yield higher counts than the West approach, we thought it necessary to test this. This year, at the same time as our scheduled monitoring, Michelle Michaud covered the four sites on the Spit in a manner similar to what West used during his monitoring. We then compared the results.

Table 7. Comparing the West Monitoring Approach to Kachemak Bay Birders Protocol.

Site	29-Apr		4-May		9-May		14-May		19-May		Total	
	Monitors	Michelle	Monitors	Michelle	Monitors	Michelle	Monitors	Michelle	Monitors	Michelle	Monitors	Michelle
Mud Bay	86	6	2,252	1,044	5,042	3,316	4,074	4,111	312	210	11,766	8,687
Mariner Park Lagoon	12	6	45	10	75	10	528	414	71	-	731	440
Mid-Spit	79	14	924	148	1,794	381	1,514	366	188	56	4,499	965
Outer Spit	75	12	1,130	52	801	40	196	32	13	2	2,215	138
Total	252	38	4,351	1,254	7,712	3,747	6,312	4,923	584	268	19,211	10,230

As Table 7 illustrates, monitors who covered only one site for the two hour observation period saw nearly twice as many shorebirds as Michelle who covered all four sites during the same two hours. It appears as if our more intensive approach would lead to higher counts than West if everything else were the same.

V. Trends

A. Comparing 2012 to Previous Years

Our four years of monitoring have followed the same protocol. The only minor changes have been dates, times, and number of volunteers. Our baseline monitoring date is centered on the Monday after the Kachemak Bay Shorebird Festival so that our monitoring schedule doesn't conflict with the festival where many of us volunteer. Consequently, monitoring dates change slightly from year-to-year, although 2011 and 2012 dates are the same because of leap year. Monitoring times are based on the ever changing tide tables. Volunteers have been fairly consistent, but there have been a few new volunteers. Table 8 illustrates year to year variations by species.

Table 8. Annual Shorebird Count by Species Sorted by Average Abundance.

Species	2009	2010	2011	2012	Average
Western Sandpiper	3,229	4,996	4,100	16,375	7,175
Red-necked Phalarope	1,630	1,500	5,152	1,501	2,446
LESA/WESA/SESA	104	803	3,336	844	1,272
Dunlin	1,097	561	1,283	1,205	1,037
Surfbird	292	110	574	2,919	974
Black-bellied Plover	179	315	282	354	283
Rock Sandpiper	141	405	482	6	259
Semipalmated Plover	194	203	197	142	184
Least Sandpiper	136	245	219	103	176
Black Turnstone	81	373	121	71	162
Dowitcher sp.	99	82	57	76	79
Short-billed Dowitcher	125	-	33	76	59
Greater Yellowlegs	24	36	59	68	47
Pacific Golden Plover	5	42	5	95	37
Wandering Tattler	13	56	30	18	29
Whimbrel	10	22	27	28	22
Lesser Yellowlegs	-	26	3	15	11
Black Oystercatcher	11	11	13	8	11
Semipalmated Sandpiper	1	5	3	34	11
Marbled Godwit	3	12	1	7	6
Yellowlegs sp.	2	18	-	2	6
Hudsonian Godwit	18	-	2	-	5
Sanderling	-	1	8	8	4
Long-billed Dowitcher	-	-	15	1	4
Ruddy Turnstone	1	10	1	2	4
Pectoral Sandpiper	-	7	-	1	2
Wilson's Snipe	1	5	1	1	2
Bar-tailed Godwit	3	-	-	4	2
Baird's Sandpiper	1	-	-	6	2
American Golden-Plover	3	1	1	1	2
Spotted Sandpiper	3	-	-	1	1
Red Knot	-	-	2	-	1
Total Individuals	7,406	9,845	16,007	23,972	14,308
Total Species	24	23	25	27	25

It is apparent that there has been a steady increase in the count since the first year of this project. Three possible reasons are;

1. **Coincidence** - As previously discussed, some of the high count for 2012 is clearly due to having the count date coincide with the peak for three pulses of sandpiper arrival. Missing the peak by a day or two could have a significant effect on the recorded count .
2. **Number of Volunteer Monitors** - Since the start of this project there has been an increase in the number of volunteer monitors. This provides more intense coverage and increases the likelihood of seeing shorebirds that would have been missed with less coverage. Our current level of coverage is probably near saturation, meaning we probably see any shorebird that is at a site during the two hours of monitoring.
3. **More Experience** - Many of the volunteers have participated all four years and have become more expert at shorebird identification as well as more proficient as to where they can expect to see shorebirds. This undoubtedly creates an upward bias to the count, though it is difficult to estimate how much.

Despite the influence of the factors discussed above, there does seem to be more shorebirds stopping over at the Homer Spit the last year or two than during the first two years of monitoring. This could be due to an overall rebound in some shorebird populations, weather patterns, or just that a higher percentage of migrating shorebirds are now stopping at the Homer Spit instead of some other Cook Inlet site. A more definitive explanation would require a review of information beyond the scope of this monitoring project.

B. Comparing Recent Data to West's Data

As in previous years, this report compares the Kachemak Bay Shorebird Monitoring Project data to George West's shorebird monitoring data from two decades ago. Not all of West's years of monitoring are useful for comparison purposes. Observations in 1987 and 1988 were not consistent. Also, after 1994 West's data includes observations by a variety of local birders which didn't follow any protocol. Consequently, only the years 1986 and 1989-1994 are being used for comparison which is consistent with West's presentation of his shorebird counts (West 1996). Table 9 includes a summary of the West data being used.

With the exception of frequency, the protocol used by West is reasonably similar to the Kachemak Bay Birders protocol. West says "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)." However, West's shorebird counts were done daily and the protocol being followed by Kachemak Bay Birders is to monitor once every five days. Therefore, adjustments to the data are needed before making any comparisons. To provide a more direct match, the only West data being used in the comparison below is for the six dates that match our 2009 monitoring dates. As mentioned earlier, our monitoring dates advance by one day every year to avoid conflict with the shorebird festival so the dates for 2010, 2011, and 2012 don't exactly match the West dates.

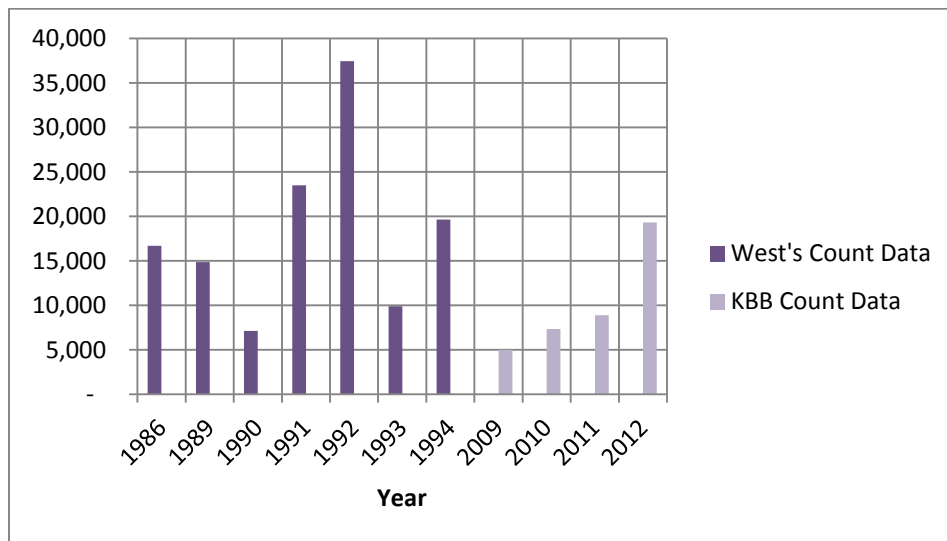
As can be seen from the Table 9 and Figure 6, there appears to be considerably fewer shorebirds visiting the Homer Spit during spring migration now than two decades ago. But there also seems to be an increase in the number of shorebirds over the past four years. As previously mentioned,

some of this increase is due to having monitoring dates coincide with the peak of pulses for the arrival of sandpipers, particularly Western Sandpipers and Dunlin.

Table 9. Comparison of six days of West shorebird monitoring data to six comparable days of Kachemak Bay Birders data for similar survey sites.

SPECIES	1986	1989	1990	1991	1992	1993	1994	Homer Spit Sites 2009	Homer Spit Sites 2010	Homer Spit Sites 2011	Homer Spit Sites 2012
Semipalmated Plover	6	8	1	9	27	22	28	159	158	142	118
American Golden-Plover			5	26	9		1	3			1
Pacific Golden Plover							7	4	39	2	90
Black-bellied Plover	275	1	86	52	244	51	79	170	307	241	351
Black Oystercatcher									1		-
Greater Yellowlegs					17	4		7	13	19	44
Lesser Yellowlegs									20	3	3
Yellowlegs spp.									3		2
Whimbrel				1	9	1		2	6	14	11
Bar-tailed Godwit				1	2			3			4
Hudsonian Godwit							1	18		2	-
Marbled Godwit		4		1	1		2	3	10	1	7
Wandering Tattler				5	2	1	2	3	37	20	7
Surfbird	1,000	75	3,015	602	10,010	1,200	830	69	39	238	541
Ruddy Turnstone	1		3		7	1	8		6		1
Black Turnstone	600	451	1,812	766	1,730	500	262	46	294	89	27
Western Sandpiper	14,000	12,025	2,010	20,510	20,725	7,200	17,469	3,071	4,935	3,908	16,040
Least Sandpiper	50			2	21	2	20	121	195	168	100
Semipalmated Sandpiper								1	4	3	33
LESA/WESA/SESA								103	640	2,987	617
Sanderling									1	8	8
Pectoral Sandpiper	2			1	1						1
Dunlin	130	1,760	133	1,219	3,271	562	642	1,091	535	938	1,157
Rock Sandpiper					7		2				1
Baird's Sandpiper								1			6
Red Knot						1	2				-
Short-billed Dowitcher	600	525	58	183	1,354	325	175	22		32	63
Long-billed Dowitcher											1
Dowitcher spp.								97	71	42	75
Wilson's Snipe											-
Red-necked Phalarope				100			100			1	-
Total	16,664	14,849	7,123	23,478	37,437	9,872	19,628	4,994	7,314	8,858	19,309
West Average	18,436										
KBB Average	10,119										

Figure 6. Total shorebird counts by year for the Homer Spit



The reasons for these changes are complex, involving more than just the presence of shorebirds at Homer Spit during spring migration. While we have no answers, it is obvious more monitoring is needed to get a better understanding of current shorebirds populations. In 2012 we probably observed and counted the highest percentage of shorebirds visiting the Homer Spit in any one season, given our protocol of monitoring once every five days. Future efforts will help determine how much of this might be due to just a coincidence between pulses and monitoring dates or if there is also a recent increase in shorebird populations visiting the Homer Spit during spring migration.

VI. Other Activities

A. Outreach

The information obtained as a result of the 2012 Kachemak Bay Shorebird Monitoring Project was reported to local birders via the Kachemak Bay Birders (birding@kachemakbaybirders.org) list serve and the AKBirding (AKBirding@yahoo.com) list serve.

The data was also entered in eBird under the ISS portal, listing observations for each site and date.

B. Presentations

The results from the Kachemak Bay Shorebird Project were presented at the following.

- What's New in the Bay Discovery Lab, March 7, 2012.
- Kachemak Bay Science Conference, March 9 & 10, 2012.
Kachemak Bay Shorebird Monitoring Project; Comparing Past to Present by George Matz
- Kachemak Bay Shorebird Festival, May 10-13, 2012.
Kachemak Bay Shorebird Monitoring Project; A Citizen Science Project by George Matz.
- *Watching Waterbirds*, PowerPoint slide show for Kachemak Bay Birders May meeting on birds seen during shorebird monitoring project.

C. Publications

A review of our first three years of monitoring appeared in the spring 2012 issue of the Wader Study Group Bulletin, a peer reviewed journal.

- Matz, G., Lanctot, R.B., West, G.C., Michaud, M. & the Kachemak Bay Birders. 2011. Reassessment of a Western Hemisphere Shorebird Reserve Network Site: Kachemak Bay, Alaska. Wader Study Group Bull.

Other publications that mention the Kachemak Bay Shorebird Monitoring Project are;

- Homer Tribune, Point of View, April 18, 2012.
Among other challenges, shorebirds hunted legally in Caribbean by George Matz

- *Recovering Shorebirds in the Americas*, Bird Conservation, spring, 2012. Mention of Kachemak Bay Shorebird Monitoring Project results.
- Alaska Shorebird Group. *Ongoing or new studies of Alaska shorebirds; Annual Summary Compilation. Kachemak Bay Shorebird Monitoring Project:2012*, George Matz and Kachemak Bay Birders.

VII. Future Efforts

Now that we have four years of shorebird monitoring data, our results are becoming more valuable and the reason to continue is more imperative. Plans are to complete a Kachemak Bay Shorebird Monitoring Project in 2013 using the same protocol as previous years.

An addition to this effort there will be monitoring shorebirds at Anchor Point, the northern boundary of Kachemak Bay, by Michelle Michaud. Her visits will correspond to the monitoring schedule for the Homer Spit. The purpose of monitoring Anchor Point is to determine the importance of this location for shorebird migration.

We are also interested in exploring the possibility of doing some stable isotope analysis on feathers to determine the general wintering and breeding grounds of shorebirds that stopover at the Homer Spit.

VIII. Acknowledgements

The Kachemak Bay Shorebird Monitoring Project is a citizen science effort that could not exist without good volunteer support. Volunteers for this year's effort are listed in Table 1. We also want to thank the Islands and Ocean Visitors Center who provided us with meeting facilities for our caucus after monitoring sessions. We have also had the support of the Alaska Maritime National Wildlife Refuge and the Kachemak Bay Research Reserve, both based in Homer. Again, 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. A special thanks to Michelle Michaud for reviewing a draft of this years report.

IX. Literature Cited

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Warnock et al, *Birding*, Spring Migration of Western Sandpipers, Dunlins and Dowitchers in Western North America, July/August 2005

West 1996. George West, *Shorebird Guide for Kachemak Bay and Homer, Alaska*. Pratt Museum, Homer, Alaska.

X. Appendices

Appendix A: Checklist of 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.

Appendix D: Supplemental Monitoring Data for 2012.

Appendix E: Calibration Monitoring

Appendix F: Email reports to birding list-serves.

Appendix A

Birds of Kachemak Bay, Alaska: Shorebird Checklist

This checklist was derived from the *Checklist of Birds of Kachemak Bay, Alaska 2011* published by the Center for Alaskan Coastal Studies (www.akcoastalstudies.org). It covers all watersheds draining into Kachemak Bay (the area between Anchor Point and Point Pogibshi) as well as the Anchor River drainage.

Abundance

C - Common: Easily found in small to large numbers in appropriate habitat.

U - Uncommon: Occasionally, but not always, found in small number with some effort in appropriate habitat.

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.

A - Accidental: Represents an exceptional occurrence of birds outside their normal range that might not be repeated again for decades.

Status

r - resident

b - confirmed breeder

s - summer resident

w - 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 - introduced

Sp - spring: March - May

Su - summer: June - Aug.

F - fall: Sept. - Nov.

W - winter: Dec. - Feb.

Species	Sp	Su	F	W	Status
Black-bellied Plover	C	C	C	A	m
American Golden-plover	U	R	U	-	m
Pacific Golden-plover	C	R	U	-	m
Semipalmated Plover	C	C	C	-	smb
Killdeer	R	R	-	-	v
Black Oystercatcher	C	C	U	U	sb
Greater Yellowlegs	C	C	C	-	sb
Lesser Yellowlegs	U	U	U	-	sb
Solitary Sandpiper	R	U	R	-	sb
Wandering Tattler	C	C	C	-	s
Spotted Sandpiper	C	C	C	-	sb
Whimbrel	C	C	C	-	sm
Bristle-thighed Curlew	A	-	-	-	m
Hudsonian Godwit	U	R	-	-	m
Bar-tailed Godwit	U	A	R	-	m
Marbled Godwit	U	R	A	-	m
Ruddy Turnstone	U	R	R	-	m
Black Turnstone	C	U	U	-	m
Surfbird	C	C	C	-	sm
Red Knot	U	R	R	-	m
Sanderling	U	U	U	R	m
Semipalmated Sandpiper	U	R	U	-	m
Western Sandpiper	C	C	C	-	m
Red-necked Stint	A	A	-	-	v
Temminck's Stint	A	-	-	-	v
Least Sandpiper	C	C	U	-	smb
Baird's Sandpiper	R	R	U	-	m
Pectoral Sandpiper	C	U	C	-	m
Sharp-tailed Sandpiper	-	-	U	-	m
Rock Sandpiper	C	R	U	C	w
Dunlin	C	U	U	R	m
Stilt Sandpiper	-	-	R	-	m
Ruff	A	-	-	-	v
Short-billed Dowitcher	C	C	U	-	m
Long-billed Dowitcher	U	U	U	-	sm
Jack Snipe	-	-	A	-	v
Wilson's Snipe	C	C	C	R	sb
Red-necked Phalarope	C	C	C	-	sb
Red Phalarope	A	A	A	-	V

Appendix B

Kachemak Bay Birders 2011 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					

Appendix C

2012 Shorebird Monitoring Project										
SITE : Mud Bay										
Stationary Count										
SPECIES	April			May				Total		
	14	19	24	29	4	9	14		19	24
Semipalmated Plover						2	8	5	1	16
Killdeer										-
American Golden-Plover								1		1
Pacific Golden Plover		2	3							5
Black-bellied Plover			66	6	27	10		1		110
Black Oystercatcher										-
Greater Yellowlegs						1				1
Lesser Yellowlegs			1	1						2
Yellowlegs sp.								1		1
Spotted Sandpiper										-
Whimbrel						1	5		2	8
Bar-tailed Godwit						1	2			3
Hudsonian Godwit										-
Marbled Godwit					7					7
Wandering Tattler										-
Surfbird										-
Ruddy Turnstone										-
Black Turnstone										-
Western Sandpiper				65	2,000	4,500	4,000	250		10,815
Least Sandpiper			2	4		6	6			18
Semipalmated Sandpiper										-
LESA/WESA/SESA										-
Sanderling										-
Pectoral Sandpiper							1			1
Dunlin			5	9	200	500	40	43		797
Rock Sandpiper										-
Baird's Sandpiper										-
Red Knot										-
Short-billed Dowitcher				1	18					19
Long-billed Dowitcher										-
Dowitcher sp.						21	12	10		43
Wilson's Snipe										-
Red Phalarope										-
Red-necked Phalarope										-
Other										-
Total	-	2	77	86	2,252	5,042	4,074	311	3	11,847

2012 Shorebird Monitoring Project										
SITE : Mariner Park Lagoon										
Stationary Count										
SPECIES	April			May			Total			
	14	19	24	29	4	9		14	19	24
Semipalmated Plover							8			8
Killdeer										-
American Golden-Plover										-
Pacific Golden Plover					5	1				6
Black-bellied Plover				2						2
Black Oystercatcher										-
Greater Yellowlegs		1	12	9	1	2		1		26
Lesser Yellowlegs		1		1						2
Yellowlegs sp.										-
Spotted Sandpiper										-
Whimbrel									2	2
Bar-tailed Godwit										-
Hudsonian Godwit										-
Marbled Godwit										-
Wandering Tattler										-
Surfbird										-
Ruddy Turnstone										-
Black Turnstone										-
Western Sandpiper				8	14		500	57		579
Least Sandpiper					9	17	10			36
Semipalmated Sandpiper							5	3		8
LESA/WESA/SESA					14	55				69
Sanderling										-
Pectoral Sandpiper										-
Dunlin							5			5
Rock Sandpiper										-
Baird's Sandpiper								6		6
Red Knot										-
Short-billed Dowitcher										-
Long-billed Dowitcher										-
Dowitcher sp.					2			4		6
Wilson's Snipe									1	1
Red Phalarope										-
Red-necked Phalarope										-
Other										-
Total	-	2	12	20	45	75	528	71	3	756

2012 Shorebird Monitoring Project										
SITE : Mid-Spit										
Travelling Count										
SPECIES	April			May					Total	
	14	19	24	29	4	9	14	19		24
Semipalmated Plover				2	6	24	24	21	16	93
Killdeer										-
American Golden-Plover										-
Pacific Golden Plover				9	68		4			81
Black-bellied Plover				15	133		4	2		154
Black Oystercatcher										-
Greater Yellowlegs		2	10	5	2	1			2	22
Lesser Yellowlegs										-
Yellowlegs sp.							1			1
Spotted Sandpiper										-
Whimbrel					2		3			5
Bar-tailed Godwit										-
Hudsonian Godwit										-
Marbled Godwit										-
Wandering Tattler									6	6
Surfbird										-
Ruddy Turnstone										-
Black Turnstone					10		6			16
Western Sandpiper				21	601	1,150	1,303	155	8	3,238
Least Sandpiper				4		25	10	2		41
Semipalmated Sandpiper								2		2
LESA/WESA/SESA				13	30	460				503
Sanderling				1				4		5
Pectoral Sandpiper										-
Dunlin				9	34	132	144		24	343
Rock Sandpiper										-
Baird's Sandpiper										-
Red Knot										-
Short-billed Dowitcher					21	2				23
Long-billed Dowitcher										-
Dowitcher sp.					17		9		1	27
Wilson's Snipe										-
Red Phalarope										-
Red-necked Phalarope										-
Other										-
Total	-	2	10	79	924	1,794	1,508	186	57	4,560

2012 Shorebird Monitoring Project										
SITE : Outer Spit										
Travelling Count										
SPECIES	April			May					Total	
	14	19	24	29	4	9	14	19		25
Semipalmated Plover				2	1	4	10	1	4	22
Killdeer										-
American Golden-Plover										-
Pacific Golden Plover										-
Black-bellied Plover				2	80	1	2			85
Black Oystercatcher										-
Greater Yellowlegs										-
Lesser Yellowlegs										-
Yellowlegs spp.										-
Spotted Sandpiper									1	1
Whimbrel										-
Bar-tailed Godwit					1					1
Hudsonian Godwit										-
Marbled Godwit										-
Wandering Tattler							4	3	4	11
Surfbird				40	500	1			1	542
Ruddy Turnstone							1		1	2
Black Turnstone					2		9			11
Western Sandpiper				20	500	793	100	3		1,416
Least Sandpiper				1			4			5
Semipalmated Sandpiper							20	3		23
LESA/WESA/SESA							45			45
Sanderling								3		3
Pectoral Sandpiper										-
Dunlin				10	23	2	1			36
Rock Sandpiper					1					1
Baird's Sandpiper										-
Red Knot										-
Short-billed Dowitcher					21					21
Long-billed Dowitcher					1					1
Dowitcher sp.										-
Wilson's Snipe										-
Red Phalarope										-
Red-necked Phalarope										-
Other										-
Total	-	-	-	75	1,130	801	196	13	11	2,226

2012 Shorebird Monitoring Project

SITE : Beluga Slough

Travelling Count

SPECIES	April			May						Total
	14	19	24	29	4	9	14	19	24	
Semipalmated Plover							1	2		3
Killdeer										-
American Golden-Plover										-
Pacific Golden Plover					2				1	3
Black-bellied Plover				2					1	3
Black Oystercatcher										-
Greater Yellowlegs			5	3	2	2	2	2	3	19
Lesser Yellowlegs		11								11
Yellowlegs sp.										-
Spotted Sandpiper										-
Whimbrel								8	5	13
Bar-tailed Godwit										-
Hudsonian Godwit										-
Marbled Godwit										-
Wandering Tattler										-
Surfbird										-
Ruddy Turnstone										-
Black Turnstone										-
Western Sandpiper						180	125	12	10	327
Least Sandpiper						2			1	3
Semipalmated Sandpiper									1	1
LESA/WESA/SESA				5	22	200				227
Sanderling										-
Pectoral Sandpiper										-
Dunlin						20	3		1	24
Rock Sandpiper										-
Baird's Sandpiper										-
Red Knot										-
Short-billed Dowitcher							11	2		13
Long-billed Dowitcher										-
Dowitcher sp.										-
Wilson's Snipe										-
Red Phalarope										-
Red-necked Phalarope								1		1
Other										-
Total	-	11	5	10	26	404	142	27	23	648

2012 Shorebird Monitoring Project										
SITE : Islands and Islets										
Travelling Count										
SPECIES	April			May						Total
	14	19	24	29	4	9	14	19	24	
Semipalmated Plover										-
Killdeer										-
American Golden-Plover										-
Pacific Golden Plover										-
Black-bellied Plover										-
Black Oystercatcher					4	2	1	1		8
Greater Yellowlegs										-
Lesser Yellowlegs										-
Yellowlegs sp.										-
Spotted Sandpiper										-
Whimbrel										-
Bar-tailed Godwit										-
Hudsonian Godwit										-
Marbled Godwit										-
Wandering Tattler							1			1
Surfbird				83		2,000	256		38	2,377
Ruddy Turnstone										-
Black Turnstone				3		1	39		1	44
Western Sandpiper										-
Least Sandpiper										-
Semipalmated Sandpiper										-
LESA/WESA/SESA										-
Sanderling										-
Pectoral Sandpiper										-
Dunlin										-
Rock Sandpiper	2						3			5
Baird's Sandpiper										-
Red Knot										-
Short-billed Dowitcher										-
Long-billed Dowitcher										-
Dowitcher sp.										-
Wilson's Snipe										-
Red Phalarope										-
Red-necked Phalarope					500	500	500			1,500
Other										-
Total	2	-	-	86	504	2,503	800	1	39	3,935

SITE : Homer Spit (all 4 sites)										
Combined Total										
SPECIES	April			May						Total
	14	19	24	29	4	9	14	19	24	
Semipalmated Plover	-	-	-	4	7	30	50	27	21	139
Killdeer	-	-	-	-	-	-	-	-	-	-
American Golden-Plover	-	-	-	-	-	-	-	1	-	1
Pacific Golden Plover	-	2	3	9	73	1	4	-	-	92
Black-bellied Plover	-	-	66	25	240	11	6	3	-	351
Black Oystercatcher	-	-	-	-	-	-	-	-	-	-
Greater Yellowlegs	-	3	22	14	3	4	-	1	2	49
Lesser Yellowlegs	-	1	1	2	-	-	-	-	-	4
Yellowlegs sp.	-	-	-	-	-	-	1	1	-	2
Spotted Sandpiper	-	-	-	-	-	-	-	-	1	1
Whimbrel	-	-	-	-	2	1	8	-	4	15
Bar-tailed Godwit	-	-	-	-	1	1	2	-	-	4
Hudsonian Godwit	-	-	-	-	-	-	-	-	-	-
Marbled Godwit	-	-	-	-	7	-	-	-	-	7
Wandering Tattler	-	-	-	-	-	-	4	3	10	17
Surfbird	-	-	-	40	500	1	-	-	1	542
Ruddy Turnstone	-	-	-	-	-	-	1	-	1	2
Black Turnstone	-	-	-	-	12	-	15	-	-	27
Western Sandpiper	-	-	-	114	3,115	6,443	5,903	465	8	16,048
Least Sandpiper	-	-	2	9	9	48	30	2	-	100
Semipalmated Sandpiper	-	-	-	-	-	-	25	8	-	33
LESA/WESA/SESA	-	-	-	13	44	515	45	-	-	617
Sanderling	-	-	-	1	-	-	-	7	-	8
Pectoral Sandpiper	-	-	-	-	-	-	1	-	-	1
Dunlin	-	-	5	28	257	634	190	43	24	1,181
Rock Sandpiper	-	-	-	-	1	-	-	-	-	1
Baird's Sandpiper	-	-	-	-	-	-	-	6	-	6
Red Knot	-	-	-	-	-	-	-	-	-	-
Short-billed Dowitcher	-	-	-	1	60	2	-	-	-	63
Long-billed Dowitcher	-	-	-	-	1	-	-	-	-	1
Dowitcher sp.	-	-	-	-	19	21	21	14	1	76
Wilson's Snipe	-	-	-	-	-	-	-	-	1	1
Red Phalarope	-	-	-	-	-	-	-	-	-	-
Red-necked Phalarope	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total	-	6	99	260	4,351	7,712	6,306	581	74	19,389

Appendix D

Supplemental Monitoring Data for 2012 for Homer Spit Sites

SITE : Homer Spit Totals																								
Supplemental Observations																								
SPECIES	April					May														Total				
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17
Semipalmated Plover	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	3	-	-	-	-	4	-	1	14
Killdeer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
American Golden-Plover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific Golden Plover	4	-	6	-	-	13	27	12	45	-	8	-	-	-	-	5	-	-	-	-	-	-	-	120
Black-bellied Plover	78	104	74	3	-	15	74	175	126	-	11	-	-	8	-	5	15	17	-	-	-	-	-	705
Black Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greater Yellowlegs	4	-	2	2	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	12
Lesser Yellowlegs	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
Yellowlegs sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spotted Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whimbrel	-	-	-	-	-	-	36	-	6	-	-	-	-	-	-	-	4	2	-	-	-	-	-	48
Bar-tailed Godwit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Hudsonian Godwit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marbled Godwit	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Wandering Tattler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	11	26
Surf-bird	-	-	-	-	-	150	-	408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	562
Ruddy Turnstone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Turnstone	-	-	-	-	-	1	10	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Western Sandpiper	-	-	-	-	-	17	70	203	1,980	-	270	-	-	1,500	-	1,750	1,500	335	750	-	3,004	2,380	100	13,859
Least Sandpiper	-	-	3	-	-	-	25	36	-	12	-	-	-	-	-	10	-	-	-	-	6	16	-	108
Semipalmated Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESA/WESA/SESA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanderling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pectoral Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dunlin	1	2	10	-	-	20	75	129	206	-	30	-	-	100	-	150	-	60	50	-	5	150	-	988
Rock Sandpiper	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Baird's Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Knot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short-billed Dowitcher	-	-	3	-	-	2	2	16	15	-	-	-	15	-	20	10	26	8	-	10	-	-	-	127
Long-billed Dowitcher	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Dowitcher sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilson's Snipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red-necked Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other (solitary sandpiper)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	87	110	95	5	-	67	436	572	2,832	-	335	-	-	1,623	-	1,938	1,530	442	812	-	3,029	2,561	116	16,590

SITE : Mud Bay																								
Supplemental Observations																								
SPECIES	April					May														Total				
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17
Semipalmated Plover	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Killdeer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
American Golden-Plover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific Golden Plover	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	17
Black-bellied Plover	78	96	74	-	-	-	63	98	110	-	1	-	-	8	-	-	15	17	-	-	-	-	-	560
Black Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greater Yellowlegs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lesser Yellowlegs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yellowlegs sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spotted Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whimbrel	-	-	-	-	-	-	36	-	6	-	-	-	-	-	-	-	4	2	-	-	-	-	-	48
Bar-tailed Godwit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Hudsonian Godwit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marbled Godwit	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Wandering Tattler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surf-bird	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ruddy Turnstone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Turnstone	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Western Sandpiper	-	-	-	-	-	40	3	1,800	-	270	-	-	1,500	-	550	1,500	250	750	-	3,000	2,350	100	12,113	
Least Sandpiper	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
Semipalmated Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESA/WESA/SESA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanderling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pectoral Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dunlin	1	2	10	-	-	40	9	150	-	30	-	-	100	-	50	-	60	50	-	5	150	-	657	
Rock Sandpiper	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Baird's Sandpiper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Knot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short-billed Dowitcher	-	-	2	-	-	1	12	15	-	-	-	-	15	-	20	10	26	8	-	10	-	-	-	119
Long-billed Dowitcher	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Dowitcher sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilson's Snipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red-necked Phalarope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	79	99	86	-	-	-	193	133	2,103	-	301	-	-	1,623	-	620	1,530	357	812	-	3,015	2,500	100	13,551

SITE : Mariner Park Lagoon		Supplemental Observations																						
SPECIES	April							May										Total						
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11		12	13	14	15	16	17
Semipalmated Plover																								5
Killdeer																								-
American Golden-Plover																								-
Pacific Golden Plover																								-
Black-bellied Plover																								-
Black Oystercatcher																								-
Greater Yellowlegs			1	1						1					2									5
Lesser Yellowlegs															2									2
Yellowlegs sp.																								-
Spotted Sandpiper																								-
Whimbrel																								-
Bar-tailed Godwit																								-
Hudsonian Godwit																								-
Marbled Godwit																								-
Wandering Tattler																								-
Surfbird																								-
Ruddy Turnstone																								-
Black Turnstone																								-
Western Sandpiper																								-
Least Sandpiper			3							16				12								300		30
Semipalmated Sandpiper																							6	37
LESA/WESA/SESA																								-
Sanderling																								-
Pectoral Sandpiper																								-
Dunlin																								-
Rock Sandpiper																								-
Baird's Sandpiper																								-
Red Knot																								-
Short-billed Dowitcher																								-
Long-billed Dowitcher																								-
Dowitcher sp.																								-
Wilson's Snipe																								-
Red Phalarope																								-
Red-necked Phalarope																								-
Other																								-
Total	-	3	1	1	-	-	-	-	-	22	-	16	-	-	-	-	300	-	-	-	-	-	36	379

SITE : Mid-Spit		Supplemental Observations																						
SPECIES	April							May										Total						
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11		12	13	14	15	16	17
Semipalmated Plover																3						4	1	8
Killdeer																								-
American Golden-Plover																								-
Pacific Golden Plover	4		6			13	15	12	45		8													103
Black-bellied Plover		8		3		15	11	77	16		10					5								145
Black Oystercatcher																								-
Greater Yellowlegs	4		1	1						1														7
Lesser Yellowlegs																								-
Yellowlegs sp.																								-
Spotted Sandpiper																								-
Whimbrel																								-
Bar-tailed Godwit																								-
Hudsonian Godwit																								-
Marbled Godwit																								-
Wandering Tattler																								-
Surfbird																								-
Ruddy Turnstone																								-
Black Turnstone										1														1
Western Sandpiper						17	30	200	180							900		85			4			1,416
Least Sandpiper								25								10					6	10		51
Semipalmated Sandpiper																								-
LESA/WESA/SESA																								-
Sanderling																								-
Pectoral Sandpiper																								-
Dunlin						20	35	120	4						100									279
Rock Sandpiper																								-
Baird's Sandpiper																								-
Red Knot																								-
Short-billed Dowitcher				1		2	1	4																8
Long-billed Dowitcher																								-
Dowitcher sp.																								-
Wilson's Snipe																								-
Red Phalarope																								-
Red-necked Phalarope																								-
Other																								-
Total	8	8	8	4	-	67	92	439	246	-	18	-	-	-	-	1,018	-	85	-	-	-	14	10	1 2,018

SITE : Outer Spit		Supplemental Observations																						
SPECIES	April							May										Total						
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11		12	13	14	15	16	17
Semipalmated Plover																								-
Killdeer																								-
American Golden-Plover																								-
Pacific Golden Plover																								-
Black-bellied Plover																								-
Black Oystercatcher																								-
Greater Yellowlegs																								-
Lesser Yellowlegs																								-
Yellowlegs sp.																								-
Spotted Sandpiper																								-
Whimbrel																								-
Bar-tailed Godwit																								-
Hudsonian Godwit																								-
Marbled Godwit																								-
Wandering Tattler																								-
Surfbird								150			408											15	11	26
Ruddy Turnstone																								-
Black Turnstone								1			1													2
Western Sandpiper																								-
Least Sandpiper																								-
Semipalmated Sandpiper																								-
LESA/WESA/SESA																								-
Sanderling																								-
Pectoral Sandpiper																								-
Dunlin																								-
Rock Sandpiper																								-
Baird's Sandpiper																								-
Red Knot																								-
Short-billed Dowitcher					</																			

Appendix F

Session #1

2012 Kachemak Bay Shorebird Monitoring Project

On Saturday, April 14th the Kachemak Bay Birders had its first shorebird monitoring session for this season. Twelve observers made observations for two hours (9:30-11:30 am) at six sites in the Homer Spit area. Sites on the Spit included Mud Bay, Mariner Park Lagoon, Mid-Spit, and the Outer Spit (boat harbor area). Other sites were Beluga Slough and, by boat from 10 am till noon, the Islands and Islets (Gull Island, Neptune Bay, Sixty-foot Rock, and Cohen Island) on the south side of the Bay.

The only shorebirds seen were 2 Rock Sandpipers; one on Sixty-foot Rock and the other on Cohen Island. Thousands of Rock Sandpipers were seen in the area up to a couple of days ago. Apparently, the nice weather beckoned them on.

But some migrant shorebirds have arrived in the area. A pair of Greater Yellowlegs was seen at Mud Bay on Thursday. On Friday, eight Black-bellied Plovers were seen in the same area. Also some Wilson 's snipe were seen the past couple of days inland from the beach.

Other monitoring observations include 1 Emperor Goose and 8 Northern Pintails at Mud Bay. Also, Michael saw 6 geese flying over Mariner Park Lagoon that he was able to get in his spotting scope and identify as Dusky Canada Geese; common in parts of Prince William Sound but not Kachemak Bay. A Northern Harrier was also seen at this site. Typical species also seen included Mallards, Bufflehead, Long-tailed Duck, Black, White-winged and Surf Scoters, Glaucous-winged, Herring, and Mew Gulls, Pelagic Cormorant, Bald Eagle, Rock Pigeons and Northwestern Crow. Carol found a dead Yellow-billed Loon.

Weather conditions at the airport at 8:53 am were cloudy with a temperature of 36° and a NE wind at 6 mph. At 10:53 am, the temperature was 42° with winds from the NE at 9 mph. As usual, it was windier on the Spit then at the airport. The weather station at the harbor registered winds at 21 mph at 9:00 am and 24 mph at 11:00 am. Some of the intertidal lagoons still had cakes of ice and snow was still present in the supratidal area.

On Sunday, a Dowitcher sp. Was seen at Mud Bay.

Next report in 5 days. My guess is that this nice weather the past few days will bring in some migrants.

George Matz

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Session #2

2012 Kachemak Bay Shorebird Monitoring Project

On Thursday, April 19 the Kachemak Bay Birders had its second shorebird monitoring session for this season. Fourteen volunteers made observations for two hours (4:00 - 6:00 pm) at five sites on Homer Spit and Beluga Slough. Karl wasn't able to visit the islands and islets on the south side of the Bay

The initial wave of shorebird migrants (yellowlegs and plovers) has arrived. This is a little later than previous years, but given that snow banks and cakes of ice persist in the some places, it's probably a good choice by the shorebirds. Two PACIFIC GOLDEN-PLOVERS were seen at Mud Bay, a GREATER and LESSER YELLOWLEGS was seen at Mariner Park Lagoon, 2 GREATER YELLOWLEGS were seen flying over the mid-Spit area, no shorebirds were seen at the outer Spit, and a flock of 11 LESSER YELLOWLEGS were seen at Beluga Slough. The day before, there was a male and 2 female BLACK-BELLIED PLOVERS roosting in the mid-Spit area at high tide with a DUNLIN still in basic plumage hanging out with them.

Other birds seen recently in the area include the usual eagles, crows and gulls as well as a flock of migrating BONAPARTE'S GULL. In addition to the waterfowl here through the winter, migrants present include GREEN-WINGED TEAL, AMERICAN WIDGEON, BUFFLEHEAD, and NORTHERN PINTAIL. EURASIAN WIDGEONS were reported a couple of days ago at Beluga Slough, but not seen during monitoring. The EMPEROR GOOSE is still here. A SHORT-EARED OWL was seen flittering around the mid-Spit intertidal area.

Weather conditions at the airport at 3:53 pm were sunny skies with a balmy temperature of 50° and a W wind at 5 mph. At 5:53 pm, the temperature was 49° with SW winds at 9 mph.

Next report in 5 days.

George Matz

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Session #3
2012 Kachemak Bay Shorebird Monitoring Project

On Tuesday, April 24 the Kachemak Bay Birders had its third shorebird monitoring session for this season. Fourteen volunteers made observations for two hours (6:30 - 8:30 pm) at five sites on Homer Spit and Beluga Slough. Karl's boat wasn't able to go out because of a Coast Guard inspection.

Things are perking up. New shorebirds are arriving. As usual, the hot spot was Mud Bay. Observers there saw 3 PACIFIC GOLDEN PLOVER, 66 BLACK-BELLIED PLOVER, 1 LESSER YELLOWLEGS, 2 LEAST SANDPIPER, and 5 DUNLIN. On the other side of the Spit Road at Mariner Park Lagoon observers saw 12 GREATER YELLOWLEGS. At mid-Spit another 10 GREATER YELLOWLEGS were seen. Because we keep track of when shorebirds come and go from a site, we know these weren't the same yellowlegs as seen at Mariner Park Lagoon. At Beluga Slough, an additional 5 GREATER YELLOWLEGS were seen.

Other birds seen included mostly waterfowl. Beluga Slough had the best showing with ABOUT 50 GREATER WHITE-FRONTED GOOSE, 10 AMERICAN WIDGEON, 40 NORTHERN PINTAIL, 20 GREEN-WINGED TEAL, 4 BUFFLEHEAD, 4 MALLARD, and 2 NORTHERN SHOVELER. About 60 CANADA GOOSE flew over Beluga Slough and Mud Bay. Also, there were 3 SANDHILL CRANE at Beluga Slough. At mid-Spit they saw BRANT, RED-BREASTED MERGANSER, SURF SCOTER, BUFFLEHEAD, NORTHERN PINTAIL, NORTHERN SHOVELER, MALLARD, and COMMON LOON. In addition, all sites had the usual presence of MEW and GLACIOUS-WINGED GULLS, NORTHWESTERN CROW, and BALD EAGLE.

Weather conditions at the airport at 5:53 pm were partly cloudy skies with a SW wind at 14 mph. At 8:53 pm, the wind was from the W at 6 mph and the temperature was 40°.

Next report in 5 days.

George Matz

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The last two days I have been checking between scheduled monitoring sessions the presence of shorebirds at the Homer Spit. Here is a review for the last two days.

Plovers

After seeing more than 100 BLACK-BELLIED PLOVERS last week, the count dropped to just a few, but started building again with our last monitoring session (Sunday) when we saw 25 on the Spit. Today (Tuesday) I counted 74. Seems as if another pulse is underway.

A flock of PACIFIC GOLDEN-PLOVERS have been foraging in the supratidal zone at Louie's Lagoon for the past few days. Their numbers went from 13 yesterday to 15 today. In addition, it appears that a new flock of about 12 were in Mud Bay.

Yellowlegs

One GREATER YELLOWLEGS was seen at Mariner Park Lagoon

Whimbrel

A FOS was a flock of 36 WHIMBREL that landed at Mud Bay today just after high tide. They didn't stay long, but hopefully are still in the area.

Surfbirds and Turnstones

As reported earlier, a lot of SURFBIRDS have arrived, roosting and feeding on the rock jetty that protects the harbor. In fact, they seemed to be arriving during our monitoring on Sunday. Karl had the latest count from a boat and reported 75. I saw at least that many yesterday and was able to get some good photos near the deep water dock (see below). Today there were even more. I counted almost 100 in the photo below taken of the harbor entrance from the deep water dock. There must have been at least 50 more outside the picture, plus small flocks of 10-20 flying around. If anyone wants a good look or good photos of Surfbirds, this is the time and place.

There was also 1 BLACK TURNSTONE on the jetty. There may have been more, but it was hard to tell with so many birds, many hidden by the rocks.

Sandpipers

The number of sandpipers is increasing. DUNLIN have increased from 28 on Sunday to two mixed flocks today (one at Louie's Lagoon and the other at Mud Bay) with a total of about 75 birds. They were hard to count since they were tightly mixed in with WESTERN SANDPIPERS which also seem to be increasing.

Dowitchers

A couple of SHORT-BILLED DOWITCHERS are hanging out with flocks of plovers and sandpipers. I saw 2 today.

George

Homer Spit Update

Today (May 2nd), about 30 minutes before a low high tide (15.3 feet at 12:18 pm) I, and a few other birders, was at Mud Bay. Previously, I stopped at Mariner Park Lagoon where there wasn't even a duck. Most of the shorebirds, gulls, and ducks were huddled together on a shoal, dozing and enjoying the sun. Highlights include;

- A MARBLED GODWIT.
- BLACK TURNSTONES at Mud Bay, which is not their usual hangout.
- An increase in BLACK-BELLIED PLOVERS.
- A ROCK SANDPIPER in breeding plumage.

Details are;

BLACK-BELLIED PLOVER - 98, an increase of 35 over yesterday.

MARBLED GODWIT -1

BLACK TURNSTONE - 9

DUNLIN - 9

WESTERN SANDPIPER - 3

ROCK SANDPIPER -1

SHORT-BILLED DOWITCHER - 12

MEW GULL 30

GLAUCOUS-WINGED GULL - 17

NORTHERN PINTAIL - 6

About 45 minutes later I and Aaron Lang went to Louie's Lagoon, each going on different sides. I didn't have as good of a view as Aaron of the huddle of shorebirds on a shoal, so I am using his numbers.

Details are;

BLACK-BELLIED PLOVER - 77, an increase of 66 over yesterday.

PACIFIC GOLDEN-PLOVER - 12

BLACK TURNSTONE - 1

DUNLIN - 120 (yesterday there were 35)

WESTERN SANDPIPER - 200 (yesterday there were 30)

LEAST SANDPIPER -25

SHORT-BILLED DOWITCHER - 4

MEW GULL - X

GLAUCOUS-WINGED GULL - X

About 30 minutes later I drove on the outer side of the harbor to the jetty at the harbor entrance. Yesterday I saw at least 150 SURFBIRDS on the rocks. Today, I didn't see a one. Aaron, who came later, says he did see five that were barely showing their heads. I would be curious to know what happened to them; did they leave Kachemak Bay or just move around. This many shorebirds should be obvious to boaters on the other side of the bay. If you happened to see a large number today, let me know.

On another note, the BALD EAGLES I reported on two weeks ago that were mating on the piling on the outside NE corner of the harbor definitely seem to be brooding. Given the close and eye level view, this should be a big attraction for tourists this year as well as the shorebird festival.



Update on Homer Surfbirds

Yesterday I submitted a report where I said that I saw no SURFBIRDS on the Homer harbor jetty, even though I saw at least 150 there the day before. Today was another turnabout. I was at the harbor about an hour and a half after high tide and a large flock of shorebirds landed on the outside jetty. I counted about 350 SURFBIRDS, 64 DUNLIN, and 1 BLACK TURNSTONE. It was truly amazing.

Wanting to get some good photos of this, I walked past the security fence and went out on the Deep Water Dock about 25 feet where I had a great view of the birds. After spending about 10 minutes getting some good shots, this official looking comes up to me and says that if I stay there I'm going to jail. I thought Hmm, then I would be able to add JAIL BIRD to my list. But not wanting this for a lifer, I decided to leave, trying to explain to this guy about all the surfers I

was looking at. He just looked and saw the Coast Guard ship in line with where I was aiming my digiscope. I thought this was one of those situations where explanation just makes things worse, so I quickly left. But I got some good shots, I mean photos.

Moving on, I headed down the Spit and saw 4 PACIFIC GOLDEN-PLOVERS by the small parking space at Louie's Lagoon. The sun was just right and I got some good photos of a nearby female. Two flocks of about 20 birds flew by which I think were also PACIFIC GOLDEN-PLOVERS.

From there I went to the Green Timbers parking area and saw 10 PACIFIC GOLDEN-PLOVERS foraging in the high grass. At tideline was a mixed flock of about 180 WESTERN SANDPIPERS, a couple DUNLIN, and 16 BLACK-BELLIED PLOVERS.

By the time I got to Mud Bay it was about 3 hours after high tide and all the shorebirds were way out there. There was a large flock of about 1,500 that I assume were WESTERN SANDPIPERS. I got an email from Aaron Lang who was at Mud Bay before high tide he estimated there were 1,800 Westerns and 150 DUNLIN. In addition he had 15 SHORT-BILLED DOWITCHERS, 6 WHIMBREL, 1 MARBLED GODWIT, 1 SEMIPALMATED PLOVER, and 20 LEAST SANDPIPER. He also saw about 1,000 SURFBIRDS fly down the Spit.

Tomorrow we have scheduled monitoring. Should be a great day if you stay out of

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Session #4
2012 Kachemak Bay Shorebird Monitoring Project

Winds of Change

On Sunday, April 29 the Kachemak Bay Birders had its fourth shorebird monitoring session for this season. Eighteen volunteers made observations for two hours (8:15 - 10:15 am) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay.

After 10 days of mostly sunny weather with no rain or snow and high temperatures soaring into the mid 40s and 50s, it was time for change. Saturday, chilly clouds blew in and shorebirds flew out. A quick trip down the Spit Saturday evening found just 3 BLACK-BELLIED PLOVER in the mid-Spit area. The previous monitoring session last Tuesday saw 66 at Mud Bay. Spot checks on the Spit from Wednesday through Friday found 78, 106, and 74 BLACK-BELLIED PLOVER respectively. Below is a photo of some of these birds (or see George Matz file if you are on AKBirding).

But, while the stiff 15-20 mph East wind all Saturday afternoon and evening may have blown some shorebirds out, it also blew some in. Saturday evening, 10 SURFBIRD were resting on the rocks at the harbor entrance. And more birds, taking advantage of the tail wind, might arrive the next morning.

Sunday was a banner day. Here is a site by site breakdown on shorebirds. Note that LESA/WESA/SESA is a lumping category we use for unidentified sandpipers, usually because they are flying over or too far away to identify with any certainty.

Mud Bay:

BLACK - BELLIED PLOVER - 6
LESSER YELLOWLEGS - 1
WESTERN SANDPIPER - 65
LEAST SANDPIPER - 4
DUNLIN - 9
SHORT-BILLED DOWITCHER - 1

Mariner Park Lagoon:

BLACK - BELLIED PLOVER - 2
GREATER YELLOWLEGS - 9
LESSER YELLOWLEGS - 1
WESTERN SANDPIPER - 8

Mid-Spit:

SEMIPALMATED PLOVER - 2
PACIFIC GOLDEN PLOVER - 9
BLACK - BELLIED PLOVER - 15
GREATER YELLOWLEGS - 5
WESTERN SANDPIPER - 21
LEAST SANDPIPER - 4
LESA/WESA/SESA - 13
SANDERLING - 1
DUNLIN - 9

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 2
BLACK - BELLIED PLOVER - 2
SURFBIRD - 40
WESTERN SANDPIPER - 20
LEAST SANDPIPER - 1
DUNLIN - 10

Beluga Slough:

BLACK - BELLIED PLOVER - 2
GREATER YELLOWLEGS - 3
LESA/WESA/SESA - 5

Islands and Islets:

SURFBIRD - 83 (8 on Gull Island and 75 on 60 Foot Rock)
BLACK TURNSTONE - 3 (1 on Gull Island and 2 on 60 Foot Rock)

In addition, on leaving the harbor Karl saw 75 SURFBIRD and 2 BLACK TURNSTONE on the outside jetty. Also, 2 BLACK OYSTERCATCHER were seen Friday.

Other birds seen in addition to the usual waterfowl, gulls, eagles and crows, include LAPLAND LONGSPUR (1 seen at Beluga Slough and 6 at Green Timbers in the mid-Spit area). We also saw about 80 GREATER WHITE-FRONTED GOOSE come in for a landing at Beluga Slough (probably after a long night of flying), land and then begin feeding voraciously. They were later joined by another flock of about 60 geese.

In previous years, I have watched flocks of these geese numbering in the hundreds fly in from upper Kachemak Bay and then land at Beluga Lake, next to the airport. Their approach was about the same as that used by planes. I have tried to find out if the FAA warns pilots about these situations. One comment I had from someone familiar with airport operations is that the geese can easily be picked up by radar, but add a lot of noise, making it harder to track planes. So the FAA squelches the radar signal to eliminate this "noise". Does anyone know how the FAA in Alaska handles detecting large flocks of migrating birds?

Weather conditions Sunday at the airport were as follows. At 7:53 am it was overcast with the wind from the E at 6 mph and 41°. At 10:53 am it was still overcast but clearing, calm and 44°.

Next report in 5 days.

George Matz

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Session #5
2012 Kachemak Bay Shorebird Monitoring Project

Shorebirds Galore

On Friday, May 4th the Kachemak Bay Birders had its fifth shorebird monitoring session for this season. Eighteen volunteers made observations for two hours (3:45 - 5:45 pm) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay. In addition, two volunteers did what we call calibration monitoring. At the same time they covered all sites on the Spit similar to the approach used by George West. This will allow us a closer comparison with his data from 1986-1994. However, since their results essentially duplicate other observations, they will not be included below.

Our monitoring session last Sunday saw the arrival of a few WESTERN SANDPIPERS, the species of greatest abundance for Kachemak Bay's spring shore bird migration. This session they were at all sites on the Spit in large numbers. In addition, there was a big increase in PACIFIC GOLDEN-PLOVERS and five new species arrivals; WHIMBREL, MARBLED GODWIT and BAR-TAILED GODWIT on the Spit plus BLACK OYSTERCATCHER and RED-NECKED PHALAROPE on the south side of the Bay. Spring migration is in full swing and the weather has been really cooperative. The Kachemak Bay Shorebird Festival next weekend should be a good time for birds and birders like.

Weather conditions Friday at the airport were the same throughout the monitoring session. Winds were calm, skies were mostly cloudy overcast, and the temperature stayed at 43°.

Here is a site by site breakdown of observations.

Mud Bay:

BLACK - BELLIED PLOVER - 27
MARBLED GODWIT - 7
WESTERN SANDPIPER - 2,000
DUNLIN - 200
SHORT-BILLED DOWITCHER - 18

Mariner Park Lagoon:

PACIFIC GOLDEN-PLOVER - 5
GREATER YELLOWLEGS - 1
WESTERN SANDPIPER - 14
LEAST SANDPIPER - 9
LESA/WESA/SESA - 14
DOWITCHER - 2

Mid-Spit:

SEMIPALMATED PLOVER - 6
PACIFIC GOLDEN-PLOVER - 68
BLACK-BELLIED PLOVER - 133
GREATER YELLOWLEGS - 2
WHIMBREL - 2
BLACK TURNSTONE - 10
WESTERN SANDPIPER - 601
LESA/WESA/SESA - 30
DUNLIN - 34
SHORT-BILLED DOWITCHER - 21
DOWITCHER - 17

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 1
BLACK-BELLIED PLOVER - 80
BAR-TAILED GODWIT - 1
SURFBIRD - 500
BLACK TURNSTONE - 2
WESTERN SANDPIPER - 500
DUNLIN - 23
ROCK SANDPIPER - 1
SHORT-BILLED DOWITCHER - 21
LONG-BILLED DOWITCHER - 1

Karl Stoltzfus, while on his way out of the harbor a RUDDY TURNSTONE at the jetty in addition to all the other shore birds seen by observers for this site.

Beluga Slough:

PACIFIC GOLDEN-PLOVER - 2

GREATER YELLOWLEGS - 2

LESA/WESA/SESA - 22

Islands and Islets:

BLACK OYSTERCATCHER - 4

RED-NECKED PHALAROPE - 500

Other birds seen in addition to the usual waterfowl, gulls, eagles and crows, include a SHORT-EARED OWL at Louie's Lagoon and a pair of TRUMPETER SWANS that were seen flying in the mid-Spit area as well as Beluga Slough. As usual, Beluga Slough had more waterfowl than shorebirds, including a EURASIAN WIDGEON, a mixed flock of about 150 GREATER WHITE-FRONTED and CACKLING GEESE. There were 6 BONAPARTE'S GULLS here also.

To get some idea as to what happens between monitoring sessions, the next day Michelle and I covered all four sites starting when the receding tide was at 15.0 feet. At Mariner Park Lagoon we saw 2 GREATER YELLOWLEGS, 2 LESSER YELLOWLEGS, and 12 LEAST SANDPIPER. Mud Bay had only 1 BLACK - BELLIED PLOVER and a flock of about 300 sandpipers that were 90% WESTERN'S and 10% DUNLIN. Louie's Lagoon had 8 PACIFIC GOLDEN-PLOVER. Obviously, many shorebirds have departed the area, headed for their breeding grounds. Any large numbers of shorebirds on the Spit in the next day or two will be new arrivals.

Next report in 5 days.

George Matz

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Session #6

2012 Kachemak Bay Shorebird Monitoring Project

An Incredible Number of Sandpipers and Surfbirds

On Wednesday, May 9th the Kachemak Bay Birders had its sixth shorebird monitoring session for this season. Sixteen volunteers made observations for two hours (7:15 am - 9:15 am) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay. In addition, one volunteer covered the entire Spit to provide calibration monitoring.

Our starting time for monitoring is based on when the outgoing tide approaches 15.0 feet using Seldovia tide tables. This has given us the best opportunity for viewing shorebirds. At higher tides, like today with a 20.7 foot tide at 5:06 this morning, shorebirds tend to leave the area for

awhile. When they return, some shorebirds (especially sandpipers) follow the tide line while foraging and by low tide are too far away to identify.

On Tuesday evening I went to the Spit while water from a 19.3 foot tide still covered the intertidal area. About an hour and a half after high tide, when the muddy intertidal area was first becoming exposed, a large flock of sandpipers (mostly WESTERN SANDPIPERS with some DUNLIN) arrived. As the tide continued to drop, more arrived until there were about 1,600 birds in the flock. In addition, 8 BLACK-BELLIED PLOVERS and 15 SHORT-BILLED DOWITCHERS arrived and began foraging in the mud. I went home with the feeling that more shorebirds would arrive before our next monitoring session early Wednesday morning.

My hopes were fulfilled. Wednesday morning thousands of sandpipers were everywhere. In addition, there were thousands of SURFBIRDS at Gull Island, but just 1 at the boat harbor where we have been seeing hundreds. Most of the plovers have apparently moved on. Here is a site by site breakdown of observations.

Mud Bay:

SEMIPALMATED PLOVER - 2
BLACK - BELLIED PLOVER - 10
GREATER YELLOWLEGS - 1
WHIMBREL - 1
BAR-TAILED GODWIT - 1
WESTERN SANDPIPER - 4,500
LEAST SANDPIPER - 6
DUNLIN - 500
DOWITCHER - 21

Mariner Park Lagoon:

PACIFIC GOLDEN-PLOVER - 1
GREATER YELLOWLEGS - 2
LEAST SANDPIPER - 17
LESA/WESA/SESA - 55

Mid-Spit:

SEMIPALMATED PLOVER - 24
GREATER YELLOWLEGS - 1
WESTERN SANDPIPER - 1,150
LEAST SANDPIPER - 25
LESA/WESA/SESA - 460
DUNLIN - 132
SHORT-BILLED DOWITCHER - 2

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 4
BLACK-BELLIED PLOVER - 1
SURFBIRD - 1

WESTERN SANDPIPER - 793
DUNLIN - 2

Beluga Slough:

GREATER YELLOWLEGS - 2
WESTERN SANDPIPER - 180
LEAST SANDPIPER - 2
LESA/WESA/SESA - 200
DUNLIN - 20

Islands and Islets:

BLACK OYSTERCATCHER - 2
SURFBIRD - 2,000
BLACK TURNSTONE -1

The SURFBIRD count is a rough estimate since it was very difficult to view all the birds given the many nooks and crannies in the rocks at Gull Island. This is more than has been seen in recent years, but not as many as reported by George West who had an average of 11,403 SRFBIRDS per year during his monitoring from 1986-1994.

As expected, the volunteer covering the entire Spit saw fewer birds than the more intense effort by those covering just a site. Here are the results followed by the total for all the Spit sites.

SEMIPALMATED PLOVER - 6 and 20
BLACK-BELLIED PLOVER - 8 and 11
GREATER YELLOWLEGS - 1 and 4
WESTERN SANDPIPER - 3,399 and 6,443
LESA/WESA/SESA - 10 and 515
DUNLIN - 331 and 664
SHORT-BILLED DOWITCHER - 10 and 2

But this observer also saw 4 WANDERING TATTLER within the boat harbor.

Other birds seen in addition to the usual waterfowl, gulls, eagles and crows, that should be of interest to shorebird festival attendees include a male COMMON TEAL seen briefly at the Mariner park Lagoon viewing platform, a flock of about 24 BRANDT, and some LAPALND LONGSPURS.

Next report in 5 days.

George Matz

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Session #7
2012 Kachemak Bay Shorebird Monitoring Project

Sandpiper Pulses

On Monday, May 14th the Kachemak Bay Birders had its seventh shorebird monitoring session for this season. Fourteen volunteers made observations for two hours (10:30 am - 12:30 pm) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay. In addition, one volunteer covered the entire Spit to provide calibration monitoring.

This past week has been very interesting. For our last session (Wednesday morning) I reported the arrival of a large number of shorebirds. We saw a total of about 8,116 shorebirds on the Spit and nearby Beluga Slough (mostly WESTERN SANDPIPERS and DUNLIN). On the water 2003 shorebirds were seen, nearly all SURFBIRDS. The weather at the time was calm and sunny; very spring like (at least for Homer).

That afternoon conditions changed drastically. It got cloudy, colder and we had rain and snow; back to winter. These conditions, intermittent with short stretches of nice weather, lasted until Sunday. Shorebird counts dropped substantially. Between monitoring sessions, I made some quick trips to the Spit after high tide and found about 1,800 shorebirds on Thursday, 1,500 on Friday, 400 on Saturday, and 900 on Sunday. Obviously, birds were departing and not much, if anything, was taking their place. Was this it for the year? Unfortunately, this trough of weather and shorebirds coincided with the shorebird festival. However, it was still a great shorebird festival; the highlight probably being the BRISTLE-THIGHED CURLEWS at Anchor Point.

Then Sunday evening a high pressure system moved in (see * below). Skies cleared and our Monday morning session enjoyed sunnier and warmer weather. Relatively calm winds (8 mph) were from the North and West and temperatures during the session started at 43° and warmed to 46°. But what we mostly enjoyed was another pulse of sandpipers. On the Spit and Beluga Slough we counted about 6,703 shorebirds. Obviously, most of these were new arrivals. On the water, Karl counted 350 shorebirds; once again mostly SURFBIRDS. Below is a breakdown by site.

Mud Bay:

SEMIPALMATED PLOVER - 8
WHIMBREL - 5
BAR-TAILED GODWIT - 2
WESTERN SANDPIPER - 4,000
LEAST SANDPIPER - 6
PECTORAL SANDPIPER - 1
DUNLIN - 40
DOWITCHER - 12

Mariner Park Lagoon:

SEMIPALMATED PLOVER - 8
WESTERN SANDPIPER - 500
LEAST SANDPIPER - 10
SEMIPALMATED SANDPIPER - 5
DUNLIN - 5

Mid-Spit:

SEMIPALMATED PLOVER - 24
PACIFIC GOLDEN-PLOVER - 4
BLACK-BELLIED PLOVER - 4
YELLOWLEGS - 1
WHIMBREL - 3
BLACK TURNSTONE - 6
WESTERN SANDPIPER - 1,303
LEAST SANDPIPER - 10
SEMIPALMATED SANDPIPER - 5
LESA/WESA/SESA - 250
DUNLIN - 144
DOWITCHER - 9

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 10
BLACK-BELLIED PLOVER - 2
WANDERING TATTLER - 4
RUDDY TURNSTONE - 1
BLACK TURNSTONE - 9
WESTERN SANDPIPER - 100
LEAST SANDPIPER - 4
SEMIPALMATED SANDPIPER - 20
LESA/WESA/SESA - 45
DUNLIN - 1

Beluga Slough:

SEMIPALMATED PLOVER - 1
GREATER YELLOWLEGS - 2
WESTERN SANDPIPER - 125
DUNLIN - 3
SHORT-BILLED DOWITCHER - 11

Islands and Islets:

BLACK OYSTERCATCHER - 1 (Cohen Island)
WANDERING TATTLER - 1 (Gull Island)
SURFBIRD - 256 (Gull Is. 200, China Poot Bay 45, 60 Foot Rock 10, Cohen Island 1)
BLACK TURNSTONE - 39 (Gull Is. 14, China Poot Bay 17, 60 Foot Rock 4, Cohen Island 4)
ROCK SANDPIPER - 3 (Gull Island)
RED-NECKED PHALAROPE - 500

With the exception of two more species, the volunteer who covered the entire Spit had numbers similar to the above, which will be used for further analysis but left out of this report so as to not inundate you with numbers. The other species observed were 1 RED KNOT and 1 RED-NECKED PHALAROPE.

This monitoring session clearly illustrates how weather conditions can drastically change shorebird observations. It's really interesting how the arrival and departure of shorebirds this past week in Kachemak Bay corresponded with barometric pressure.

* You can see a nice graph of these weather conditions at [http://data.aos.org/maps/sensors/#l=sensor-stations\[a:14028;b:9\]&b=59.99241178252861,-153.944270833333,59.26477640542328,-149.000423177083](http://data.aos.org/maps/sensors/#l=sensor-stations[a:14028;b:9]&b=59.99241178252861,-153.944270833333,59.26477640542328,-149.000423177083)

Next report in 5 days.

George Matz

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Session #8
2012 Kachemak Bay Shorebird Monitoring Project

Grand Finale

On Saturday, May 19th the Kachemak Bay Birders had its eighth shorebird monitoring session for this season. Fifteen volunteers made observations for two hours (4:00 pm - 6:00 pm) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay. In addition, one volunteer covered the entire Spit to provide calibration monitoring.

This isn't our last session (we have a close-out session in five days), but it is essentially the end of another glorious spring shorebird migration for Kachemak Bay. The number of shorebirds dropped off substantially, but there still is a lot of diversity. We had our first AMERICAN GOLDEN-PLOVER and BAIRD'S SANDPIPER for this year.

As a side bar, on Tuesday Glenn and Bette Seaman saw about 50 SANDERLINGS on the ocean side of Mariner Park Lagoon. These intrepid shorebirds nest in the High Arctic and, accordingly, are about last to arrive. They are the caboose in this long train of migrating shorebirds spread across the Pacific Flyway.

Here are our results for this session.

Mud Bay:
SEMIPALMATED PLOVER - 5
AMERICAN GOLDEN-PLOVER - 1
BLACK-BELLIED PLOVER - 1
YELLOWLEGS - 1
MARBLED GODWIT - 1
WESTERN SANDPIPER - 250
DUNLIN - 43
DOWITCHER - 10

Mariner Park Lagoon:

GREATER YELLOWLEGS - 1
WESTERN SANDPIPER - 57
SEMIPALMATED SANDPIPER - 3
BAIRD'S SANDPIPER - 6
DOWITCHER - 4

Mid-Spit:

SEMIPALMATED PLOVER - 21
BLACK-BELLIED PLOVER - 2
WESTERN SANDPIPER - 155
LEAST SANDPIPER - 2
SEMIPALMATED SANDPIPER - 2
SANDERLING - 4
DUNLIN - 4

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 1
WANDERING TATTLER - 3
WESTERN SANDPIPER - 3
SEMIPALMATED SANDPIPER - 3
SANDERLING - 3

Beluga Slough:

SEMIPALMATED PLOVER - 2
GREATER YELLOWLEGS - 2
WHIMBREL - 8
WESTERN SANDPIPER - 12
SHORT-BILLED DOWITCHER - 2
RED-NECKED PHALAROPE - 1

Islands and Islets:

BLACK OYSTERCATCHER - 1 (Cohen Island)

Other birds of interest include about a dozen SMITH'S LONGSPURS at Mariner Park Lagoon, 2 BRANT at Green Timbers, and a pair of GADWALL at Beluga Slough.

Weather conditions at 3:53 pm were winds E at 15 mph with gusts to 23 mph, overcast, and temperature of 51°. At 5:53 pm conditions were winds N at 15 mph with gusts to 18 mph, overcast, and temperature at 49°.

Next report in 5 days.

George Matz



Session #9

2012 Kachemak Bay Shorebird Monitoring Project

Stragglers

On Thursday, May 24th the Kachemak Bay Birders had its ninth and final shorebird monitoring session for this season. Sixteen volunteers made observations for two hours (7:00 pm - 9:00 pm) at four sites on the Homer Spit as well as Beluga Slough and the Islands/Islets on the south side of the Bay. Once again, the weather was pleasant. Conditions at the airport when we started were; winds from the W at 12 mph, partly cloudy, and a temperature of 51°. At the end of the session conditions were; winds from the SE at 3 mph, clear, and temperature at 52°.

Although the number of migrating shorebirds has dropped off precipitously, there are still a few stragglers. Nevertheless, we heard our first WILSON'S SNIPE for this year's monitoring session, which is a bit of a surprise since there are so many just a bit inland. We also had our first SPOTTED SANDPIPER, which seems to prefer freshwater lakes and rivers. Many of the SEMIPALMATED PLOVERS and GREATER YELLOWLEGS are probably not migrants, but will nest in the area.

Here are our results for this session.

Mud Bay:

SEMIPALMATED PLOVER - 1

WHIMBREL - 2

Mariner Park Lagoon:

WHIMBREL - 2

WILSON'S SNIPE - 1

Mid-Spit:

SEMIPALMATED PLOVER - 16

GREATER YELLOWLEGS - 2

WANDERING TATTLER - 6

WESTERN SANDPIPER - 8

DUNLIN - 24

DOWITCHER - 1

Outer Spit (Lands End, harbor, and fishing hole):

SEMIPALMATED PLOVER - 4

SPOTTED SANDPIPER - 1

WANDERING TATTLER - 4

SURFBIRD - 1

RUDDY TURNSTONE - 1

Beluga Slough:

PACIFIC GOLDEN-PLOVER - 1

BLACK-BELLIED PLOVER - 1

GREATER YELLOWLEGS - 3
WHIMBREL - 5
WESTERN SANDPIPER - 10
LEAST SANDPIPER - 1
SEMIPALMATED SANDPIPER - 1
DUNLIN - 1

Islands and Islets: (60 Foot Rock)
SURBIRD - 38
BLACK TURNSTONE - 1

Within a few days I send out a preliminary summary of this year's efforts.

George Matz