

Wintering Piping Plover Surveys 2008-2009

Boca Chica, Texas to Marco Island, Florida

December 2, 2008 – March 13, 2009

Final Report, Contract # K4E21-08-0662



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Cover photograph: Lf,OL:X,Y, a Great Plains Canada Piping Plover, photographed by Sidney Maddock on March 8, 2009 at Cat Island, Gulf Island National Seashore, Mississippi.

Summary

Surveys to locate banded Piping Plovers (*Charadrius melodus*) were conducted on the Gulf of Mexico between December 2, 2008, and March 13, 2009. Seventy eight locations were visited from Marco Island in southwest Florida to Boca Chica beach in Texas near the United States border with Mexico. Ninety seven surveys were conducted, and twelve locations in Texas were surveyed two or more times to increase the detectability of banded birds.

There were 3,300 observations of Piping Plovers, with 236 observations in Florida, 50 in Alabama, 172 in Mississippi, 214 in Louisiana, and 2,628 in Texas. There were 397 observations of banded Piping Plovers, about 12% of all observations. There were 44 band observations in Florida, 7 in Alabama, 19 in Mississippi, 32 in Louisiana, and 295 in Texas. By population, 170 of the banded Piping Plover observations were from Great Plains Canada, 176 were from Great Plains United States, 29 were unknown, 22 were from the Great Lakes, and 0 were from Atlantic Canada or Atlantic United States.

Introduction

These surveys were conducted to locate the Piping Plover (*Charadrius melodus*), a small shorebird with a short, stout bill, pale upperparts, and orange legs (Haig 1992). The known wintering range of Piping Plovers includes the Atlantic Coast of the United States, the Gulf Coast of the United States and northern Mexico, and the Bahamas, Cuba, and other Caribbean islands (Ferland and Haig 2002, Elise Elliot Smith et al. 2009).

In Canada and the United States, scientists on the breeding grounds of Piping Plovers have conducted studies that include banding adults, chicks, or both, with a series of unique and non-unique color band and flag combinations. These programs have provided extensive data regarding breeding behaviors. However, it has become apparent that these programs also have generated helpful data regarding non-breeding Piping Plovers, such as wintering locations for the populations. In addition, resightings from the wintering grounds may give a more accurate survival estimate as birds that were not seen during the summer may be detected during winter observations.

This survey effort is a continuation of a series of surveys on the wintering grounds that were initiated by the Canadian Wildlife Service (Stucker et. al. 2003, Maddock 2008).

Methods

The goal of this survey effort was to find and accurately identify banded Piping Plovers wintering on the Gulf of Mexico. Between December 2, 2008 and March 13, 2009, surveys were conducted from Marco Island in southwest Florida (25.96653 -81.74993) to Boca Chica beach in Texas near the United States border with Mexico (25.95377 -97.14883). Most of the known sites on the Gulf with relatively large numbers of Piping Plovers were searched. Some high quality sites were not surveyed if Piping Plover surveys already were being conducted by others, and for a few sites, most notably the Chandeleur Islands, if poor weather conditions prevented access to survey the area.

These surveys followed the methods discussed in Maddock (2008), where more detailed information is provided. Surveys were conducted on foot, by all terrain vehicle, and by four-wheel drive vehicle. Vehicle surveys were conducted at low speed (<10 mph) unless suitable Piping Plover habitat was not present. Particular attention was given to locations where Piping Plovers could be easily missed, such as roosting habitats. When a Piping Plover was seen, a spotting scope was used to scan the legs for color bands. If possible, a picture was taken of the band combination using a high quality digital camera (Canon 1Ds MkIII or 40 D) and high power lens (600mm with 2X converter (1200mm)) to confirm the band locations and colors. The band combination was recorded on written data sheets.

The following abbreviation system identifies the band combination:

- Band location on the leg is listed in the following order: left tibia, left tarsus: right tibia, right tarsus.
- If there were two bands on a tibia or tarsus, the band combination is presented as top band first and bottom band second, with no comma between the bands.
- Band or flag color abbreviations are: R = red, P= pink, G = dark green, g = light green, U=purple, B = dark blue, b = light blue, V = violet, W = white, A = gray, S = salmon, P = Pink, O = orange, Y = yellow, and L = black.
- A split band is indicated with a forward slash (L/A) and a triple split band has two forward slashes (g/O/g); the colors of the split are listed from the top to bottom of the band on the leg.

- Band types are: X for metal band, – for no band, N for not able to observe if a band was present; a single letter means a plastic band unless f is added after the letter, which means flag.

Information on the observed band combination was provided to banders on the breeding grounds in the Great Plains and Great Lakes to confirm the observed combination and the population identification.

Results

Ninety seven surveys were conducted over 70 full or partial field days; 78 different locations were visited. There were 3,300 observations of Piping Plovers. Of those observations, 12% (n=397) were banded Piping Plovers.

Not all observations were of different individuals. Some individuals moved between adjoining survey sites. In addition, in Texas, there were repeat visits to twelve sites to increase the detectability of banded birds, and in Alabama, there was overlap on two survey sites. Thus, some banded birds were seen more than once. While it is possible to identify repeat observations of uniquely marked birds, there also were non-unique band combinations that were observed multiple times.

Table 1 provides a breakdown of surveys, locations, total Piping Plover observations, and band observations by state.

Table 1. Piping Plover Survey Days, Survey Numbers, Survey Locations, Total Observations, and Band Observations By State

State	Survey Days	Surveys	Survey Locations	Total PIPL Observations	Band Observations
Florida	9	16	16	236	44
Alabama	3	5	4	50	7
Mississippi	9	11	11	172	19
Louisiana	10	13	13	214	32
Texas	39	52	34	2,628	295
Total	70	97	78	3,300	397

Table 2 provides a breakdown of banded Piping Plovers by state and population.

Table 2. Piping Plover Band Observations By State and Population

State	Great Plains Canada	Great Plains US	Great Lakes	Unknown	Atlantic Canada or US	Total State
Florida	6	22	14	2	0	44
Alabama	2	5	0	0	0	7
Mississippi	8	7	2	2	0	19
Louisiana	6	20	4	2	0	32
Texas	148	122	2	23	0	295
Total Pop.	170	176	22	29	0	397

Florida

In Florida, sixteen surveys were conducted over nine days; 16 locations were visited. There were 236 observations of Piping Plovers and 44 observations of banded Piping Plovers. By population, 6 observations of banded Piping Plovers were birds from the Canadian Great Plains, 22 from the United States Great Plains, 14 from the Great Lakes, 2 were unknown, and 0 from Atlantic Canada or Atlantic United States.

The 44 band observations represent at least 40 individuals: five birds from the Canadian Great Plains, 20 from the United States Great Plains, and 14 from the Great Lakes. One uniquely marked bird from the U.S. Great Plains, -,LW:Gf,GW was seen on both the north end of Honeymoon Island and Three Rooker Bar, two adjoining islands. One uniquely marked bird from the Canadian Great Plains, -,RY:Wf,OX, and one uniquely marked bird from the U.S. Great Plains, -,WW:Gf,LL, were observed on both Phipps Preserve and the mainland beach just to the north, an interesting movement across the bay.

Another combination, -,-:BX, also was seen on both Honeymoon Island and Three Rooker Bar. From the first observation, this particular combination was identified as a bird that was banded in the Great Lakes, based on photographs of the metal band numbers. The next observation, the metal band was not photographed closely enough to allow identification of the numbers. However, as the bird with this combination was missing the lower right tarsus with the break in a similar location, had an old style metal band, and the two islands are next to each other

separated by only a small inlet, it is likely the observations were of the same bird. While the second observation of this combination is listed as “unknown” in Table 1, the bird likely is from the Great Lakes. Another combination, -,:X,b, with vertical lettering on the joint, was seen at Charley Pass, is listed as “unknown” but likely was from the Great Lakes. The Great Lakes uses this combination and the same style of metal band, and no other banders claimed this combination. However, possible use by other banders could not be ruled out.

The following habitat changes were noted since the 2005-2006 winter surveys for CWS. Vegetative succession covered previously unvegetated areas of roosting or intertidal habitats at Marco Island, Honeymoon Island, and Phipps Preserve. Increases in the area of upland or intertidal habitats were observed at Three Rooker Bar and Anclote Bar, due to accretion. At the other sites, habitat changes were not significant enough to be remembered or noted, or the sites were not previously visited. On North Captiva Island, “Charley Pass” was created by Hurricane Charley in 2004 (Casey Lott, Pers. Comm. 2009). While this site was not previously visited in the 2005-2006 surveys, it now contains high quality habitat Piping Plover, though vegetative succession appears to be occurring, based on a comparison of the Google Earth satellite imagery and habitat conditions during the time of visit.

Alabama

In Alabama, five surveys were conducted over three days. Four locations were visited; however, one of those locations was covered twice as part of a survey of a larger area of habitat on the west end of Dauphin Island.

There were 50 observations of Piping Plovers including seven observations of banded Piping Plovers: two observations of birds from the Canadian Great Plains and five observations of birds from the U.S. Great Plains. Due to resightings of two individuals at adjoining survey locations, five individuals were observed, representing two birds from the Canadian Great Plains and three birds from the U.S. Great Plains.

A significant habitat change was the creation of a new inlet at Dauphin Island in 2005 from Hurricane Katrina. The west end of Dauphin Island was not visited during the 2005-2006 surveys for Canadian Wildlife Service. During this trip, the area was visited and high quality

Piping Plover habitat was seen at either side of the newly created inlet. Another change is that the west end of Pelican Island is no longer separated from Dauphin Island.

One interesting observation was Piping Plovers and large numbers of other shorebirds were using an overwash fan area just east of the west end of the developed area of Dauphin Island; this area was surrounded by buildings to the east and west and a road and buildings to the south. It is possible that the moderately high winds on this day may have caused birds to congregate in this area as an alternative roost during bad weather. When the area was viewed a few days later as part of a larger survey that covered areas of the west end of Dauphin Island, only one Piping Plover was seen in the area, with the others at the inlet spit and scattered along the bay shoreline.

Mississippi

In Mississippi, 11 locations were surveyed over 9 days. There were 172 observations of Piping Plovers, including 19 observations of banded Piping Plovers. Eight observations were of birds from the Canadian Great Plains, seven observations were of birds from the U.S. Great Plains, two observations were from the Great Lakes, and two were unknown. At least 18 of the banded Piping Plovers were different individuals. One non-unique band combination from Great Plains Canada, Lf,-:X,-, was seen on the east end of Petit Bois Island on December 12, 2008, and on the southwest end of Cat Island on March 8, 2009.

High quality Piping Plover habitat was observed in Gulf Islands National Seashore on East Ship Island, Horn Island, Cat Island, and Ship Island. All these islands had areas of overwash, though it was not possible to tell which were from Hurricane Katrina and which were from more recent hurricanes.

Moderate numbers of Piping Plovers were counted on the mainland beaches. These beaches originally were not scheduled for surveys, as the Mississippi Department of Wildlife, Fisheries, and Parks conducts Piping Plover surveys there. However, due to poor weather conditions precluding boat access to the offshore barrier islands in December, mainland beach locations were walked instead, albeit in dense fog that may have influenced the results. Between Waveland and Long Beach, there were 31 observations of Piping Plovers. After Hurricane

Katrina, there was a beach replenishment project for these areas (Nick Winstead, Pers. Comm. 2009). The profile of these replenished beaches in the intertidal area is relatively flat, with moderate areas of intertidal habitat available for feeding at mid and low tides at certain areas. There were activities that could adversely affect Piping Plover use of these beaches, such as the human disturbance as well as the observed practice of raking of the beach to remove wrack. However, the moderately high number of Piping Plovers raises an interesting question whether replenished beaches on the Gulf of Mexico can have design standards that mimic natural beaches and allow regular wintering use by Piping Plovers and other shorebird species.

Louisiana

In Louisiana, 13 locations were surveyed in 10 days. There were 214 observations of Piping Plovers, including 32 banded Piping Plovers. There were six birds from the Canadian Great Plains, 20 birds from the U.S. Great Plains, four from the Great Lakes, and two that were unknown. The 32 banded Piping Plovers that were observed were different individuals.

As in the 2006-2007 surveys, areas of high quality Piping Plover habitat were observed. One area of improvement was the east end of Elmers Island, where the old inlet had closed, providing extensive high quality, low energy feeding habitat on bay-side flood bar and overwash fans. Large numbers of Piping Plovers were present at certain locations, including 30 at West Bell Pass and 53 at the west end of Raccoon Island.

Extensive habitat changes were observed at all of the locations that were previously visited in the 2006-2007 surveys. On September 1, 2008, Hurricane Gustave made landfall near Cocodrie, Louisiana as a Category 2 hurricane with maximum winds near 90 knots (Beven and Kimberlain 2009). In addition, Hurricane Ike, which made landfall at Galveston Island on September 13, 2008 as a Category 2 storm, caused a storm surge of 3-6 feet along Louisiana with 5 – 10 feet along the coast of south-central Louisiana and 10-13 feet in southwestern Louisiana (Berg 2009). These hurricanes caused varying levels of habitat impacts. On East Grand Terre, Grand Terre, Fourchon Beach, and West Belle Pass, moderate to extensive erosion of the Gulf beach backshore occurred. In certain areas, the area between the vegetation and the water was very narrow, with the loss of much of the backshore beach, so higher elevation roosting habitats were reduced. These islands also had new low overwash fans, new intertidal feeding habitats on

the backside of the overwash fans in some areas, and new small inlets on East Grand Terre and West Belle Pass. The high levels of erosion that have been experienced at some locations along the Louisiana coast (Sallenger 2009) raise concerns about loss of piping plover habitat in Louisiana.

Texas

In Texas, 52 surveys were conducted over 39 field days; 34 locations were visited. Twelve locations were surveyed more than once to increase the detectability of banded Piping Plovers that may not have been observed in the first survey. There were 2,628 observations of Piping Plovers, including 295 observations of banded Piping Plovers. There were 148 observations of banded Piping Plovers from the Canadian Great Plains, 122 from the U.S. Great Plains, two from the Great Lakes, and 23 that were unknown.

Of the 75 uniquely marked Great Plains Piping Plovers banded by Dr. Cheri Gratto-Trevor that were observed in Texas, 21 were observed twice. Of those repeat observations, 15 were resightings on a subsequent survey at the same location, one was a movement across an inlet, four were movements along the bayside shoreline across adjoining survey boundaries, and one was a movement from a bayside shoreline at Mollie Beattie Coastal Habitat Community to a shoal in the bay off Mustang Island State Park.

In South and Central Texas, no significant changes to habitat conditions were observed since the prior CWS surveys, other than habitat availability changes due to varying water levels in the Laguna Madre. There was a large flats area exposed west of Mustang Island State Park during the first part of the visit that was flooded during the return visit to Mustang Island. At Boca Chica beach, the water level in interior lagoon area south of the road and west of the beach was very low, with much of the area being exposed, dry flats; when the area was visited one winter ago, that interior lagoon area was almost fully flooded.

In North Texas, there were extensive habitat changes since the 2006-2007 CWS surveys. On September 13, 2008, Hurricane Ike made landfall on Galveston Island as a strong Category 2 storm with winds of 110 mph; on the Bolivar Peninsula, the storm surge was estimated to be between 15 and 20 feet by ground assessment teams (NHC 2009).

On Bolivar Peninsula, Galveston Island, and between San Louis Pass and Surfside, there was extensive erosion of the Gulf backshore roosting habitat; in many locations, areas that previously would have been backshore or vegetated uplands were at or near the elevation of the intertidal beach with scattered new ephemeral ponds. Gulf beach intertidal feeding habitats remained, though their location may have moved landward.

There were several locations where feeding habitats were adversely impacted. At Bolivar Flats, there was extensive erosion of the intertidal feeding habitats. The preferred feeding substrate of sand with a thin top layer of mud or algal growth was missing in large areas and in its place was either a sand substrate in certain areas of the flats or in other areas, the intertidal area was no longer exposed, even at low tide. East of the Town of Gilchrist, the beach was much narrower than in the 2006-2007 survey, with a very limited intertidal area; as a result, a survey was not done at this beach due to limited habitat.

Not all habitat changes from the Hurricane Ike were adverse. Near the western boundary of San Bernard National Wildlife Refuge at Cedar Creek Cut, there were extensive new overwash fans, with large areas of high quality intertidal feeding habitat as well as new areas of roosting habitat. At Rollover Pass, the intertidal feeding habitat appeared larger than when a visit was made to this site in 2006-2007; the area now has large overwash fans on the bayside.

There were several interesting results from the Texas surveys. First, over 100 Piping Plovers were seen on both surveys at Cedar Creek Cut near the western boundary of San Bernard NWR. In contrast, in the 2006-2007 season CWS survey, 24 were seen in the same area (Maddock 2006). The sharp increase may be due to the extensive new flats that were observed.

Second, 239 Piping Plovers were seen during a survey of the west and south sides of South Bay. This area has high quality habitat. However, it may be difficult to locate the Piping Plovers due to how remote and expansive the habitat is in this area. Depending on water levels in the bay, Piping Plovers in this area may move between South Bay on the north side of the road, the south side of the road, and Boca Chica beach.

Third, 344 Piping Plovers were observed on South Padre Island between 26.31659, -97.22882 and 26.34347, -97.26362, a distance of about 2.8 miles of bayside shoreline. Over 200

Piping Plovers were visible in less than 400 yards of shoreline. However, when the survey resumed three days later at this location, Piping Plovers were not observed. The area where the birds were seen previously was under water due to a shift in the wind direction and an increase in the wind speed after a cold front came through the area.

Fourth, sharply lower numbers of Piping Plovers were observed at Bolivar Flats during these surveys. Prior to Hurricane Ike, this location was known for high numbers of Piping Plovers. Due to a concern that wintering banded Piping Plovers might have been missed at this location, this area was surveyed four times, and 0, 17, 83, and 0 Piping Plovers were seen. As discussed above, Hurricane Ike caused the loss and degradation of intertidal feeding habitats at Bolivar Flats. The high count of 83 Piping Plovers was on a day when there were strong northeast winds that would have raised water levels on the bayside habitats and increased the chance of Piping Plovers being present on the Gulf beach. On both days when Piping Plovers were seen at Bolivar Flats, after the tide dropped to a certain level, Piping Plovers were observed flying towards the bay so it is possible that a bayside feeding location was being used.

A serious long term conservation concern is habitat loss on developed areas of the Gulf beach as erosion brings the high tide line closer to existing line of development. At Quintana, Surfside to San Louis Pass, Galveston Island, and Bolivar Peninsula, in certain areas, structures now are located close to the high tide line, reducing the available area of roosting habitat. In contrast, there were areas of beach without buildings – such as the inlet spit at the west end of Galveston Island, or the flats west of San Bernard National Wildlife Refuge – where the hurricane did not adversely affect habitat or increased the size of available habitat. As erosion continues on developed beaches, roosting habitat could be lost. Other conservation concerns were the mechanized raking to remove wrack that was seen in certain locations and high levels of human disturbance and ORV use on certain beaches.

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Table 3. Florida Surveys, Date, Survey Location, Site Access, Survey Method, and Total Number of Piping Plovers and Banded Piping Plovers

Survey	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
1	12/2/08	Honeymoon Island State Park	Boat	Foot	19	4
2	12/2/08	Anclote Key, South End	Boat	Foot	17	3
3	12/3/08	Anclote Bar	Boat	Foot	4	2
4	12/3/08	North Three Rooker Bar	Boat	Foot	8	1
5	12/3/08	Three Rooker Bar	Boat	Foot	45	7
6	12/4/08	St. Joseph Peninsula State Park	Car	ATV/foot	8	0
7	12/5/08	Tyndall – West Crooked Island	Car	UTV/foot	9	1
8	12/5/08	Tyndall – East Crooked Island	Car	UTV/foot	0	0
9	12/6/08	Phipps Preserve	Boat	Foot	29	5
10	12/6/08	Franklin County Shoreline	Boat	Foot	6	3
11	12/6/08	Lanark Reef West	Boat	Foot	12	2
12	12/7/08	Dog Island East	Boat	Foot	4	2
13	3/11/09	Charley Pass, North Captiva Island	Boat	Foot	19	4
14	3/12/09	Estero Lagoon	Car	Foot	7	1
15	3/12/09	Bunche Beach	Car	Foot	11	2
16	3/13/09	Marco Island, Tigertail Beach	Car	Foot	38	7
16 Surveys	9 Days	16 Locations	6 Car 10 Boat	13 Foot 1 ATV/Foot 2 UTV/Foot	236	44

Table 4. Florida Surveys, Banded Piping Plovers

#	Date	Location	Pop.	Band String	Pic.	Lat.	Long.	Notes
1	12/2/2008	Honeymoon Island S.P North	GP US	-,WR:Gf,RG	Y	28.08657	-82.83392	
2	12/2/2008	Honeymoon Island S.P North	GL US	X,O/L:O,-	Y	28.08715	-82.83309	
3	12/2/2008	Honeymoon Island S.P North	GP US	-,LW:Gf,GW	Y	28.08831	-82.83405	
4	12/2/2008	Honeymoon Island S.P North	GL US	-,:-,BX	Y	28.08959	-82.8345	Missing part of left tarsus; ID by metal band number
5	12/2/2008	Anclore Key South	GP US	Gf,GY:-,RG	Y	28.16333	-82.84547	
6	12/2/2008	Anclore Key South	GP US	L/YA,-:Gf,-	Y	28.16424	-82.84637	
7	12/2/2008	Anclore Key South	GL US	Of,GB:X,Y	Y	28.16442	-82.84653	
8	12/3/2008	Anclore Bar	GP C	Lf,Gg:X,Y	Y	28.23413	-82.83791	
9	12/3/2008	Anclore Bar	GP US	-,LL:Gf,LL	Y	28.23234	-82.83984	
10	12/3/2008	North Three Rooker Bar	GL US	Of,YB/O:X,g	Y	28.13014	-82.83088	
11	12/3/2008	Three Rooker Bar	GP US	Gf,WL:-,RR	Y	28.11099	-82.8347	
12	12/3/2008	Three Rooker Bar	GL US	-,gO:X,Y	Y	28.11136	-82.83693	
13	12/3/2008	Three Rooker Bar	GP US	-,LW:Gf,GW	Y	28.11136	-82.83694	
14	12/3/2008	Three Rooker Bar	GL US	X,b/O:O,-	Y	28.11385	-82.83864	
15	12/3/2008	Three Rooker Bar	?	-,:-,BX	Y	28.11401	-82.83861	Likely same bird as seen 12/2; missing part of left tarsus; old style metal band
16	12/3/2008	Three Rooker Bar	GP US	-,YL:Gf,LY	Y	28.11407	-82.83898	
17	12/3/2008	Three Rooker Bar	GP C	Lf,YB:X,G	Y	28.11578	-82.83899	
18	12/5/2008	Tyndall – West Crooked Island	GP C	X,-:Wf,OB	N	30.06648	-85.61691	CLGT: Missing band is B; seen Tyndall last winter
19	12/6/2008	Phipps Preserve	GP US	-,WW:Gf,LL	Y	29.91516	-84.4399	
20	12/6/2008	Phipps Preserve	GL US	-,:-,O/LX	Y	29.91465	-84.43966	
21	12/6/2008	Phipps Preserve	GP US	-,AA:Gf,LA	Y	29.90761	-84.42969	
22	12/6/2008	Phipps Preserve	GP C	-,RY:Wf,OX	Y	29.91232	-84.43632	
23	12/6/2008	Phipps Preserve	GP US	-,AL:Gf,GA	Y	29.91279	-84.4369	

#	Date	Location	Pop.	Band String	Pic.	Lat.	Long.	Notes
24	12/6/2008	Bay Shoreline, Franklin County	GL US	Of,LY:X,b	Y	29.92705	-84.43921	
25	12/6/2008	Bay Shoreline, Franklin County	GP US	-,WW:Gf,LL	Y	29.92682	-84.4386	
26	12/6/2008	Bay Shoreline, Franklin County	GP C	-,RY:Wf,OX	Y	29.92697	-84.43893	
27	12/6/2008	Lanark Reef West	GP US	X,R:Yf,RB	Y	29.87441	-84.58159	
28	12/6/2008	Lanark Reef West	GP US	-,AR:Gf,LL	Y	29.87453	-84.58138	
29	12/7/2008	Dog Island East	GL US	Of,BL/O;X,Y	Y	29.82568	-84.57854	Holding up left leg and limping
30	12/7/2008	Dog Island East	GP US	PB/R,-;Gf,-	Y	29.82569	-84.57886	
31	3/11/2009	Charley Pass, North Captiva Island	GL US	X,L:Of,RL	Y	26.56888	-82.20478	
32	3/11/2009	Charley Pass, North Captiva Island	GP US	X,B:Yf,RL	Y	26.56855	-82.20461	
33	3/11/2009	Charley Pass, North Captiva Island	GL US	X,G/O:O,-	Y	26.56888	-82.20478	
34	3/11/2009	Charley Pass, North Captiva Island	?	-, -:X,b	Y	26.56888	-82.20478	Probable Great Lakes; combination used by Great Lakes but use by others could not be ruled out.
35	3/12/2009	Estero Lagoon	GP US	Gf,WY:-,RG	Y	26.40594	-81.89779	
36	3/12/2009	Bunche Beach	GL US	Of,Y/O/YL;X,g	Y	26.47711	-81.97028	
37	3/12/2009	Bunche Beach	GP US	Gf,YG:-,RG	Y	26.47759	-81.97559	
38	3/13/2009	Marco Island, Tigertail Beach	GL US	-,b:X,O/b	Y	25.94923	-81.74797	010 on b plastic band
39	3/13/2009	Marco Island, Tigertail Beach	GP US	-,WY:Gf,GA	Y	25.94849	-81.74722	
40	3/13/2009	Marco Island, Tigertail Beach	GL US	X,g:O,-	Y	25.94886	81.7477	018 on g plastic band
41	3/13/2009	Marco Island, Tigertail Beach	GP US	-,WG: Gf,GW	Y	25.95963	81.75362	
42	3/13/2009	Marco Island, Tigertail Beach	GP C	X,-:,-	Y	25.95963	81.75362	801[]-4557[] visible on X band; no number in front of 8, last number consistent with 5. Matches 8011-45575, seen Marco Island 12/2003
43	3/13/2009	Marco Island, Tigertail Beach	GP US	Gf,LW:-,RR	Y	25.95963	81.75362	
44	3/13/2009	Marco Island, Tigertail Beach	GP US	-,RG:Gf,GL	Y	25.95891	81.75386	

Table 5. Alabama Surveys, Date, Survey Location, Site Access, Survey Method, and Total Number of Piping Plovers and Banded Piping Plovers

Survey	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
1	12/8/08	Pelican Island	Car	Foot	14	1
2	12/9/08	Little Dauphin Island	Boat	Foot	4	0
3	12/9/08	Dauphin Island Washover Fan (West End)	Car	Foot	11	4
4	12/13/08	West Dauphin Island, East End	Boat	Foot	2	0
5	12/13/08	Dauphin Island, West End Inlet and Bayside	Car	Foot	19	2
5 Surveys	3 days	4 locations	3 Car 2 Boat	5 Foot	50	7

Table 6. Banded Piping Plovers in Alabama

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
1	12/8/2008	Pelican island	GP C	Lf,GO:-,GX	Y	30.23134	-88.11543	
2	12/9/2008	Dauphin Island Overwash	GP US	-,LG:Gf,RL (?)	N	30.249537	-88.189324	Observed for short time before bird flew; think string is correct but not sure
3	12/9/2008	Dauphin Island Overwash	GP US	Gf,-:YL/P	Y	30.249537	-88.189324	
4	12/9/2008	Dauphin Island Overwash	GP US	Gf,WG:-,RW	Y	30.249537	-88.189324	
5	12/9/2008	Dauphin Island Overwash	GP C	X,-:Wf,LR	Y	30.249537	-88.189324	CGT: Missing band is O; seen Dauphin Island winter 06
6	12/13/2008	Dauphin Island West End	GP US	Gf,-:YL/P	Y	30.24932	-88.1961	
7	12/13/2008	Dauphin Island West End	GP US	Gf,WG:-,RW	Y	30.25023	-88.19408	

Table 7. Survey Number, Date, Location, Site Access, Survey Method, and Total Number of Piping Plovers and Banded Piping Plovers Observed in Mississippi

Survey #	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
1	12/12/08	Petit Bois Island East End	Boat	Foot	14	2
2	12/14/08	Deer Island, East and West Ends	Boat	Foot	8	1
3	12/17/08	Long Beach	Car	Foot	13	1
4	12/18/08	Pass Christian	Car	Foot	0	0
5	12/18/08	Bay St. Louis	Car	Foot	12	2
6	12/19/08	East Long Beach	Car	Foot	3	0
7	12/21/08	Lakeshore – Waveland	Car	Foot	3	0
8	3/03/09	East Ship Island	Boat	Foot	24	3
9	3/04/09	Horn Island, East and West Ends	Boat	Foot	29	3
10	3/08/09	Cat Island, Southwest Spit	Boat	Foot	41	5
11	3/08/09	Ship Island, East End	Boat	Foot	25	2
11 Surveys	9 days	11 Locations	6 Boat 5 Car	11 Foot	172	19

Table 8. Banded Piping Plovers in Mississippi

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
1	12/12/08	Petit Bois Island East end	GP C	X,R:Lf,Lg	Y	30.20793	-88.41483	
2	12/12/08	Petit Bois Island East end	GP C	Lf,-:X,-	Y	30.20704	-88.42043	
3	12/14/08	Deer Island West and East Ends	GP C	X,Yg:Lf,L	Y	30.36645	-88.82062	
4	12/17/08	Long Beach	GL US	-,O:X,b/O/b	Y	30.33623	-89.17142	
5	12/18/08	Bay Saint Louis	GP C	Lf,L:X,YR	Y	30.31672	-89.32246	
6	12/18/08	Bay Saint Louis	GL US	O,-:X,g	Y	30.28767	-89.36112	
7	3/3/2009	East Ship Island	GP US	A,R/B:Gf,-	Y	30.24466	-88.87688	
8	3/3/2009	East Ship Island	GP US	L/YO,-:Gf,-	Y	30.24497	-88.87505	
9	3/3/2009	East Ship Island	GP C	-,X:-,W/LL/W	Y	30.24009	-88.88748	
10	3/4/2009	Horn Islands, East and West Ends	GP US	Gf,RL:-,RY	Y	30.24195	-88.77038	
11	3/4/2009	Horn Islands, East and West Ends	GP US	Yf,BB:X,Y	Y	30.24087	-88.76646	
12	3/4/2009	Horn Islands, East and West Ends	GP US	-,CA:Gf,- (?)	Y	30.24112	-88.76439	"C" band color uncertain from fading; most likely P based on color and what bands were issued.
13	3/8/2009	Cat Island, Southwest Spit	GP US	Gf,AG:-,RL	Y	30.21021	-89.08869	
14	3/8/2009	Cat Island, Southwest Spit	GP C	Lf,-:X,-	Y	30.21263	-89.08814	
15	3/8/2009	Cat Island, Southwest Spit	?	-,RX:-,W	Y	30.21017	-89.08916	
16	3/8/2009	Cat Island, Southwest Spit	GP C	Lf,OL:X,Y	Y	30.21037	-89.0892	
17	3/8/2009	Cat Island, Southwest Spit	GP US	Gf,WG:-,RG	Y	30.2101	-89.08902	
18	3/8/2009	Ship Island, East End	GP C	X,R:Wf,OB	Y	30.21545	-88.94804	
19	3/8/2009	Ship Island, East End	?	-, -:X,-	Y	30.21545	-88.94804	

Table 9. Survey Number, Date, Location, Site Access, Survey Method, and Total Number of Piping Plovers and Banded Piping Plovers Observed in Louisiana

Survey #	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
1	12/23/08	East Grand Terre	Boat	Foot	12	1
2	12/24/08	Grand Terre	Boat	Foot	4	0
3	12/25/08	Grand Isle East End	Car	Foot	0	0
4	12/27/08	West Belle Pass	Boat	Foot	30	4
5	12/28/08	Fourchon Beach East	Car	Foot	26	3
6	12/29/08	East Timbalier Island, East and West Ends	Boat	Foot	3	1
7	12/30/08	Elmers Island East	Boat	Foot	22	4
8	12/31/08	Raccoon Island West	Boat	Foot	53	6
9	1/2/09	Whisky Island West End	Boat	Foot	24	4
10	1/2/09	Whisky Island East End	Boat	Foot	11	3
11	1/2/09	Trinity Island/East Island East End	Boat	Foot	13	3
12	3/06/09	South Pass, East and West Sides	Airboat	Foot	16	3
13	3/06/09	Islands West of South Pass	Airboat	Foot	0	0
13 Surveys	10 days	13 Locations	9 Boat 2 Airboat 2 Car	13 Foot	214	32

Table 10. Banded Piping Plovers in Louisiana

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
1	12/23/08	East Grand Terre	GP US	-,WL:Gf,GL	Y	29.30918	-89.88502	
2	12/27/08	West Belle Pass	GP US	-,Y:Gf,LW	Y	29.09796	-90.25182	
3	12/27/08	West Belle Pass	GL US	X,L:O,-	Y	29.09796	-90.25182	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
4	12/27/08	West Belle Pass	GP US	Gf,-:PR/W,-	Y	29.09498	-90.24918	Picture of all bands but P
5	12/27/08	West Belle Pass	GL US	-,b:X,O/b	Y	29.09550	-90.24960	
6	12/28/08	Fourchon Beach East	GP US	Yf,BY:X,Y	Y	29.11209	-90.17889	
7	12/28/08	Fourchon Beach East	GP US	Yf,b:X,G	Y	29.11230	-90.17883	
8	12/28/08	Fourchon Beach East	GP C	Lf,Rg:-,XO	Y	29.11431	-90.17657	
9	12/29/08	East Timbalier Island, East and West Ends	GP US	Gf,Y/L:W,-	Y	29.07154	-90.31676	
10	12/30/08	Elmers Island East	GP US	-,RL:Gf,LG	Y	29.18424	-90.06293	
11	12/30/08	Elmers Island East	GP US	-,b:Yf,Gb	Y	29.18430	-90.06456	
12	12/30/08	Elmers Island East	GP US	O,P/L:Gf,-	Y	29.18343	-90.06763	
13	12/30/08	Elmers Island East	UK	X,-:-,-	Y	29.18374	-90.06748	
14	12/31/08	Raccoon Island	GP US	X,R:Yf,BL	Y	29.05993	-90.94122	
15	12/31/08	Raccoon Island	GP US	Yf,OR:X,B	Y	29.05980	-90.94147	
16	12/31/08	Raccoon Island	GP US	X,A:bf,G	Y	29.06106	-90.94357	
17	12/31/08	Raccoon Island	GP C	X,b:Lf,OY	Y	29.06310	-90.94778	
18	12/31/08	Raccoon Island	GP US	R,-:Gf,P/L	Y	29.06348	-90.94841	
19	12/31/08	Raccoon Island	GP C	L/W,-:X,W	Y	29.06573	-90.95191	
20	1/2/09	Whisky Island, West End	GP US	-,AG:Gf,GL	Y	29.05446	-90.85658	
21	1/2/09	Whisky Island, West End	GP US	Gf,-:YP,-	Y	29.05458	-90.85791	
22	1/2/09	Whisky Island, West End	GP C	Lf,gR:X,O	Y	29.05480	-90.85868	
23	1/2/09	Whisky Island, West End	GP C	X,GO:Wf,-	Y	29.05527	-90.85873	X,GO:Wf,B seen at this location 12/28/06
24	1/2/09	Whisky Island, East End	GP US	Yf,LL:X,Y	Y	29.06188	-90.80260	
25	1/2/09	Whisky Island, East End	GP US	-,YW:Gf,GW	Y	29.06213	-90.80265	
26	1/2/09	Whisky Island, East End	GP C	W,-:-,X	Y	29.06228	-90.80256	
27	1/2/09	Trinity Island/East Island East End	GP US	Gf,LG:-,RR	Y	29.06453	-90.65620	
28	1/2/09	Trinity Island/East Island East End	GP US	Gf,LL:-,RG	N	29.06457	-90.65627	
29	1/2/09	Trinity Island/East Island East End	UK	O,-:-,-	Y	29.06469	-90.65596	O,X:-,- seen at this location 12/28/06
30	3/6/2009	South Pass, East and West Sides	GL US	-,LX:-,OL	Y	29.01999	-89.13818	
31	3/6/2009	South Pass, East and West Sides	GL US	Of,Y/O/YR;X,g	Y	29.02004	-89.13792	
32	3/6/2009	South Pass, East and West Sides	GP US	Yf,OB:X,L	Y	29.02004	-89.13792	

Table 11. Survey Number, Date, Location, Site Access, Survey Method, and Total Number of Piping Plovers and Banded Piping Plovers Observed in Texas

Survey #	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
1	1/4/09	San Louis Pass to Surfside	Car	ORV	41	8
2	1/5/09	San Louis Pass to Galveston Seawall	Car	ORV	89	10
3	1/6/09	Quintana Beach	Car	ORV	11	0
4	1/7/09	Dewberry Island and Shoalwater Bay	Airboat	Airboat/ Foot	63	8
5	1/8/09	Matagorda NWR	Boat	ORV	2	1
6	1/9/09	Dewberry Island and Shoalwater Bay	Boat	Foot	94	13
7	1/11/09	Surfside to San Louis Pass	Car	ORV	14	5
8	1/11/09	San Louis Pass East Bayside Flats	Car	Foot	9	0
9	1/12/09	Bolivar Flats	Car	Foot	0	0
10	1/12/09	Rollover Pass East	Car	Foot	15	2
11	1/13/09	Sargent Beach to San Bernard NWR	Car	ORV/ Foot	136	15
12	1/14/09	Redfish Bay	Boat	Foot	28	3
13	1/14/09	San Jose Island Bayside, North Pass Center and South	Boat	Foot	92	5
14	1/15/09	San Jose Island Bayside, North Pass	Boat	Foot	73	11
15	1/15/09	Redfish Bay East	Boat	Foot	55	8
16	1/16/09	Mustang Island Beach, Inlet to Jetty at MISP	Car	ORV	0	0
17	1/17/09	Mollie Beattie	Car	Foot	56	3
18	1/18/09	Mustang Island Bayside Flats	Car	Foot	161	17
19	1/19/09	Padre Island National Seashore (PINS) N End No ORV Beach to MP 15	Car	ORV	7	0
20	1/19/09	Yarbrough Pass North	Car	Foot	8	0
21	1/20/09	PINS S End No ORV Beach to Mansfield Pass	Car	ORV	1	0

Survey #	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
22	1/23/09	PINS – Nighthawk Bay Flats	Foot	Foot	118	20
23	1/25/09	Mustang Island, Wilson’s Cut Bayside Flats	Car	Foot	0	0
24	1/31/09	Boca Chica Beach and Inlet Shoreline	Car	ORV	3	1
25	1/31/09	Boca Chica Interior Overwash Fans and Interior Flats (South of road and north of road (South Bay South))	Car	Foot/ATV	63	5
26	2/1/09	South Padre Island Beach, Atwood Park to Mansfield Channel	Car	ORV	0	0
27	2/3/09	South Bay, South and West Sides	ATV	Foot/ATV	239	26
28	2/4/09	South Padre Island Bayside, 26.27442 -97.20823 to 26.31659 -97.22882 (5)	ATV	Foot/ATV	85	12
29	2/5/09	South Padre Island Bayside, 26.31659 -97.22882 to 26.34347 -97.26362 (6)	ATV	Foot/ATV	344	31
30	2/6/09	South Padre Island Bayside, 26.23860 -97.19531 to 26.27442 -97.20823 (4)	ATV	ATV/Foot	21	1
31	2/6/09	Convention Center Bayside Flats 26.14650 -97.17915 to 26.13451 -97.17744 (2)	Car	ORV/Foot	5	2
32	2/8/09	South Padre Island Bayside, 26.34838 -97.25242 to 26.52671 -97.34589 (7)	ATV	ATV/Foot	2	0
33	2/9/09	Convention Center Bayside Flats (2)	Car	ORV/Foot	40	6
34	2/9/09	South Padre Island Bayside, Bridge Flats (1)	ATV	Foot	0	0
35	2/11/09	South Padre Island Bayside, 26.15570 -97.18124 to 26.23860 -97.19530 (3)	ATV	ATV/Foot	47	6
36	2/11/09	South Padre Island Bayside, (4)	ATV	ATV/Foot	39	6
37	2/12/09	South Padre Island Bayside, 26.55370 -97.34488 to 26.53348 -97.32872 (8)	Boat	Foot	164	16
38	2/17/09	East Bayside Flats and Pelone Island Flats, Mustang Island	Boat	Boat/Foot	0	0
39	2/18/09	Padre Island National Seashore Bayside	Car	Foot	15	1
40	2/19/09	Padre Island National Seashore Bayside	Car	Foot	3	0
41	2/19/09	Padre Island National Seashore Gulf Beach	Car	ORV	29	3

Survey #	Date	Location	Site Access	Survey Method	Total Number of PIPL	Number of Banded PIPL
42	2/20/09	Quintana Beach	Car	ORV/Foot	9	0
43	2/21/09	Surfside to San Louis Pass	Car	ORV	74	11
44	2/22/09	Big Reef (East End Galveston Island)	Car	Foot/ORV	0	0
45	2/23/09	Bolivar Flats	Car	Foot	17	1
46	2/23/09	East Boundary Bolivar Flats to Gilchrist	Car	ORV	48	3
47	2/24/09	San Louis Pass to Galveston Seawall, 29.24229, -94.86973	Car	ORV/Foot	87	12
48	2/27/09	Sargent Beach to San Bernard National Wildlife Refuge	Car	Foot/ORV	115	15
49	2/28/09	East Boundary Bolivar Flats to Crystal Beach	Car	ORV	3	0
50	2/28/09	Bolivar Flats	Car	Foot	83	6
51	3/2/09	Bolivar Flats	Car	Foot	0	0
52	3/2/09	Rollover Pass – East Side of Pass	Car	Foot	20	2
52 Surveys	39 days	34 Locations	34 Car 8 Boat 8 ATV 1 Foot 1 Airboat	21 Foot 14 ORV 8 Foot/ATV 7 ORV/Foot 1 Airboat/ Foot 1 Boat/Foot	2628	295

Table 12. Banded Piping Plovers in Texas

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
1	1/4/09	San Louis Pass to Surfside	GP US	-,GG:Gf,GG	Y	29.05687	-95.14326	
2	1/4/09	San Louis Pass to Surfside	GP C	-, -:X,WW	Y	29.04349	-95.16283	CLGT: CHAPLIN L SK chick from 2003 (missing celluloid bicolour up left)
3	1/4/09	San Louis Pass to Surfside	GP C	X,O:Lf,GG	Y	29.03785	-95.17091	
4	1/4/09	San Louis Pass to Surfside	GP C	X,G:Wf,Rg	Y	29.00898	-95.21193	
5	1/4/09	San Louis Pass to Surfside	GP C	Lf,gB:X,Y	Y	29.00756	-95.21372	
6	1/4/09	San Louis Pass to Surfside	GP US	-,LG:Gf,GR	Y	29.00599	-95.21571	
7	1/4/09	San Louis Pass to Surfside	GP US	Gf,-:L/YO,-	Y	29.02357	-95.19115	
8	1/4/09	San Louis Pass to Surfside	GP C	Lf,gL:X,G	Y	29.06743	-95.12858	
9	1/5/09	San Louis Pass to Galveston Seawall	GP US	-,YY:Gf,LG	Y	29.08952	-95.10642	
10	1/5/09	San Louis Pass to Galveston Seawall	GP C	Lf,OX:-,YG	Y	29.09348	-95.10348	
11	1/5/09	San Louis Pass to Galveston Seawall	GP C	Lf,-:X,-	Y	29.10894	-95.08622	
12	1/5/09	San Louis Pass to Galveston Seawall	GP C	Lf,GG:X,Y	Y	29.11351	-95.07987	
13	1/5/09	San Louis Pass to Galveston Seawall	GP US	Gf,-: -,AG	Y	29.11828	-95.07309	
14	1/5/09	San Louis Pass to Galveston Seawall	GP US	Gf,-: -,L/PW	Y	29.16395	-95.00141	
15	1/5/09	San Louis Pass to Galveston Seawall	GP C	X,-:Lf,-	Y	29.16445	-95.00054	
16	1/5/09	San Louis Pass to Galveston Seawall	GP C	Lf,O:X,gB	Y	29.19165	-94.95530	
17	1/5/09	San Louis Pass to Galveston Seawall	GP US	Gf,-:AL/Y,-	Y	29.18476	-94.96706	
18	1/5/09	San Louis Pass to Galveston Seawall	GP US	Gf,WG:-,RY	Y	29.20949	-94.92535	
19	1/7/09	Dewberry Island and Shoalwater Bay	GP US	X,R:Yf,YR	N	28.32236	-96.61871	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
20	1/7/09	Dewberry Island and Shoalwater Bay	GP US	L/PY,-:Gf,-	N	28.32236	-96.61871	
21	1/7/09	Dewberry Island and Shoalwater Bay	?	-,:-,b	N	28.35877	-96.57294	
22	1/7/09	Dewberry Island and Shoalwater Bay	GP C	Lf,-:X,-	N	28.37370	-96.53825	
23	1/7/09	Dewberry Island and Shoalwater Bay	GP US	Gf,LR:-,RR	N	28.37557	-96.53271	
24	1/7/09	Dewberry Island and Shoalwater Bay	GP C	X,-:Wf,-	N	28.37557	-96.53271	
25	1/7/09	Dewberry Island and Shoalwater Bay	GP US	-,YR:Gf,GR	N	28.37557	-96.53271	
26	1/7/09	Dewberry Island and Shoalwater Bay	GP C	Lf,R:X,RO	N	28.37557	-96.53271	
27	1/8/09	Matagorda NWR	?	-,Y:-,-	Y	28.09454	-96.81258	
28	1/9/09	Dewberry Island and Shoalwater Bay	GP C	Lf,RY:X,Y	Y	28.37614	-96.53238	
29	1/9/09	Dewberry Island and Shoalwater Bay	GP C	Lf,R:X,RO	Y	28.37614	-96.53238	
30	1/9/09	Dewberry Island and Shoalwater Bay	GP C	W,Y:-,X	Y	28.37614	-96.53238	
31	1/9/09	Dewberry Island and Shoalwater Bay	GP C	X,-:Wf,-	Y	28.37614	-96.53238	
32	1/9/09	Dewberry Island and Shoalwater Bay	GP US	-,YR:Gf,GR	Y	28.37614	-96.53238	
33	1/9/09	Dewberry Island and Shoalwater Bay	GP US	Gf,LR:-,RR	Y	28.37614	-96.53238	
34	1/9/09	Dewberry Island and Shoalwater Bay	GP C	Lf,B:X,Lg	Y	28.37614	-96.53238	
35	1/9/09	Dewberry Island and Shoalwater Bay	GP US	Gf,GG:-,RL	Y	28.33908	-96.60440	
36	1/9/09	Dewberry Island and Shoalwater Bay	GP C	X,g:Lf,gL	Y	28.33908	-96.60440	
37	1/9/09	Dewberry Island and Shoalwater Bay	GP C	Wf,-:X,-	N	28.33908	-96.60440	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
38	1/9/09	Dewberry Island and Shoalwater Bay	GP C	Lf,RY:X,O	Y	28.33908	-96.60440	
39	1/9/09	Dewberry Island and Shoalwater Bay	GP C	-,YX:Wf,LB	Y	28.33908	-96.60440	Left leg limp, holding foot up.
40	1/9/09	Dewberry Island and Shoalwater Bay	GP US	L/PY,-:Gf,-	Y	28.33908	-96.60440	
41	1/11/09	Surfside to San Louis Pass	?	-,G:-,-	Y	29.97046	-95.26159	
42	1/11/09	Surfside to San Louis Pass	GP C	X,GR:Wf,O	Y	29.97046	-95.26159	
43	1/11/09	Surfside to San Louis Pass	GP C	Lf,-:X,-	Y	29.97046	-95.26159	
44	1/11/09	Surfside to San Louis Pass	GP C	X,-:Wf,RR	Y	29.97046	-95.26159	
45	1/11/09	Surfside to San Louis Pass	GP US	Gf,-:L/YO,-	Y	29.03555	-95.17342	
46	1/12/09	Rollover Pass	GP US	Gf,R/WB:-,-	Y	29.51388	-94.49698	
47	1/12/09	Rollover Pass	GP US	X,B:Yf,OL	Y	29.51385	-94.49887	
48	1/13/09	Sargent Beach to San Bernard NWR	GP US	Gf,RY:-,RL	Y	28.81761	-95.52600	
49	1/13/09	Sargent Beach to San Bernard NWR	GP C	X,RO:Wf,g	Y	28.81761	-95.52600	
50	1/13/09	Sargent Beach to San Bernard NWR	GP C	X,O:Lf,RB	Y	28.81825	-95.52639	
51	1/13/09	Sargent Beach to San Bernard NWR	GP US	Yf,BL:X,R	Y	28.81825	-95.52639	
52	1/13/09	Sargent Beach to San Bernard NWR	GP US	Gf,YL:-,RL	Y	28.81843	-95.52734	
53	1/13/09	Sargent Beach to San Bernard NWR	GP C	L/W,X:-,-	Y	28.81843	-95.52734	
54	1/13/09	Sargent Beach to San Bernard NWR	GP C	Lf,BB:X,Y	Y	28.81843	-95.52734	
55	1/13/09	Sargent Beach to San Bernard NWR	GP US	BL/Y,-:Gf,-	Y	28.81937	-95.52665	
56	1/13/09	Sargent Beach to San Bernard NWR	GP C	X,B:Lf,GY	Y	28.82065	-95.52696	
57	1/13/09	Sargent Beach to San Bernard NWR	GP C	Lf,R:X,LB	Y	28.82020	-95.52657	
58	1/13/09	Sargent Beach to San Bernard NWR	GP C	X,YR:Wf,Y	Y	28.82020	-95.52657	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
59	1/13/09	Sargent Beach to San Bernard NWR	GP US	Gf,RG:-,RL	Y	28.82020	-95.52657	
60	1/13/09	Sargent Beach to San Bernard NWR	GP C	X,-:-,R/bL/W	Y	28.82004	-95.52695	
61	1/13/09	Sargent Beach to San Bernard NWR	GP C	-,-:L/W,W/LX	Y	28.82004	-95.52695	
62	1/13/09	Sargent Beach to San Bernard NWR	GP US	-,R/WB;Gf,-	Y	28.82004	-95.52695	
63	1/14/09	Redfish Bay	GP C	-,OL/W;X,-	Y	27.91611	-97.08248	
64	1/14/09	Redfish Bay	GP C	X,BG:Wf,G	Y	27.98693	-97.06614	
65	1/14/09	Redfish Bay	GP US	A,-:Gf,R/B (?)	Y	27.98693	-97.06614	Pictures match combination but unsure
66	1/14/09	North Pass, Center and South	GP US	Yf,LG:X,Y	Y	27.89861	-97.03993	
67	1/14/09	North Pass, Center and South	GP C	Lf,O:X,OL	Y	27.89861	-97.03993	
68	1/14/09	North Pass, Center and South	GP US	Gf,RG:-,RY	N	27.89670	-97.04053	
69	1/14/09	North Pass, Center and South	GP US	X,O:bf,G	N	27.89670	-97.04053	
70	1/14/09	North Pass, Center and South	GP US	X,-:Gf,OY	N	27.89670	-97.04053	
71	1/15/09	North Pass	GP C	Lf,O:X,OL	N	27.89541	-97.04103	
72	1/15/09	North Pass	GP US	Gf,RG:-,RY	N	27.89541	-97.04103	
73	1/15/09	North Pass	GP C	X,-:Lf,-	N	27.89541	-97.04103	
74	1/15/09	North Pass	GP US	-,LL:Gf,LW	Y	27.89627	-97.04082	
75	1/15/09	North Pass	GP US	-,LA:Gf,GG	Y	27.89580	-97.04089	
76	1/15/09	North Pass	GP US	Yf,RG:X,b	Y	27.89678	-97.04070	
77	1/15/09	North Pass	?	-,X:-,-	Y	27.89678	-97.04070	
78	1/15/09	North Pass	GP US	Yf,LG:X,Y	Y	27.89722	-97.04069	
79	1/15/09	North Pass	GP US	-,YR:Gf,LG	Y	27.89745	-97.04060	
80	1/15/09	North Pass	GP C	-,X:-,W/LL/W	Y	27.89654	-97.04073	
81	1/15/09	North Pass	GP US	X,O:bf,G	Y	27.89547	-97.04103	
82	1/15/09	Redfish Bay East	GP US	-,LA:Gf,GG	N	27.91510	-97.08222	
83	1/15/09	Redfish Bay East	GP US	X,O:bf,G	Y	27.91510	-97.08222	
84	1/15/09	Redfish Bay East	GP US	-,YR:Gf,LG	Y	27.91510	-97.08222	
85	1/15/09	Redfish Bay East	?	-,X:-,-	Y	27.91510	-97.08222	
86	1/15/09	Redfish Bay East	GP US	Gf,GL/Y:-,-	Y	27.91454	-97.08247	
87	1/15/09	Redfish Bay East	GP C	-,OL/W:X,-	N	27.91478	-97.08221	
88	1/15/09	Redfish Bay East	?	Y,-:-,R/B	Y	27.91478	-97.08221	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
89	1/15/09	Redfish Bay East	GP US	X,-:Gf,OY	Y	27.91477	-97.08221	
90	1/17/09	Mollie Beattie	GP C	X,L:Lf,OG	Y	27.63389	-97.21342	
91	1/17/09	Mollie Beattie	GP C	Lf,LO:X,g	Y	27.63606	-97.21387	
92	1/17/09	Mollie Beattie	GP US	X,L:bf,G	Y	27.63791	-97.21504	
93	1/18/09	Mustang Island Bayside Flats	GP US	X,RG:Gf,RR	Y	27.68300	-97.20723	
94	1/18/09	Mustang Island Bayside Flats	GP C	X,L/Wb/R:-,-	Y	27.68300	-97.20723	
95	1/18/09	Mustang Island Bayside Flats	GP C	X,RO:Wf,R	Y	27.68300	-97.20723	
96	1/18/09	Mustang Island Bayside Flats	GP C	W,Y:B,X	Y	27.68300	-97.20723	
97	1/18/09	Mustang Island Bayside Flats	GP US	-,LW:Gf,LA	Y	27.68305	-97.20946	
98	1/18/09	Mustang Island Bayside Flats	GP C	X,B:Lf,GB	Y	27.68305	-97.20946	
99	1/18/09	Mustang Island Bayside Flats	GP C	X,R:Lf,LB	Y	27.68305	-97.20946	
100	1/18/09	Mustang Island Bayside Flats	GP C	Lf,YG:-,OX	Y	27.68306	-97.20531	
101	1/18/09	Mustang Island Bayside Flats	GP C	Lf,-:X,-	Y	27.68306	-97.20531	
102	1/18/09	Mustang Island Bayside Flats	GP C	W,X:-,R	Y	27.68306	-97.20531	
103	1/18/09	Mustang Island Bayside Flats	GP US	X,YG:bf,G	Y	27.68299	-97.20625	
104	1/18/09	Mustang Island Bayside Flats	GP US	Gf,-:-,g/VY	Y	27.68273	-97.20824	
105	1/18/09	Mustang Island Bayside Flats	GP US	Gf,-:O,(?)	N	27.68291	-97.20793	
106	1/18/09	Mustang Island Bayside Flats	?	-,LG:-,RY	Y	27.68291	-97.20793	Would match GP US if Gf fell off
107	1/18/09	Mustang Island Bayside Flats	GP C	X,L:Lf,OG	Y	27.68291	-97.20793	
108	1/18/09	Mustang Island Bayside Flats	GP US	-,GL/P:Gf,-	Y	27.68291	-97.20793	
109	1/18/09	Mustang Island Bayside Flats	GP C	-,gB:Wf,YX	Y	27.68302	-97.20595	All bands very faded
110	1/23/09	PINS – Nighthawk Bay Flats	GP US	W,P/L:Gf,-	Y	27.53587	-97.27755	
111	1/23/09	PINS – Nighthawk Bay Flats	GP C	-, -:X,L/W	Y	27.53758	-97.27612	
112	1/23/09	PINS – Nighthawk Bay Flats	GP C	W,X:O,R	Y	27.53746	-97.27667	
113	1/23/09	PINS – Nighthawk Bay Flats	GP US	Gf,GG:-,WG	Y	27.53746	-97.27667	
114	1/23/09	PINS – Nighthawk Bay Flats	GP C	Lf,GG:X,B	Y	27.53746	-97.27667	
115	1/23/09	PINS – Nighthawk Bay Flats	GP US	-,YG:Gf,GW	Y	27.53746	-97.27667	
116	1/23/09	PINS – Nighthawk Bay Flats	GP C	Lf,G:X,OY	Y	27.53746	-97.27667	
117	1/23/09	PINS – Nighthawk Bay Flats	GP C	-,L/W:X,W/L	N	27.53746	-97.27667	
118	1/23/09	PINS – Nighthawk Bay Flats	GP C	W,Y:-,X	Y	27.53746	-97.27667	
119	1/23/09	PINS – Nighthawk Bay Flats	GP C	W,G:-,X	Y	27.53746	-97.27667	Location estimated
120	1/23/09	PINS – Nighthawk Bay Flats	GP C	Lf,RB:X,Y	Y	27.53948	-97.27648	
121	1/23/09	PINS – Nighthawk Bay Flats	GP C	-, -:X,W	Y	27.53948	-97.27648	
122	1/23/09	PINS – Nighthawk Bay Flats	GP US	-,RL:Gf,GA	Y	27.53956	-97.27564	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
123	1/23/09	PINS – Nighthawk Bay Flats	GP C	X,-:Wf,-	Y	27.53956	-97.27564	
124	1/23/09	PINS – Nighthawk Bay Flats	?	-,Y:-,-	Y	27.53956	-97.27564	Location estimated
125	1/23/09	PINS – Nighthawk Bay Flats	GP C	Lf,YO:-,OX	Y	27.53922	-97.27667	
126	1/23/09	PINS – Nighthawk Bay Flats	GP C	Lf,GX:-,gO	Y	27.53922	-97.27667	
127	1/23/09	PINS – Nighthawk Bay Flats	GP US	Yf,R:X,G	Y	27.53952	-97.27753	
128	1/23/09	PINS – Nighthawk Bay Flats	GP C	W,X:b,B	Y	27.53952	-97.27695	
129	1/23/09	PINS – Nighthawk Bay Flats	GP US	X,R:Yf,BR	Y	27.53542	-97.27760	
130	1/31/09	Boca Chica Beach and Inlet Shoreline	?	-,X:-,-	Y	25.99273	-97.14979	
131	1/31/09	Boca Chica Interior Overwash Fans, Interior Flats, and South Bay	GP US	?Y,-:Gf,-	Y	25.97269	-97.15812	South of Road; bird flew N towards South Bay.
132	1/31/09	Boca Chica Interior Overwash Fans, Interior Flats, and South Bay	GP C	Lf,O:X,BR	Y	25.99711	-97.18549	
133	1/31/09	Boca Chica Interior Overwash Fans, Interior Flats, and South Bay	GP US	-,R/WL:Gf,-	Y	25.99711	-97.18549	
134	1/31/09	Boca Chica Interior Overwash Fans, Interior Flats, and South Bay	GP US	Gf,YG:-,GA	Y	25.99711	-97.18549	
135	1/31/09	Boca Chica Interior Overwash Fans, Interior Flats, and South Bay	GP US	Gf,-:-,PL/Y	Y	25.99739	-97.18519	
136	2/3/09	Boca Chica - South Bay	GP US	Gf,LR:-,LY	N	26.00220	-97.20258	
137	2/3/09	Boca Chica - South Bay	GP US	Gf,LW:-,RY	Y	26.00397	-97.20190	
138	2/3/09	Boca Chica - South Bay	GP C	Lf,O:X,BR	Y	26.00397	-97.20190	
139	2/3/09	Boca Chica - South Bay	GP US	X,R:Yf,OR	Y	26.00397	-97.20190	
140	2/3/09	Boca Chica - South Bay	GP US	-,LW:Gf,GL	Y	26.00397	-97.20190	
141	2/3/09	Boca Chica - South Bay	GP C	X,B:Wf,RY	Y	26.00397	-97.20190	
142	2/3/09	Boca Chica - South Bay	GP US	-,RA:Gf,GA	N	26.00420	-97.20364	
143	2/3/09	Boca Chica - South Bay	GP US	-,R/AL:Gf,-	N	26.00420	-97.20364	
144	2/3/09	Boca Chica - South Bay	GP C	X,L:Lf,YR	Y	26.00420	-97.20364	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
145	2/3/09	Boca Chica - South Bay	GP US	Gf,-:O,W/R	Y	26.00420	-97.20364	Position estimated
146	2/3/09	Boca Chica - South Bay	GP US	WY,-:Gf,- (?)	Y	26.00420	-97.20364	Position estimated
147	2/3/09	Boca Chica - South Bay	GP C	Lf,B:X,GY	Y	26.00289	-97.20467	
148	2/3/09	Boca Chica - South Bay	GP C	Lf,g:X,GL	Y	26.00289	-97.20467	
149	2/3/09	Boca Chica - South Bay	GP C	X,YY:Wf,B	Y	26.00289	-97.20467	Poor picture quality.
150	2/3/09	Boca Chica - South Bay	GP US	-,YW:Gf,LL	Y	26.00289	-97.20467	
151	2/3/09	Boca Chica - South Bay	GP C	X,Y:Wf,AR	Y	26.00289	-97.20467	
152	2/3/09	Boca Chica - South Bay	GP US	G,R/B:Gf,-	Y	26.00289	-97.20467	
153	2/3/09	Boca Chica - South Bay	GP US	-,AA:Gf,GA	Y	25.99747	-97.20145	
154	2/3/09	Boca Chica - South Bay	GP US	Gf,YG:-,GA	Y	25.99747	-97.20145	
155	2/3/09	Boca Chica - South Bay	GP US	Gf,-:L/YA,-	Y	25.99747	-97.20145	
156	2/3/09	Boca Chica - South Bay	GP US	Gf,P/L:R,-	Y	25.99747	-97.20145	
157	2/3/09	Boca Chica - South Bay	GP C	X,AB:Wf,g	Y	26.00059	-97.20190	
158	2/3/09	Boca Chica - South Bay	GP C	W,LL:-,X	Y	26.00059	-97.20190	
159	2/3/09	Boca Chica - South Bay	GP US	Gf,RG:-,GR(?)	N	26.00059	-97.20190	
160	2/3/09	Boca Chica - South Bay	GP US	-,GL:Gf,LA	Y	25.99891	-97.19797	
161	2/3/09	Boca Chica - South Bay	GP C	-, -:X,L/Wb/R	Y	25.99891	-97.19797	
162	2/4/09	South Padre Island Bayside (5)	?	-,X:-,Y	N	26.27590	-97.21119	
163	2/4/09	South Padre Island Bayside (5)	GP US	Yf,OL:X,B	Y	26.28504	-97.21446	
164	2/4/09	South Padre Island Bayside (5)	GP C	Lf,O:X,LR	N	26.29819	-97.22213	
165	2/4/09	South Padre Island Bayside (5)	GP C	Lf,BR:X,Y	Y	26.29819	-97.22213	
166	2/4/09	South Padre Island Bayside (5)	GP US	-,LL:Gf,GL	Y	26.29819	-97.22213	
167	2/4/09	South Padre Island Bayside (5)	GP US	-, -:Gf,?	N	26.30146	-97.22440	
168	2/4/09	South Padre Island Bayside (5)	?	-, -:X,-	Y	26.30146	-97.22440	
169	2/4/09	South Padre Island Bayside (5)	GP C	X,Y:Lf,Og	Y	26.29880	-97.22424	
170	2/4/09	South Padre Island Bayside (5)	GP US	-,AW:Gf,LL	Y	26.30974	-97.22877	
171	2/4/09	South Padre Island Bayside (5)	?	R,-:X,Y	N	26.31322	-97.23158	
172	2/4/09	South Padre Island Bayside (5)	GP C	X,OY:Wf,-	Y	26.31322	-97.23158	GLGT: missing dark green
173	2/4/09	South Padre Island Bayside (5)	GP C	W,X:O,O	Y	26.31322	-97.23158	
174	2/5/09	South Padre Island Bayside (6)	GP US	-,GY:Gf,RR	Y	26.33165	-97.25072	
175	2/5/09	South Padre Island Bayside (6)	GP C	Lf,BR:X,Y	Y	26.33255	-97.25156	
176	2/5/09	South Padre Island Bayside (6)	GP C	W,X:-,Y	Y	26.33255	-97.25156	
177	2/5/09	South Padre Island Bayside (6)	GP US	Gf,-:GP,-	Y	26.33255	-97.25156	
178	2/5/09	South Padre Island Bayside (6)	?	-, -:X,-	N	26.33255	-97.25156	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
179	2/5/09	South Padre Island Bayside (6)	GP US	Yf,OL:X,B	Y	26.33638	-97.25494	
180	2/5/09	South Padre Island Bayside (6)	GP US	-,YL/Y:Gf,-	Y	26.33638	-97.25494	
181	2/5/09	South Padre Island Bayside (6)	?	-,:-,B	Y	26.33693	-97.25589	
182	2/5/09	South Padre Island Bayside (6)	GP US	Gf,YY:-,RL	Y	26.33693	-97.25589	
183	2/5/09	South Padre Island Bayside (6)	GP US	Gf,AR/W:-,-	Y	26.34135	-97.25900	
184	2/5/09	South Padre Island Bayside (6)	GP C	X,g:Lf,YL	Y	26.34135	-97.25900	
185	2/5/09	South Padre Island Bayside (6)	GP C	-,:-L/W,g	Y	26.34135	-97.25900	
186	2/5/09	South Padre Island Bayside (6)	GP C	W,X:G,W	Y	26.34135	-97.25900	
187	2/5/09	South Padre Island Bayside (6)	GP US	-,:-Gf,L/YL/Y	Y	26.34344	-97.25976	
188	2/5/09	South Padre Island Bayside (6)	GP US	-,LL:Gf,GG	Y	26.34353	-97.25988	
189	2/5/09	South Padre Island Bayside (6)	?	-,:-,X	Y	26.34353	-97.25988	
190	2/5/09	South Padre Island Bayside (6)	GP C	X,O:Lf,Og	Y	26.34353	-97.25988	
191	2/5/09	South Padre Island Bayside (6)	GP C	Lf,O:X,GY	Y	26.34028	-97.26105	
192	2/5/09	South Padre Island Bayside (6)	?	-,X:-,BL/A	N	26.34028	-97.26105	
193	2/5/09	South Padre Island Bayside (6)	GP C	X,OY:Wf,-	Y	26.34028	-97.26105	GLGT: missing dark green
194	2/5/09	South Padre Island Bayside (6)	GP C	-,X:-,b/RL/W	Y	26.34028	-97.26105	
195	2/5/09	South Padre Island Bayside (6)	GP C	X,:-,WW	Y	26.34028	-97.26105	
196	2/5/09	South Padre Island Bayside (6)	GP US	L/PG,-:Gf,-	Y	26.34028	-97.26105	
197	2/5/09	South Padre Island Bayside (6)	GP C	W,:-,WX	Y	26.34149	-97.26131	
198	2/5/09	South Padre Island Bayside (6)	GP C	Lf,R:X,LY	Y	26.34303	-97.26339	
199	2/5/09	South Padre Island Bayside (6)	GP US	X,R:Yf,RR	Y	26.34303	-97.26339	
200	2/5/09	South Padre Island Bayside (6)	GP US	Gf,LG:-,RG	Y	26.34303	-97.26339	
201	2/5/09	South Padre Island Bayside (6)	GP C	Lf,OB:X,O	Y	26.34303	-97.26339	
202	2/5/09	South Padre Island Bayside (6)	GP C	-,:-X,W/L	Y	26.34303	-97.26339	
203	2/5/09	South Padre Island Bayside (6)	GP US	Yf,OR:X,Y	Y	26.34303	-97.26339	
204	2/5/09	South Padre Island Bayside (6)	GP US	Gf,AL/Y:-,-	Y	26.34303	-97.26339	
205	2/6/09	South Padre Island Bayside (4)	GP C	Lf,O:X,GY	Y	26.26275	-97.20407	
206	2/6/09	Convention Center Bayside Flats (2)	?	-,:-,X	Y	26.13766	-97.17714	
207	2/6/09	Convention Center Bayside Flats (2)	GP C	Lf,OX:-,GL	Y	26.13766	-97.17714	
208	2/9/09	Convention Center Bayside Flats (2)	GP C	X,LL:Lf,g	Y	26.14178	-97.17819	
209	2/9/09	Convention Center Bayside Flats	?	-,:-,X	Y	26.14227	-97.17830	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
		(2)						
210	2/9/09	Convention Center Bayside Flats (2)	GP C	Lf,OX:-,GL	N	26.14293	-97.17838	
211	2/9/09	Convention Center Bayside Flats (2)	GP US	Gf,-:PL/P,-	Y	26.14604	-97.17973	
212	2/9/09	Convention Center Bayside Flats (2)	GL	O,-:X,O/g	Y	26.14623	-97.17979	
213	2/9/09	Convention Center Bayside Flats (2)	GP C	W,X:O,-	Y	26.14636	-97.17950	
214	2/11/09	South Padre Island Bayside (3)	GL	O,-:X,O/g	N	26.16440	-97.18179	
215	2/11/09	South Padre Island Bayside (3)	?	-,:-,X	N	26.16440	-97.18179	
216	2/11/09	South Padre Island Bayside (3)	GP US	Gf,-:PL/P,-	N	26.16440	-97.18179	
217	2/11/09	South Padre Island Bayside (3)	GP C	X,LL:Lf,g	Y	26.19361	-97.18725	
218	2/11/09	South Padre Island Bayside (3)	GP C	Lf,O:X,OO	Y	26.19361	-97.18725	
219	2/11/09	South Padre Island Bayside (3)	GP US	P(?)A,-:Gf,-	N	26.22082	-97.19283	Not sure on upper band left leg - possible split
220	2/11/09	South Padre Island Bayside (4)	GP US	L/PG,-:Gf,-	Y	26.24696	-97.19642	
221	2/11/09	South Padre Island Bayside (4)	GP US	Gf,LY:-,RY	Y	26.24800	-97.19658	
222	2/11/09	South Padre Island Bayside (4)	?	-,:-,W	N	26.25665	-97.20119	
223	2/11/09	South Padre Island Bayside (4)	GP US	Yf,OL:X,B	Y	26.26129	-97.20181	Poor quality picture
224	2/11/09	South Padre Island Bayside (4)	GP C	-,X:-,b/RL/W	Y	26.26129	-97.20181	Poor quality picture
225	2/11/09	South Padre Island Bayside (4)	GP C	W,X:-,-	N	26.26268	-97.20335	
226	2/12/09	South Padre Island Bayside (8)	GP US	Gf,LL:-,RY	N	26.55687	-97.33219	
227	2/12/09	South Padre Island Bayside (8)	GP C	-,X:-,b/RL/W	N	26.55687	-97.33219	
228	2/12/09	South Padre Island Bayside (8)	GP C	X,B:Lf,BL	Y	26.54038	-97.33265	
229	2/12/09	South Padre Island Bayside (8)	GP C	X,AA:Wf,G	Y	26.53395	-97.32904	
230	2/12/09	South Padre Island Bayside (8)	GP US	L/PB/R,-:Gf,-	N	26.53382	-97.32874	
231	2/12/09	South Padre Island Bayside (8)	GP US	Gf,-:R,g	N	26.53551	-97.32828	
232	2/12/09	South Padre Island Bayside (8)	GP C	X,RO:Wf,G	Y	26.53551	-97.32828	
233	2/12/09	South Padre Island Bayside (8)	GP C	X,-:L/W,-	N	26.53689	-97.32874	
234	2/12/09	South Padre Island Bayside (8)	GP C	X,R:Lf,BG	N	26.53723	-97.32848	
235	2/12/09	South Padre Island Bayside (8)	GP C	X,-:Wf,-	N	26.53723	-97.32848	
236	2/12/09	South Padre Island Bayside (8)	GP C	Lf,gL:X,Y	Y	26.53822	-97.32774	
237	2/12/09	South Padre Island Bayside (8)	GP US	-,WW:Gf,GL	N	26.53822	-97.32774	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
238	2/12/09	South Padre Island Bayside (8)	GP US	Gf,WL:-,RY	Y	26.53822	-97.32774	
239	2/12/09	South Padre Island Bayside (8)	GP US	X,R:bf,Y	Y	26.53915	-97.32761	
240	2/12/09	South Padre Island Bayside (8)	GP C	Lf,-:X,-	N	26.54043	-97.32842	
241	2/12/09	South Padre Island Bayside (8)	GP US	Gf,-:N,GP(?)	N	26.54140	-97.32860	
242	2/18/09	Padre Island National Seashore Bayside	GP C	X,O:Lf,gR	Y	27.30013	-97.37000	
243	2/19/09	Padre Island National Seashore Beach	GP C	Lf,BY:X,Y	Y	27.27276	-97.34898	
244	2/19/09	Padre Island National Seashore Beach	GP C	Lf,-:X,-	Y	27.19525	-97.36600	
245	2/19/09	Padre Island National Seashore Beach	GP C	W,-:-,X	Y	27.18288	-97.36808	
246	2/21/09	Surfside to San Louis Pass	?	-,X:O,W	N	28.99770	-95.22657	
247	2/21/09	Surfside to San Louis Pass	GP US	-,LG:Gf,GR	N	29.00471	-95.21713	
248	2/21/09	Surfside to San Louis Pass	GP C	X,G:Wf,Rg	N	29.00995	-95.21012	
249	2/21/09	Surfside to San Louis Pass	GP C	Lf,gB:X,Y	N	29.01157	-95.20792	
250	2/21/09	Surfside to San Louis Pass	GP US	Gf,-:L/YO,-	N	29.01727	-95.19997	
251	2/21/09	Surfside to San Louis Pass	GP C	Lf,gL:X,G	N	29.06752	-95.12852	
252	2/21/09	Surfside to San Louis Pass	GP C	-, -:L/WW/LX	N	29.05988	-95.13882	
252	2/21/09	Surfside to San Louis Pass	GP US	Gf,LR:-,-	N	29.03296	-95.17809	
254	2/21/09	Surfside to San Louis Pass	GP C	-, -:X,WW	N	29.03269	-95.17857	
255	2/21/09	Surfside to San Louis Pass	GP C	X,-:Wf,RR	Y	28.97450	-95.25696	CLGT: missing dark blue
256	2/21/09	Surfside to San Louis Pass	?	N,G:N,N	N	28.97056	-95.26173	Would match -,G:-, seen previous survey near here
257	2/23/09	Bolivar Flats	GP C	X,-:Lf,-	N	29.36620	-94.74335	
258	2/23/09	Bolivar Flats East Boundary to Gilchrist	GP C	X,Y:Lf,OY	N	29.41443	-94.69502	
259	2/23/09	Bolivar Flats East Boundary to Gilchrist	GP C	X,-:Lf,-	N	29.41805	-94.69039	
260	2/23/09	Bolivar Flats East Boundary to Gilchrist	?	N,X:gY,-	N	29.41488	-94.69531	
261	2/24/09	San Louis Pass to Galveston Seawall	GP C	X,O:Lf,GG	N	29.09361	-95.11589	
262	2/24/09	San Louis Pass to Galveston Seawall	GP C	Lf,-:X,-	N	29.09350	-95.11619	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
263	2/24/09	San Louis Pass to Galveston Seawall	GP US	X,B:Yf,OY	Y	29.09292	-95.11563	
264	2/24/09	San Louis Pass to Galveston Seawall	GP US	-,AW:Gf,LW	N	29.15181	-95.02082	
265	2/24/09	San Louis Pass to Galveston Seawall	GP US	Gf,WY:-,RR	N	29.15754	-95.01170	
266	2/24/09	San Louis Pass to Galveston Seawall	GP C	X,L:Lf,Rg	Y	29.18467	-95.96700	Galveston Island State Park
267	2/24/09	San Louis Pass to Galveston Seawall	GP C	Lf,O:X,gB	Y	29.19129	-94.95571	Galveston Island State Park
268	2/24/09	San Louis Pass to Galveston Seawall	GP US	R,P/L:Gf,-	Y	29.19290	-94.95282	Galveston Island State Park
269	2/24/09	San Louis Pass to Galveston Seawall	GP C	Lf,GG:X,Y	Y	29.11377	-95.07959	
270	2/24/09	San Louis Pass to Galveston Seawall	GP US	-,YY:Gf,LG	Y	29.08733	-95.10893	
271	2/24/09	San Louis Pass to Galveston Seawall	GP C	-,X:WW	Y	29.08571	-95.11084	
272	2/24/09	San Louis Pass to Galveston Seawall	GP C	Lf,GB:X,R	Y	29.08571	-95.11084	
273	2/27/09	Sargent Beach to San Bernard NWR	GP US	Gf,YL:-,RL	N	28.82654	-95.52534	
274	2/27/09	Sargent Beach to San Bernard NWR	GP US	-,R/WB:Gf,-	N	28.82654	-95.52534	
275	2/27/09	Sargent Beach to San Bernard NWR	GP US	Gf,RY:-,RL	N	28.82654	-95.52534	
276	2/27/09	Sargent Beach to San Bernard NWR	GP C	Lf,R:X,LB	N	28.82672	-95.52584	
277	2/27/09	Sargent Beach to San Bernard NWR	GP US	BL/Y,-:Gf,-	N	28.82672	-95.52584	
278	2/27/09	Sargent Beach to San Bernard NWR	GP C	L/W,X:-,-	N	28.82696	-95.52681	
279	2/27/09	Sargent Beach to San Bernard NWR	GP US	Gf,RG:-,RL	N	28.82696	-95.52681	
280	2/27/09	Sargent Beach to San Bernard	GP C	X,RO:Wf,g	N	28.82681	-95.52348	

#	Date	Location	Pop.	Bands	Pic.	Lat.	Long.	Notes
		NWR						
281	2/27/09	Sargent Beach to San Bernard NWR	GP C	X,-:L/WA/R	N	28.82571	-95.52272	
282	2/27/09	Sargent Beach to San Bernard NWR	GP US	Gf,-:AB/R,-	N	28.82557	-95.52279	
283	2/27/09	Sargent Beach to San Bernard NWR	GP US	-, -:Gf,L/PA	Y	28.82519	-95.52278	
284	2/27/09	Sargent Beach to San Bernard NWR	GP C	Lf,BB:X,Y	N	28.82679	-95.52258	
285	2/27/09	Sargent Beach to San Bernard NWR	GP C	X,B:Lf,GY	N	28.82570	-95.52182	
286	2/27/09	Sargent Beach to San Bernard NWR	GP C	X,O:Lf,RB	N	28.82446	-95.52564	
287	2/27/09	Sargent Beach to San Bernard NWR	GP C	X,YR:Wf,Y	N	28.82446	-95.52564	
288	2/28/09	Bolivar Flats	GP C	Lf,B:X,BO	Y	29.36470	-94.73713	
289	2/28/09	Bolivar Flats	GP C	X,B:Lf,OG	Y	29.36470	-94.73713	
290	2/28/09	Bolivar Flats	GP C	Lf,Rg:X,B	Y	29.36448	-94.73828	
291	2/28/09	Bolivar Flats	GP C	X,-:Wf,YG	Y	29.36453	-94.73875	
292	2/28/09	Bolivar Flats	GP C	W,YR:-,X	Y	29.36453	-94.73875	
293	2/28/09	Bolivar Flats	GP C	X,Og:Lf,B	N	29.36453	-94.73875	
294	3/2/09	Rollover Pass – East Side of Pass	GP US	Gf,R/WB:-,-	N	29.51292	-94.49804	
295	3/2/09	Rollover Pass – East Side of Pass	GP US	X,B:Yf,OL	N	29.51298	-94.49774	