# Piping Plover 2013 Survey of the Caminada Headland, Louisiana: October 21, 2013

A Report of the:

**Barataria-Terrebonne National Estuary Program**

By:

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Prepared for the:

**Coastal Protection and Restoration Authority**

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## Introduction

Louisiana's wetland loss crises mean serious troubles for our coastal citizens, their property and livelihoods, and the productive ability of this bountiful natural system. Decades of wetland and barrier island losses are blamed for larger and larger storm surges associated with tropical storms that now routinely wreak havoc on homes and infrastructure. That same loss is also attributed to likely declines for some species of terrestrial and aquatic animals, particularly nesting seabirds. For these reasons and a myriad of others, numerous efforts have been undertaken to understand and reverse these trends if possible. Initially, it started with regional plans such as the Barataria Basin Plan followed soon after by the Barataria-Terrebonne National Estuary Program's Plan in 1996. Later, planners began looking at the coast as a whole. Published in 1998, Coast 2050 was one of the first larger scale plans to address each of the State's coastal basins. Today, years later, we're now seeing the development of the Louisiana Coastal Master Plan, last updated in 2012. Hereto this plan addresses all of the State's coastal waters and wetland habitats.

Almost occurring simultaneously with these planning efforts was the initiation of funding streams designed to provide the monetary resources needed to combat Louisiana's wetland loss problem. The Coastal Wetlands Trust Fund followed by the Coastal Wetlands Planning, Protection, and Restoration Act were the precursors to the Coastal Impact Assessment Program, Gulf of Mexico Energy Security Act of 2006 and now the Restore Act of 2012. Due to these ever increasing funding streams, Louisiana now seems poised to construct many large-scale restoration projects. While most see these projects as providing positive benefits to people and animals, short term impacts associated with active ongoing restoration efforts may pose temporary short-term problems for certain species. This project attempts to document impacts, if any, to Piping Plover and a small suite of other shorebirds that may directly result from construction activities of the CPRA's Caminada Beach and Dune Restoration Project (BA-45).

Caminada Headland Beach and Dune Restoration Project (BA-45)

Soon, the Caminada Headland Beach and Dune Restoration Project (BA-45) will be in the construction phase. Expected to begin in early 2013, the goal of this project is to protect and preserve the structural integrity of the barrier shoreline and provide for restoration of hydrologic conditions, ecosystem processes, and habitats of the Caminada Headland (Figure 1).

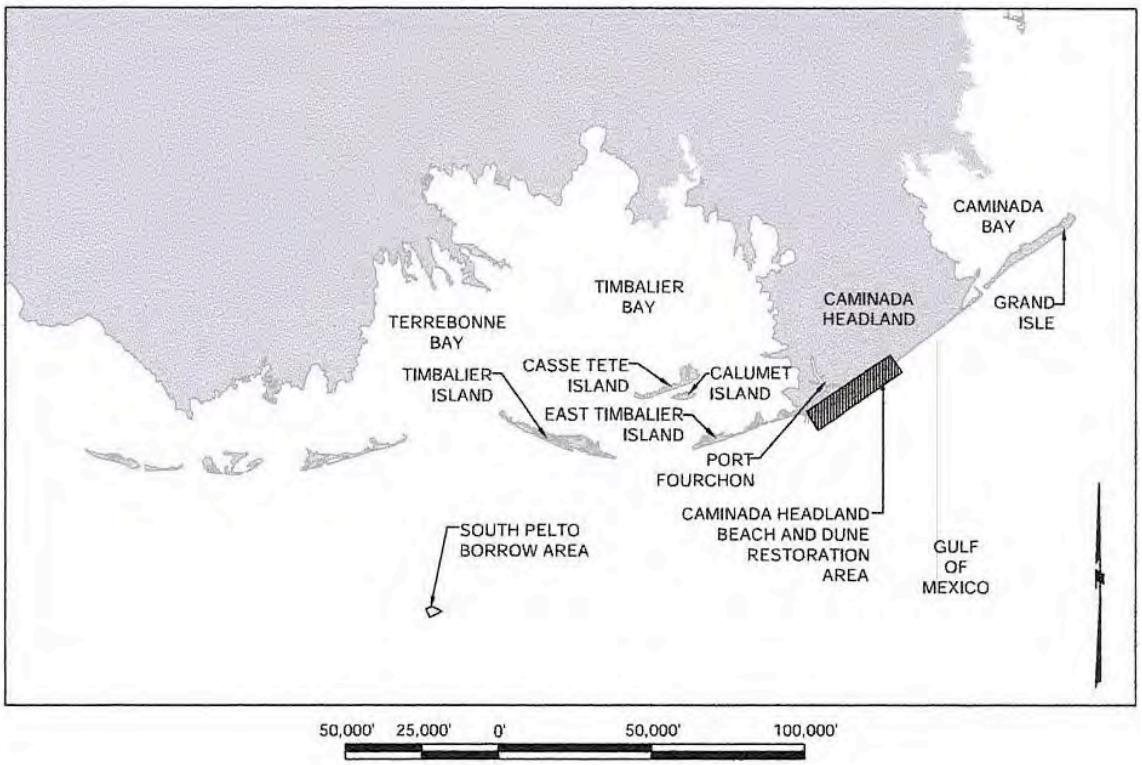


Figure 1. Location of the Caminada Headland Project.

Benefits of restoration of the headland shoreline would protect and sustain significant and unique coastal habitats important to foraging and nesting terns, plovers, gulls, and many other bird species including the endangered Piping Plover (*Charadrius melodus*). Both spring/summer breeding bird surveys of nesting Wilson's Plover (*Charadrius wilsonia*) and Least Tern (*Sternula antillarum*) along with winter surveys of Piping Plover have shown the Caminada Headland to be important nesting/foraging areas for these and other birds.

In addition, the Gulf of Mexico is a key wintering area for Piping Plover with much of it designated as critical habitat under the Endangered Species Act (ESA). Data from the International Piping Plover Survey, conducted every five years since 1991, indicate that 73-93% of all wintering plovers counted have been on the shores of the Gulf of Mexico. Therefore protection and restoration of these critical habitats are warranted. Figure 2 defines both the breeding range and wintering range for this species. Figure 3 defines critical habitat for Piping Plover in the Port Fourchon area of Louisiana.


Figure 2. Piping Plover Breeding and Winter Range (courtesy of Cornell Laboratory of Ornithology).

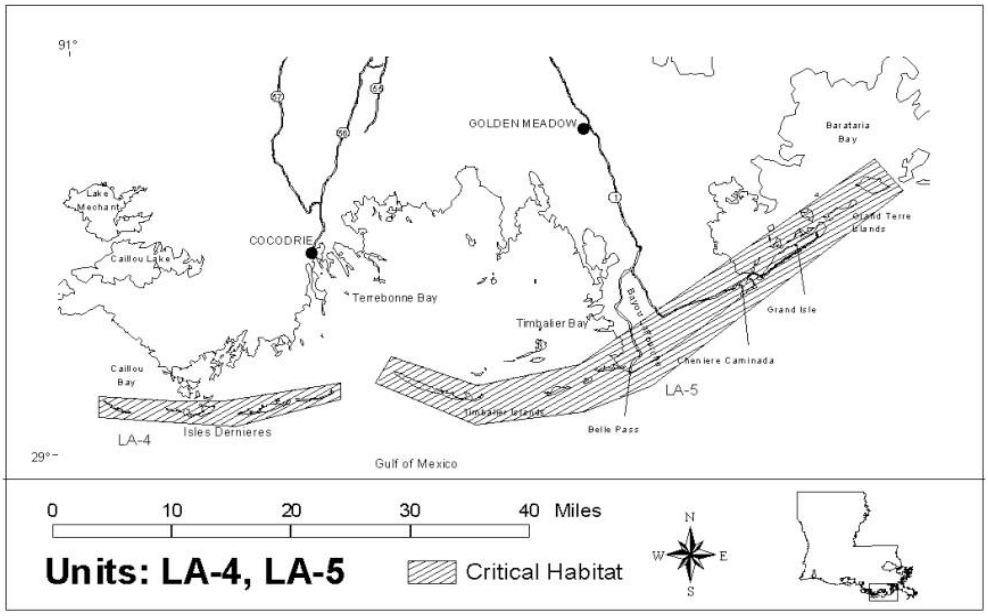


Figure 3. Critical Habitat Designated for Piping Plover along the lower Louisiana coastline.

A condition of the 404 and Coastal Use permit for the Caminada Headland Beach and Dune Restoration Project requires both winter surveys for Piping Plover and breeding bird surveys in the spring. An ongoing series of surveys/reports will be undertaken/developed prior to, during, and post construction. These reports will present the findings of the numerous surveys conducted throughout the life of the project.

## Survey Methodology

Permit requirements necessitate Piping Plover surveys both prior to construction and during construction of the project following methods outlined within the Louisiana Piping

Plover Non-Breeding Season Survey Guidelines with observations recorded on provided field census forms (Appendix D, FWS, 2010).

The first pre-construction survey was conducted on September 28, 2012 by a team of qualified observers who surveyed all suitable open habitats (beach, algal flat, wrack line, and other intertidal and sub-tidal flats) in an attempt to identify all Piping Plover across much of the Caminada Headland. The September 2012 survey covered approximately 11 miles of beachfront from Belle Pass (mouth of bayou Lafourche) east to the Elmer's Island entrance road. Subsequent surveys conducted on October 30, 2012, November 28, 2012, January 11, 2013, January 24, 2013, February 6, 2013, February 20, 2013, March 7, 2013, March 20, 2013, April 5, 2013, July 29, 2013, August 12, 2013, August 28, 2013, September 11, 2013, September 25, 2013 and October 9, 2013 employed the same methodology as previous surveys. The geographic extent of these more recent surveys may have covered more beachfront habitats. Surveys conducted prior to July 2013 were pre-construction surveys while all subsequent surveys were during the construction phase of the restoration project.

This survey, completed on October 21, 2013, also utilized the same methodology as previous surveys. Coverage for this sixteenth survey included the geographic area between Belle Pass on the west to Caminada Pass on the east including Elmer's Island; a distance of 13 miles (Figure 4).

The study site was divided up into 4 - 5 sections and was surveyed on foot. Surveyors walked the length of each section, using binoculars and spotting scopes to identify target species and document band combinations. Parts of the survey site were expansive and surveyors had to spread out across the beach to account for birds located among the various habitats.


Figure 4. Green line represents the geographic extent of the survey.

Each surveyor collected the following: coordinates, number of individuals, color band combinations if applicable, and photo documentation if possible. Additional data collected included: 1) location on the beach (bay, gulf shoreline or open beach) and 2) behavioral activity (loafing, foraging, aggressive behavior, and/or flying.)

Surveyors collected this information for Piping Plovers (*Charadrius melodus*), Snowy Plovers (*Charadrius nivosus*), Wilson's Plover (*Charadrius wilsonia*), and Red Knot (*Calidris canutus*), and counted and identified any other bird species encountered.

## Survey Results

The survey conducted on October 21, 2013 resulted in the detection of 86 Piping Plover, two Snowy Plover, ten Wilson's Plover, and 24 Red Knot. Figure 5 depicts the distribution of birds for this particular survey.

During the survey, tides were relatively low with moderate winds. Piping Plover were evenly distributed during this survey between the gulf shoreline and back bay which is inconsistent with recent surveys where the bulk of foraging Piping Plover were typically found along the immediate gulf shoreline. The transition from foraging along the gulf shoreline to the back bays as winter progresses could be a typical annual transition either driven by the exposure of back bay areas due to extreme low tides or a change in available prey/abundance between locations, or a combination of both. Efforts will be made to assess future data as winter continues and define whether this is a real phenomenon.

Figure 6 provides data from a nearby water gauge showing tidal range during the survey period. The data clearly indicate low tide during the bulk of the survey period.

Human traffic was extensive between Elmer's Island to Bayou Moreaux as new oil mats were found on the beach since the last storm event only several weeks earlier. Routine sighting of people and equipment occurred all throughout the survey period that day

likely causing birds to move up and down the beach.  This made conducting these surveys more difficult as it is likely some birds already documented were flushed and re-documented further down the beach.

Of the 86 Piping Plovers encountered, 21 individuals were color banded. Eighteen and possibly up to 1 other were observed during previous surveys.

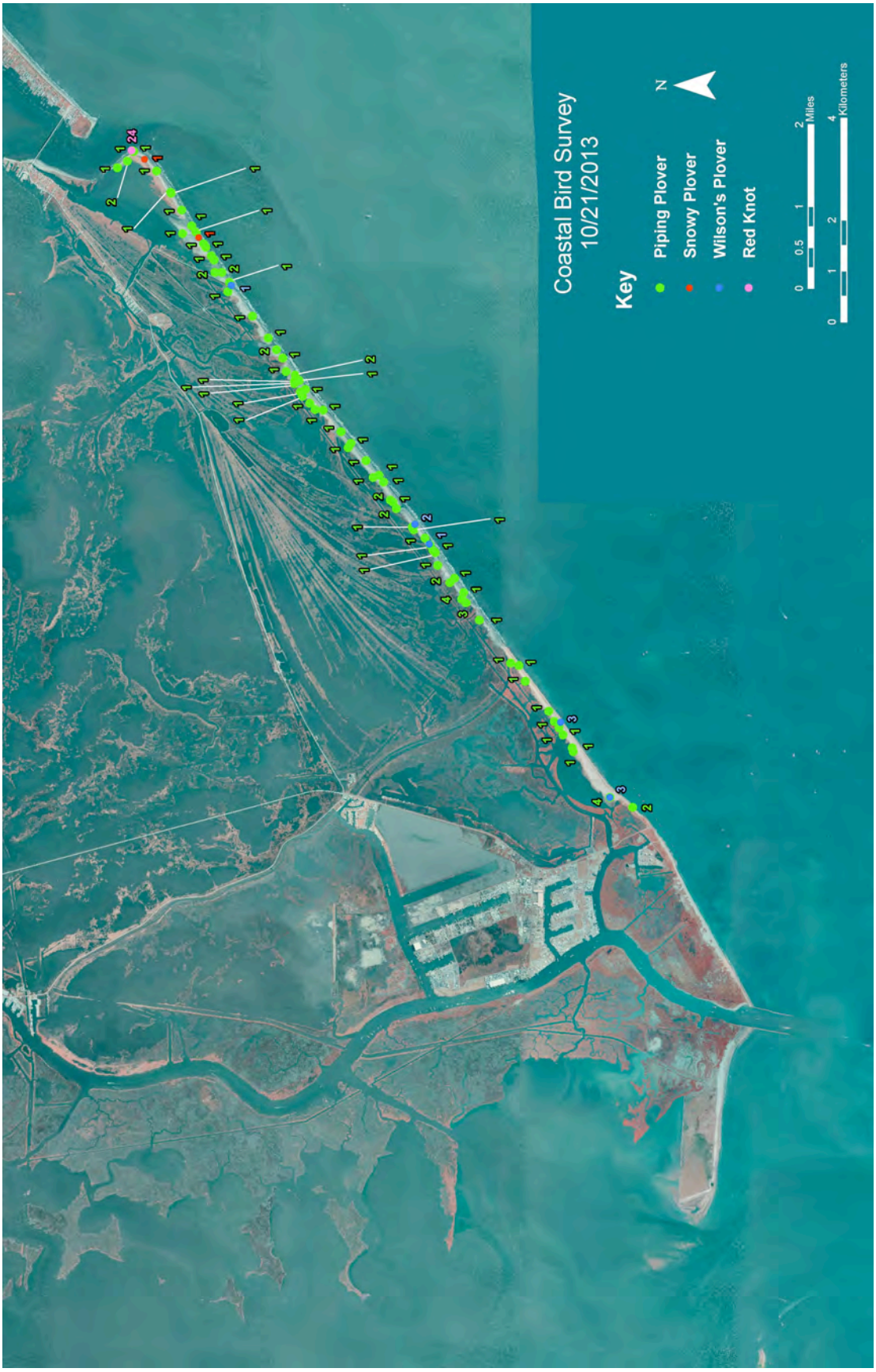


Figure 5. Locations and abundance of select shorebird species.

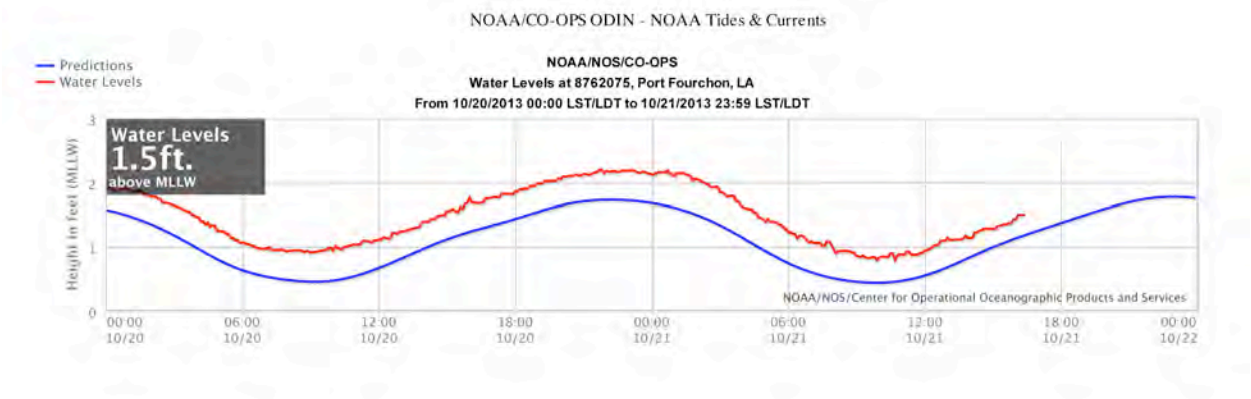


Figure 6. Predicted Tidal Range and Water Levels prior to and during the day of the survey.

Figure 7: Red Knots observed during October 21, 2013 survey.

## Acknowledgments:

We thank the Coastal Protection and Restoration Authority for funding this project. We thank the Wisner Foundation for their support of this project and their approval to access their property. We also would like to thank the following surveyors who helped to make this project possible. They include Delaina LeBlanc, Dan O'Malley, Donald Norman, Tori Bacheler, Dave Patton, Donna Dittmann, Steve Cardiff, Michael Plauchè, Lori Booth, Jeff Leichty, Nicole Norrelli, Heather Fraser, Natalie Waters, Katarina Hashagen, Michael Massimi, and Erik Johnson. We also thank Robbie Smith (Greater Lafourche Port Commission) and Forrest Travirca, III (Wisner Foundation) for providing logistical support.

## APPENDIX D

## Non-breeding Piping Plover Survey Guidelines

## Louisiana Piping Plover Non-Breeding Season Survey Guidelines

The purpose of these guidelines is to assess and/or monitor piping plover use of coastal restoration features related to the Barataria Basin Barrier Shoreline Restoration Project. Survey locations should include the coastal restoration features plus adjacent suitable shorebird habitat (i.e., intertidal beaches, mud flats, sand flats, algal flats, wash-over passes, and associated dunes and flats above annual high tide). Monitoring should be conducted July 15 through May 15 to follow the International Shorebird Survey (ISS) census dates listed below. The ISS schedule usually results in three surveys per month. If this is not feasible, try to do at least two surveys per month on the ISS census dates. Surveys should be conducted on ISS dates plus or minus two days. For example, a survey scheduled for the 15th could be conducted on any day between the 13th through the 17th of that month.

| Spring Migration | Fall Migration | Winter |
|---|---|---|
| February 25 | July 15 | October 15 |
| March 5 | July 25 | October 25 |
| March 25 | August 5 | November 5 |
| April 5 | August 15 | November 15 |
| April 15 | August 25 | November 25 |
| April 25 | September 5 | December 5 |
| May 5 | September 15 | December 15 |
| May 15 | September 25 | December 25 |
| | October 5 | January 5 |
| | | January 15 |
| | | January 25 |
| | | February 5 |
| | | February 15 |

To the extent possible, surveys should be conducted when birds are foraging. The best time is at low tide, but surveys can also be conducted on a falling or rising tide provided that the foraging areas are not completely covered. During high tide, birds will be roosting. Although Piping Plovers often roost near foraging areas, the birds will be more difficult to locate. Avoid conducting surveys during poor weather conditions (e.g. high winds, rain).

**Methods**

In most cases surveys will be conducted by foot. All terrain vehicles (ATVs) may be used to expedite the transport of observers over long stretches of linear routes ("leapfrogging" teams down a beach in 0.5 to 1 mile increments), but all bird counting will be conducted while walking. (**Driving on vegetated areas shall not be permitted. Any ATV use should be coordinated with the Louisiana Department of Wildlife and Fisheries" Isles Dernieres Wildlife Refuge management staff**.) Birds on exposed mudflats that may be inaccessible by foot should be counted from boats. Each survey crew should use their best professional judgment on the most efficient way to conduct the survey and should document in detail if any deviations to these guidelines are deemed necessary.

Observers should work in teams of two to four people, depending on the width of the beach and beach/tidal interface. Wide coastal beaches will require a greater number of observers in order to assure that birds are not missed on the back (aft) side of the dune. Observers working on beaches that contain moderate to high dunes should climb them every 0.5 to 1 mile and look for wash-over flats and pools that may not be visible from the beach. Coastal islands will be surveyed on both the gulf and bay sides (this may require multiple teams of observers in order to finish the surveys in a timely manner).

Piping Plover locations will be recorded with global positioning system (GPS) units. GPS locations will be recorded in universal transverse Mercator (UTM) map datum NAD 83 CONUS. Each survey team should carry aerial photography of the survey route so that new breaks (cuts) in the beach or island can be noted on the survey maps. Habitat

data will also be collected and will include foraging substrate, portion of the beach used and side of the island on which the birds are found (see attached data sheet). These habitat criteria have been adapted from the 2006 International Winter Piping Plover Census organized by the U.S. Geological Survey. Behavioral data (e.g., foraging, roosting, preening, bathing, flying, aggression, walking) of Piping Plovers when seen should also be documented.

Negative data is as important as positive data. Indicate when surveys have been done and no birds where observed. Although Piping Plovers are the target species, any additional observations of other species would help the U. S. Fish and Wildlife Service to identify shorebird concentration areas and management needs.

**Louisiana Piping Plover Survey Form**

*(Note: Most criteria adopted from the 2006 Wintering Piping Plover Census Form)*

A. Total # Piping Plovers Observed: ___86_____

B. Location Description (Name): __Caminada Headland_____

1 Parish: __Lafourche and Jefferson_____

2 UTM location NAD 83 CONUS (center):

3 Northing_____ Easting_____

4 Land Ownership: __Federal _X_State __Municipal _X_Private __County __Tribal

C. Date of survey:___October 21, 2013_____ Time survey conducted: __8:30AM__to __2:30PM__

D. Weather Conditions:

1 Tide stage(s): _X_Low __Mid __High (_X__Rising / _X_Falling)

2 General weather: __Sunny __Partly cloudy _X_Overcast __Rain __Fog __Other

3 Approximate temperature: __70s__ Fahrenheit

4 Wind speed: _5-10__miles/hr Wind direction:__E___

E. Description of Habitat Surveyed (check as many as apply). The Code designation will be used in Section F table below:

· **Body of Water Type**: ____I. Ocean ____II. Protected bay, harbor, cove, lagoon __X__III. Gulf of Mexico ____IV. Ocean Inlet ____V. Other describe)_____

· **Shoreline Type**:

_X__A. Mainland ____B. Barrier Island ____C. Spoil Island ____D. Bar

____E. Other Island ____F. Washover area ____G. Other (describe)_____

· **Specific Description**:

__**X**_1. Sand beach ____2. Sand spit ____3. Sand flat ____4. Sand bar

____5. Salt flat ____6. Gravel shore ____7. Oyster reef _X__8. Mudflat

____9. Vegetation (algal) mat ____10. Vegetated shoreline

____11. Other (describe)_____

· **Location Description** (criteria for islands only):

____ i. Gulf-side of island ____ii. Bay-side of island

____a. Tidal interface ____b. Fore dune ____c. Top of dune ____d. Aft dune

F. Numbers, behaviors, habitat types, and GPS location(s) of Piping Plovers observed (mark on map if possible).

| **Number of Plovers Observed** | **Behavior Displayed** *(e.g., foraging, roosting, preening, walking, flying, aggression, etc.)* | **Habitat Type where Plovers were found** *Use designations from Section E above, e.g., IIC8ii, IIIB9ia* | **UTM Location** ***Northing*** | **UTM Location** ***Easting*** |
|---|---|---|---|---|
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G Mode(s) of transportation:
__X__Foot ____Car/Truck ____ATV ____Boat ____Airboat ____Other_____

H. Habitat (shoreline) covered: __13___miles (please calculate using aerial photograph's scale)

I. Observers: _Delaina Leblanc, Richard DeMay, Erik Johnson, Tori Bacheler, Dan O'Malley, Michael Massimi, and Donald Norman_
_____

J. Additional comments or notes: _____
_____
_____

K. Additional species encountered (for flying flocks lump as peeps and estimate number). Species of special interest are listed below; please add any additional species.

| OTHER SPECIES | TOTAL# | OTHER SPECIES | TOTAL# |
|---|---|---|---|
| Reddish Egret | 9 | | |
| Marbled Godwit | 0 | | |
| Red Knot | 24 | | |
| Western Sandpiper | 127 | | |
| Stilt Sandpiper | 0 | | |
| Short-billed/Long-billed Dowitcher | 3 | | |
| Snowy Plover | 2 | | |
| Wilson's Plover | 10 | | |
| Long-billed Curlew | 0 | | |
| American Oystercatcher | 0 | | |
| | | | |
| | | | |
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**TARGET BIRDS OBSERVED:**

| | | | | | | BANDS/FLAGS | | | |
|---|---|---|---|---|---|---|---|---|---|
| DATE | OBSERVER | SPECIES | COORDINATES | | # | UL | LL | UR | LR |
| 10/21/13 | DL | PIPL | 29.14238 | -90.12698 | 1 | Y# - Flag | Y/K | S | B/O |
| 10/21/13 | DL | PIPL | 29.14155 | -90.12840 | 1 | - | - | - | - |
| 10/21/13 | DL | PIPL | 29.14102 | -90.12952 | 1 | G - Flag | B/Peach | G | - |
| 10/21/13 | DL | PIPL | 29.14066 | -90.13003 | 1 | - | - | - | - |
| 10/21/13 | DL | PIPL | 29.13736 | -90.13532 | 1 | - | - | - | - |
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| 10/21/13 | DL | PIPL | 29.12636 | -90.15331 | 1 | - | - | - | - |
| 10/21/13 | EJ | PIPL | 29.14460 | -90.12468 | 1 | - | - | - | - |
| 10/21/13 | EJ | PIPL | 29.14437 | -90.12530 | 1 | LB - Flag | G/K | S | Y/A |
| 10/21/13 | EJ | PIPL | 29.14027 | -90.13260 | 1 | - | - | - | - |
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| 10/21/13 | EJ | PIPL | 29.13545 | -90.14034 | 3 | - | - | - | - |
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| 10/21/13 | EJ | PIPL | 29.12530 | -90.15649 | 1 | - | - | - | - |
| 10/21/13 | EJ | PIPL | 29.12126 | -90.16265 | 1 | - | - | - | - |
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| 10/21/13 | EJ | PIPL | 29.11951 | -90.16606 | 1 | - | - | - | - |
| 10/21/13 | EJ | PIPL | 29.11882 | -90.16750 | 1 | - | - | - | - |
| 10/21/13 | EJ | PIPL | 29.11726 | -90.17021 | 1 | S | - | Y# - Flag | - |

| | | | | | | BANDS/FLAGS | | | |
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| 10/21/13 | EJ | PIPL | 29.10677 | -90.18252 | 2 | - | - | - | - |
| 10/21/13 | RD | PIPL | 29.16686 | -90.08983 | 1 | - | - | - | - |
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| 10/21/13 | RD | PIPL | 29.16402 | -90.09451 | 1 | - | - | - | - |
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| 10/21/13 | RD | PIPL | 29.15513 | -90.10745 | 1 | S | P/G | Y# - Flag | LB/LB |
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| 10/21/13 | DN | PIPL | 29.17633 | -90.07609 | 1 | - | - | - | - |
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| 10/21/13 | RD | PIPL | 29.16936 | -90.08568 | 1 | G - Flag | G/Y | - | B/G |
| 10/21/13 | RD | PIPL | 29.16795 | -90.08815 | 2 | - | - | - | - |
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| 10/21/13 | TB | PIPL | 29.17728 | -90.07215 | 2 | - | - | - | - |
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| 10/21/13 | TB | PIPL | 29.18410 | -90.05936 | 1 | - | - | - | - |
| 10/21/13 | TB | PIPL | 29.18590 | -90.05592 | 1 | S | Y/G | LB - Flag | R/R |

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|---|---|---|---|---|---|---|---|---|---|
| DATE | OBSERVER | SPECIES | COORDINATES | | # | UL | LL | UR | LR |
| 10/21/13 | TB | PIPL | 29.18600 | -90.05565 | 1 | S? | K | Y - Flag | - |
| 10/21/13 | TB | PIPL | 29.18842 | -90.05133 | 1 | - | - | - | - |
| 10/21/13 | TB | PIPL | 29.19241 | -90.04724 | 1 | - | - | - | - |
| 10/21/13 | TB | PIPL | 29.19265 | -90.04704 | 1 | G - Flag | G/R | - | B/G |
| 10/21/13 | DO | PIPL | 29.18410 | -90.06413 | 1 | G - Flag | Y/Y | - | B/G |
| 10/21/13 | DO | PIPL | 29.19354 | -90.04916 | 2 | S | - | Y# - Flag | - |
| 10/21/13 | DO | PIPL | 29.19536 | -90.05044 | 1 | - | - | - | - |
| 10/21/13 | TB | REKN | 29.19272 | -90.04698 | 24 | - | - | - | - |
| 10/21/13 | TB | SNPL | 29.18120 | -90.06495 | 1 | - | - | - | - |
| 10/21/13 | TB | SNPL | 29.19045 | -90.04886 | 1 | - | - | - | - |
| 10/21/13 | DL | WIPL | 29.14409 | -90.12417 | 2 | - | - | - | - |
| 10/21/13 | DL | WIPL | 29.14165 | -90.12825 | 1 | - | - | - | - |
| 10/21/13 | DL | WIPL | 29.11914 | -90.16496 | 3 | - | - | - | - |
| 10/21/13 | EJ | WIPL | 29.11074 | -90.18041 | 3 | - | - | - | - |
| 10/21/13 | RD | WIPL | 29.17562 | -90.07483 | 1 | - | - | - | - |

TOTAL PIPL: 86
TOTAL BANDED PIPL: 21

MINIMUM # PIPL RESIGHTED FROM EARLIER SURVEYS: 18
MAXIMUM # PIPL RESIGHTED FROM EARLIER SURVEYS: 19

TOTAL REKN: 24
TOTAL SNPL: 2
TOTAL WIPL: 10

SPECIES: PIPL – Piping Plover, SNPL – Snowy Plover, WIPL – Wilson's Plover, REKN - Red Knot

BAND/FLAG Colors: LB-Light Blue, G-Green, Y-Yellow, P-Pink, HP-Hot Pink, LG-Light Green, W-White, A-Gray, K-Black, B-Blue, R-Red, S-Metal, MG-Mint Green, O=Orange, T=Tan, V=Violet

BAND/FLAG Positions: UL-Upper Left, LL-Lower Left, UR-Upper Right, LR-Lower Right

OBSERVERS: DL-Delaina Leblanc, EJ-Erik Johnson, TB-Tori Bacheler, RD-Richard DeMay, DO-Dan O'Malley, MM-Michael Massimi, DN-Donald Norman

## TOTAL BIRDS OBSERVED:

| | Michael Massimi<br>East Belle Pass to 3090 | Erik Johnson & Delaina LeBlanc<br>Bay Champagne to Bayou Moreau | Richard DeMay & Donald Norman<br>Parish Line to Elmer's Island Entrance | Richard DeMay & Donald Norman<br>Bayou Moreau to Parish Line | Tori Bacheler & Dan O'Malley<br>Elmer's Island | **TOTAL** |
|---|---|---|---|---|---|---|
| Snow Goose | 0 | 0 | 0 | 0 | 0 | **0** |
| Canada Goose | 1 | 0 | 0 | 0 | 0 | **1** |
| Gadwall | 0 | 0 | 0 | 0 | 0 | **0** |
| Mottled Duck | 0 | 0 | 3 | 2 | 0 | **5** |
| Blue-winged Teal | 0 | 0 | 0 | 0 | 0 | **0** |
| Northern Shoveler | 0 | 0 | 0 | 0 | 3 | **3** |
| Green-winged Teal | 0 | 0 | 0 | 0 | 0 | **0** |
| Redhead | 0 | 0 | 0 | 0 | 0 | **0** |
| Ring-necked Duck | 0 | 0 | 0 | 0 | 0 | **0** |
| Lesser Scaup | 0 | 0 | 0 | 0 | 0 | **0** |
| Aythya sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Black Scoter | 0 | 0 | 0 | 0 | 0 | **0** |
| Bufflehead | 0 | 0 | 0 | 0 | 0 | **0** |
| Hooded Merganser | 0 | 0 | 0 | 0 | 0 | **0** |
| Red-breasted Merganser | 0 | 0 | 0 | 0 | 0 | **0** |
| Duck sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Magnificent Frigatebird | 0 | 0 | 0 | 0 | 0 | **0** |
| Common Loon | 0 | 0 | 0 | 0 | 0 | **0** |
| Pied-billed Grebe | 0 | 0 | 0 | 0 | 0 | **0** |
| Northern Gannet | 0 | 0 | 0 | 0 | 0 | **0** |
| Double-crested Cormorant | 8 | 85 | 18 | 10 | 30 | **151** |
| American White Pelican | 24 | 635 | 3 | 44 | 95 | **801** |
| Brown Pelican | 880 | 1040 | 9 | 367 | 11 | **2307** |
| Least Bittern | 0 | 0 | 0 | 0 | 0 | **0** |
| Great Blue Heron | 5 | 10 | 2 | 4 | 4 | **25** |
| Great Egret | 4 | 24 | 3 | 11 | 3 | **45** |
| Snowy Egret | 6 | 10 | 2 | 3 | 5 | **26** |
| Little Blue Heron | 120 | 0 | 0 | 0 | 0 | **120** |
| Tricolored Heron | 0 | 7 | 1 | 5 | 2 | **15** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Reddish Egret | | 0 | 4 | 1 | 1 | 3 | **9** |
| Cattle Egret | | 0 | 0 | 0 | 0 | 0 | **0** |
| Green Heron | | 0 | 0 | 0 | 0 | 0 | **0** |
| Black-crowned Night-Heron | | 0 | 2 | 1 | 0 | 0 | **3** |
| Yellow-crowned Night-Heron | | 0 | 0 | 0 | 0 | 0 | **0** |
| White Ibis | | 1 | 32 | 9 | 9 | 7 | **58** |
| Plegadis | | 0 | 0 | 0 | 0 | 0 | **0** |
| Roseate Spoonbill | | 0 | 1 | 1 | 0 | 17 | **19** |
| Osprey | | 1 | 5 | 2 | 1 | 2 | **11** |
| Northern Harrier | | 0 | 4 | 0 | 3 | 0 | **7** |
| Rough-legged Hawk | | 0 | 0 | 0 | 0 | 0 | **0** |
| Cooper's Hawk | | 0 | 0 | 0 | 0 | 0 | **0** |
| Clapper Rail | | 0 | 12 | 1 | 5 | 0 | **18** |
| Virginia Rail | | 0 | 0 | 1 | 0 | 0 | **1** |
| American Coot | | 0 | 0 | 0 | 0 | 0 | **0** |
| Black-bellied Plover | | 0 | 53 | 6 | 25 | 18 | **102** |
| American Golden-Plover | | 0 | 0 | 0 | 0 | 0 | **0** |
| Snowy Plover | | 0 | 0 | 0 | 0 | 2 | **2** |
| Wilson's Plover | | 0 | 9 | 1 | 0 | 0 | **10** |
| Semipalmated Plover | | 7 | 27 | 8 | 18 | 28 | **88** |
| Piping Plover | | 0 | 34 | 6 | 26 | 20 | **86** |
| Killdeer | | 0 | 0 | 0 | 0 | 0 | **0** |
| American Oystercatcher | | 0 | 0 | 0 | 0 | 0 | **0** |
| Black-necked Stilt | | 0 | 0 | 0 | 0 | 0 | **0** |
| American Avocet | | 0 | 0 | 0 | 0 | 18 | **18** |
| Spotted Sandpiper | | 0 | 0 | 0 | 0 | 0 | **0** |
| Greater Yellowlegs | | 0 | 7 | 1 | 1 | 7 | **16** |
| Solitary Sandpiper | | 0 | 0 | 0 | 0 | 0 | **0** |
| Willet | | 9 | 31 | 10 | 17 | 12 | **79** |
| Lesser Yellowlegs | | 0 | 0 | 0 | 0 | 0 | **0** |
| Greater/Lesser Yellowlegs | | 0 | 0 | 0 | 0 | 0 | **0** |
| Whimbrel | | 0 | 0 | 0 | 0 | 0 | **0** |
| Long-billed Curlew | | 0 | 0 | 0 | 0 | 0 | **0** |
| Marbled Godwit | | 0 | 0 | 0 | 0 | 0 | **0** |
| Ruddy Turnstone | | 0 | 33 | 2 | 6 | 8 | **49** |
| Red Knot | | 0 | 0 | 0 | 0 | 24 | **24** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sanderling | 49 | 146 | 22 | 53 | 59 | **329** |
| Semipalmated Sandpiper | 0 | 0 | 0 | 0 | 0 | **0** |
| Western Sandpiper | 12 | 9 | 0 | 10 | 96 | **127** |
| Semipalmated/Western Plover | 0 | 0 | 0 | 0 | 0 | **0** |
| Least Sandpiper | 0 | 33 | 14 | 18 | 19 | **84** |
| Pectoral Sandpiper | 0 | 0 | 0 | 0 | 0 | **0** |
| Baird's Sandpiper | 0 | 0 | 0 | 0 | 0 | **0** |
| Dunlin | 1 | 24 | 0 | 15 | 19 | **59** |
| Buff-breasted Sandpiper | 0 | 0 | 0 | 0 | 0 | **0** |
| Stilt Sandpiper | 0 | 0 | 0 | 0 | 0 | **0** |
| peep sp. | 6 | 0 | 0 | 0 | 0 | **6** |
| Short-billed Dowitcher | 0 | 0 | 0 | 0 | 0 | **0** |
| Long-billed Dowitcher | 0 | 0 | 0 | 0 | 0 | **0** |
| Short-billed/Long-billed Dowitcher | 0 | 0 | 0 | 3 | 0 | **3** |
| shorebird sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Boneparte's Gull | 0 | 0 | 0 | 0 | 0 | **0** |
| Laughing Gull | 879 | 143 | 51 | 1 | 19 | **1093** |
| Ring-billed Gull | 0 | 1 | 0 | 0 | 1 | **2** |
| Herring Gull | 9 | 5 | 0 | 1 | 0 | **15** |
| Lesser Black-backed Gull | 0 | 2 | 1 | 0 | 1 | **4** |
| Glaucous Gull | 0 | 0 | 0 | 0 | 0 | **0** |
| Gull sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Least Tern | 0 | 0 | 0 | 0 | 0 | **0** |
| Gull-billed Tern | 0 | 0 | 0 | 0 | 0 | **0** |
| Caspian Tern | 3 | 195 | 91 | 26 | 50 | **365** |
| Black Tern | 0 | 0 | 0 | 0 | 0 | **0** |
| Common Tern | 0 | 0 | 0 | 0 | 0 | **0** |
| Forster's Tern | 7 | 0 | 3 | 0 | 0 | **10** |
| Royal Tern | 73 | 45 | 30 | 18 | 90 | **256** |
| Sandwich Tern | 0 | 0 | 0 | 0 | 0 | **0** |
| Tern sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Black Skimmer | 0 | 0 | 0 | 0 | 2 | **2** |
| Eurasian Collared-Dove | 0 | 0 | 0 | 0 | 0 | **0** |
| White-winged Dove | 0 | 34 | 8 | 0 | 0 | **42** |
| Mourning Dove | 24 | 7 | 1 | 0 | 0 | **32** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Short-eared Owl | 0 | 0 | 0 | 0 | 0 | **0** |
| Yellow-billed Cuckoo | 0 | 0 | 0 | 0 | 0 | **0** |
| Chimney Swift | 0 | 0 | 0 | 0 | 0 | **0** |
| Ruby-throated Hummingbird | 0 | 0 | 0 | 0 | 0 | **0** |
| Belted Kingfisher | 0 | 0 | 1 | 0 | 0 | **1** |
| American Kestrel | 0 | 0 | 0 | 0 | 1 | **1** |
| Merlin | 0 | 0 | 0 | 1 | 0 | **1** |
| Peregrine Falcon | 0 | 3 | 0 | 1 | 1 | **5** |
| Eastern Phoebe | 0 | 0 | 0 | 0 | 0 | **0** |
| Eastern Wood-Peewee | 0 | 0 | 0 | 0 | 0 | **0** |
| Red-eyed Vireo | 0 | 0 | 0 | 0 | 0 | **0** |
| Eastern Kingbird | 0 | 0 | 0 | 0 | 0 | **0** |
| Loggerhead Shrike | 0 | 0 | 0 | 0 | 0 | **0** |
| American Crow | 0 | 0 | 0 | 0 | 0 | **0** |
| Common Nighthawk | 0 | 0 | 0 | 0 | 0 | **0** |
| Yellow-bellied Flycatcher | 0 | 0 | 0 | 0 | 0 | **0** |
| Purple Martin | 0 | 0 | 0 | 0 | 0 | **0** |
| Northern Rough-winged Swallow | 0 | 0 | 0 | 0 | 0 | **0** |
| Tree Swallow | 0 | 0 | 0 | 0 | 0 | **0** |
| Bank Swallow | 0 | 0 | 0 | 0 | 0 | **0** |
| Barn Swallow | 0 | 0 | 0 | 3 | 0 | **3** |
| Cliff Swallow | 0 | 0 | 0 | 0 | 0 | **0** |
| Swallow sp. | 0 | 0 | 0 | 0 | 0 | **0** |
| Sedge Wren | 0 | 4 | 0 | 0 | 0 | **4** |
| Marsh Wren | 0 | 22 | 19 | 7 | 4 | **52** |
| Ruby-crowned Kinglet | 0 | 0 | 0 | 0 | 0 | **0** |
| Wood Thrush | 0 | 0 | 0 | 0 | 0 | **0** |
| Gray Catbird | 0 | 0 | 0 | 0 | 0 | **0** |
| Northern Waterthrush | 0 | 0 | 0 | 0 | 0 | **0** |
| American Redstart | 0 | 0 | 0 | 0 | 0 | **0** |
| Orange-crowned Warbler | 0 | 0 | 0 | 0 | 0 | **0** |
| Prothonotary Warbler | 0 | 0 | 0 | 0 | 0 | **0** |
| Kentucky Warbler | 0 | 0 | 0 | 0 | 0 | **0** |
| Tennessee Warbler | 0 | 0 | 0 | 0 | 0 | **0** |
| Common Yellowthroat | 0 | 1 | 0 | 2 | 0 | **3** |
| Magnolia Warbler | 0 | 0 | 0 | 0 | 0 | **0** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Chestnut-sided Warbler | | 0 | 0 | 0 | 0 | 0 | **0** |
| Black-throated Green Warbler | | 0 | 0 | 0 | 0 | 0 | **0** |
| Palm Warbler | | 0 | 3 | 5 | 5 | 0 | **13** |
| Yellow-rumped Warbler | | 0 | 0 | 0 | 0 | 0 | **0** |
| Prairie Warbler | | 0 | 0 | 0 | 0 | 0 | **0** |
| Yellow Warbler | | 0 | 0 | 0 | 0 | 0 | **0** |
| Warbler sp. | | 0 | 0 | 0 | 0 | 0 | **0** |
| Savannah Sparrow | | 0 | 8 | 3 | 4 | 0 | **15** |
| Nelson's Sparrow | | 0 | 53 | 6 | 61 | 8 | **128** |
| Seaside Sparrow | | 0 | 62 | 21 | 38 | 15 | **136** |
| Swamp Sparrow | | 0 | 0 | 4 | 2 | 0 | **6** |
| White-crowned Sparrow | | 0 | 0 | 0 | 0 | 0 | **0** |
| Ammodramus sp. | | 0 | 0 | 0 | 0 | 0 | **0** |
| Dickcissel | | 0 | 0 | 0 | 0 | 0 | **0** |
| Scarlet Tanager | | 0 | 0 | 0 | 0 | 0 | **0** |
| Indigo Bunting | | 0 | 0 | 0 | 0 | 0 | **0** |
| Red-winged Blackbird | | 2 | 40 | 0 | 1 | 40 | **83** |
| Passerine sp. | | 0 | 0 | 11 | 16 | 0 | **27** |
| Orchard Oriole | | 0 | 0 | 0 | 0 | 0 | **0** |
| Boat-tailed Grackle | | 0 | 0 | 0 | 0 | 0 | **0** |