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1 October 2002

Mr. Anthony Davis
Parsons Engineering Science
8000 Centre Park Drive, Suite 200
Austin, Texas 78754

Re: Piping Plover Survey, Placement Area No. 2A, Mansfield Cut, Padre
Island – Contract No. DACW64-99-D-0005
September 2002 Survey Results
HJN 020090

Dear Anthony:

Horizon Environmental Services, Inc. conducted the second monthly survey effort for piping plovers on the Placement Area No. 2A study area (Figure 1) on September 23, 24, 25, and 26, 2002. Prior to the survey effort, Horizon verified with National Park Service personnel (Darrell Echols) that piping plovers had recently been sighted on parts of Padre Island National Seashore in September 2002. The survey was conducted by Lee Sherrod. The site was accessed by boat from Port Mansfield. The surveys were conducted according to the U.S. Fish and Wildlife Service (FWS) "Piping Plover Survey Criteria Guidelines," December 5, 1991. The surveys were conducted in the mornings and late afternoons of the four day survey period, except for the afternoon of the third day in which tide and surf conditions (due to Tropical Storm Isidore in the Gulf) were so severe as to virtually eliminate the beach zone and few birds of any type were observed that afternoon. Notes were made of the weather and tide conditions during each survey event and any human activity on the beach area. The presence of Tropical Storm Isidore in the southern Gulf resulted in unusually high tides and surf, and wind speeds of 15 to 30 mph throughout most of the survey effort; however, many birds, including piping plovers were observed on the beach area during all survey events except the afternoon of the third day.

Due to observed beach and dune erosion during the survey events, GPS readings were again made at the observed seaward edge of the dune line at various places along the study area to help document the beach modifications caused by Tropical Storm Isidore. Photographs were also made of the erosion and beach changes. It is estimated that the primary seaward dune face eroded approximately 5 to 10 feet during the four days of observation. Additionally, due to the high tides and surf, the beach habitat zone was significantly reduced during the survey period averaging 20 to 50 feet wide compared to more than 100 feet wide in April. The storm made landfall in Louisiana on Wednesday

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(25th) night. The highest tides and surf were noted that night on the study area. Several cuts between the dunes were observed to have occurred.

The survey was conducted along the approximately 3000 linear feet of beach area by slowly walking and observing each bird encountered at a distance with high-powered binoculars to prevent premature disturbance. While only the beach provided suitable habitat for piping plovers, the occurrence of all bird species observed was noted as being on the beach, in the dunes, or as a flyover. Approximate numbers or relative abundance of each species was also noted.

Between four and fifteen piping plovers were noted to be present during each of the survey episodes. Care was taken to avoid double counting of individuals as they moved up and down the beach area. Due to the narrow beach zone, this frequently required circumventing through the dunes around an observed piping plover on the beach to avoid flushing it down the beach where it might be counted again. Counts of piping plovers were made during both directional traverses of the beach area each episode to try to ensure an accurate count. Due to the storm tides and surf, the beach was not accessible to the public and no other disturbances of birds on the beach occurred except for occasional passes of Coast Guard helicopters. A single traverse of a Park Service 4-wheeler occurred sometime during the fourth day (Thursday) as a result of receding tides. However, that afternoon's observations resulted in the largest count of piping plovers, possibly also due to the calming tides and surf.

The attached matrix provides the results of the bird observations. Beach and weather conditions for each survey episode are noted below.

Survey Episode No. 1 – 9/23/02 - 5:30 pm to 7:30 pm.

In-coming high storm tide, weather variably cloudy, wind 20 to 25 mph from the north, temperatures in the low 80s. Storm tides and high surf were reaching the base of the primary dune line. The beach zone averaged 10 to 75 feet with the surf action. TS Isidore is in the Yucatan. Off-shore surf is 8 to 10 feet and tides are 1 to 2 feet higher than normal.

Survey Episode No. 2 – 9/24/02 – 10:00 am to 12:00 noon.

Although in an out-going tide cycle, storm tides are still building and surf growing to 10 to 12 feet. Weather variably cloudy, wind 15-25 mph from the north, temperatures in the mid 70s. Coast Guard helicopter flyover at 11:00 am. It sat down on beach near me at 11:25 am to query my presence there. No other human activity.

Survey Episode No. 3 – 9/24/02 – 5:30 pm to 7:30 pm.

In-coming storm tide and high surf action to edge of dunes. Weather clear, wind 20 to 30 mph from the north, temperatures in the low 80s. No other human activity.



Survey Episode No. 4 – 9/25/02 – 10:00 am to 12:00 noon.

Tide lower, but surf still high and rough. Beach zone averaging 20 to 50 feet wide with the surf action. Weather PC, temperatures in the low 80s, wind 20 to 25 mph from the north. Dune erosion occurring with vertical faces on most primary dunes and many fore-dunes nearly gone. Cuts between dunes forming in places. Tidal debris observed 3 to 4 feet high in the dunes. TS Isidore in central Gulf and approaching Louisiana. Found one dead brown pelican on the beach. Cause of death undeterminable.

Survey Episode No. 5 – 9/25/02 – 5:00 pm to 6:30 pm. Event considered poor due to extreme high tides and surf – low bird presence and activity. Storm tide and surf encroaching into the dunes. Beach zone 0 to 50 feet wide with surf action. Dune erosion observed and cuts between some dunes becoming significant. Weather PC, wind 15 to 20 mph from the north, temperatures in the mid 80s. Many birds observed to be taking refuge in the dunes from the extreme surf and tides. Helicopter flyover about 5:45.

Survey Episode No. 6 – 9/26/02 – 10:00 am to 12:00 noon. TS Isidore made landfall in Louisiana last night. Highest tides and surf occurred last night with tidal debris 5 to 6 feet high in the dunes. Storm tides and surf beginning to recede this am. Beach zone 20 to 75 feet wide. Weather clear, temperature in the high 70's, wind 5 to 15 mph from the north. Helicopter flyover about 10:45 am.

Survey Episode No. 7 – 9/26/02 – 5:30 pm to 7:00 pm. Tides and surf down considerably, but still higher than normal. Beach zone 25 to 75 feet wide. Weather clear, temperature in low 90's, wind about 5 mph. Tracks of 4-wheeler observed on the beach. No other human activity.

Please call if you have questions.

Sincerely,



C. Lee Sherrod
Principal



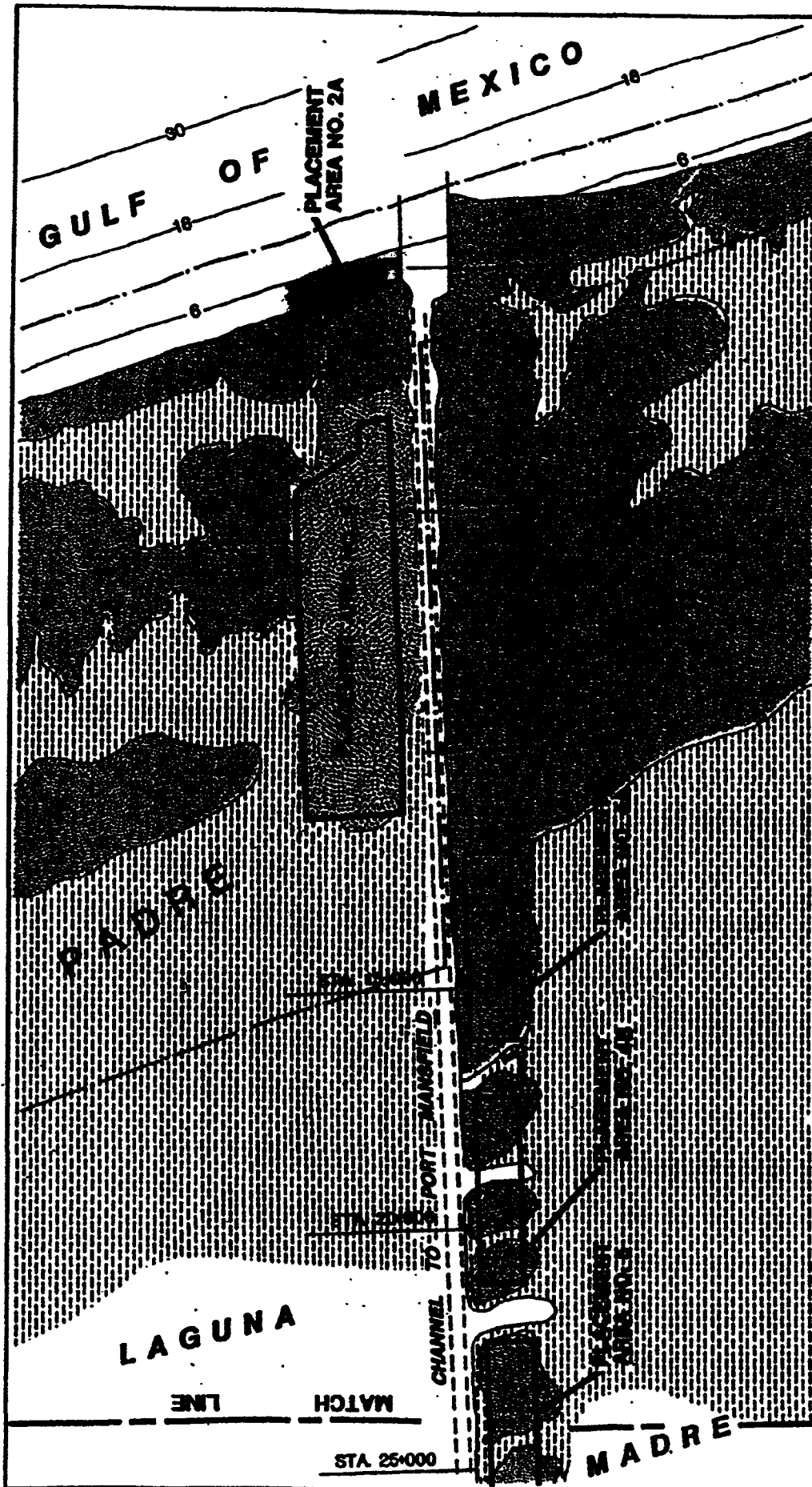


Figure 1:
CHANNEL TO PORT MANSFIELD
DREDGED MATERIAL
PLACEMENT SITES
WILLACY COUNTY, TEXAS

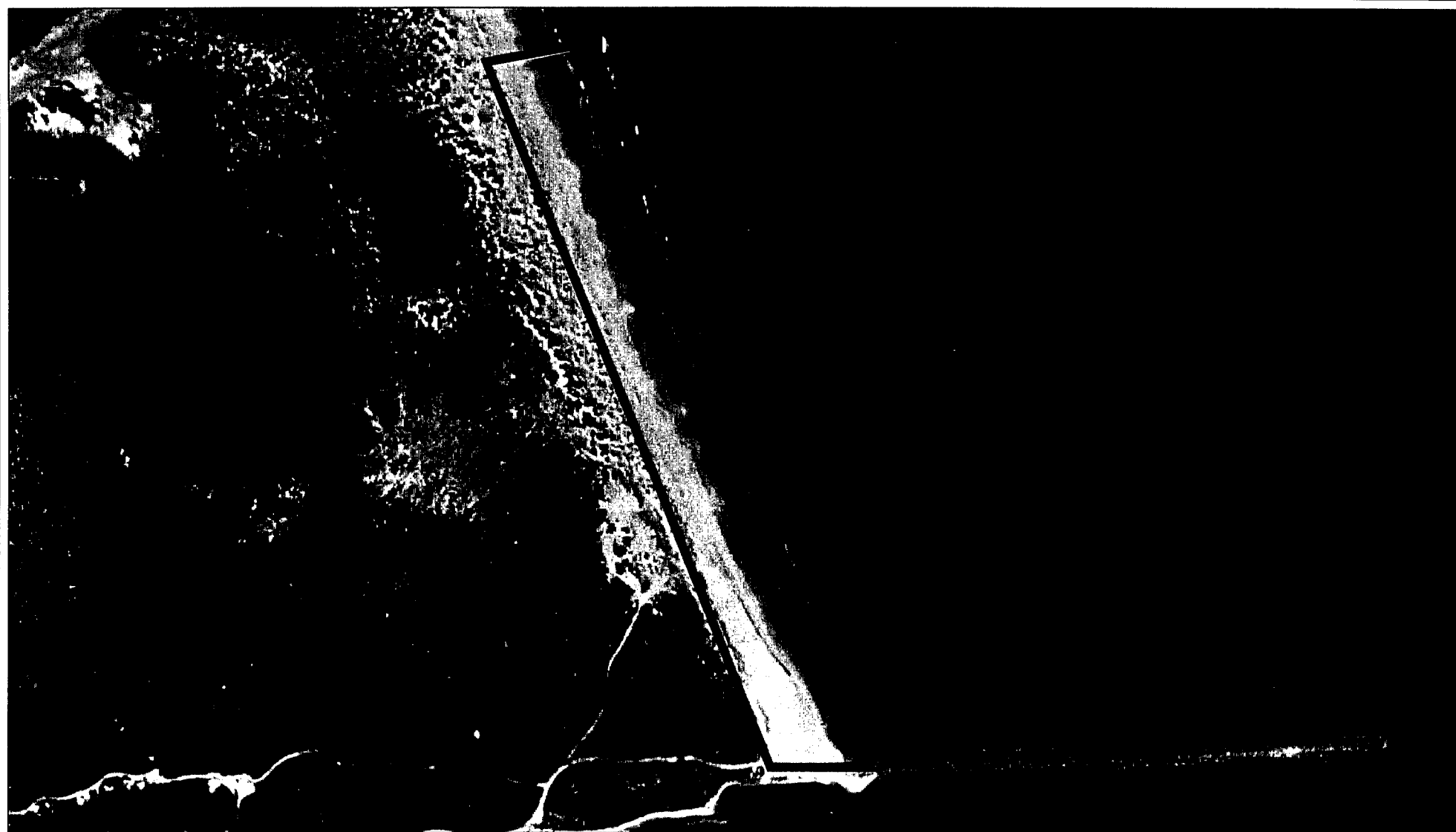
SAND AND MUD FLATS
SUBJECT TO PERIODIC
INUNDATION

SHIFTING SAND DUNES



0 2000 4000 6000 8000 FEET

Base Map: USGS 7.5' Quadrangle, Port Mansfield & South of Potosi
Lopero SE; 1969 color infrared aerial photography.



BASE MAP SOURCE: USGS 1m SERIES SOUTH OF POTRERO LOPENO SE-NE AND SE-SE DOQQ TEXAS QUARTER QUAD 2001

0 250 500
SCALE IN FEET

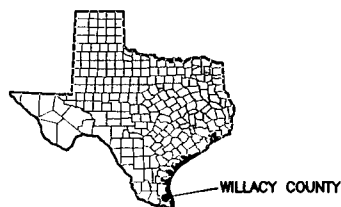


FIGURE 2

PIPING PLOVER SURVEY AREA
PLACEMENT AREA 2A
WILLACY COUNTY, TEXAS

Horizon

ENVIRONMENTAL SERVICES, INC.

Piping Plover Survey Results
September 2002
Placement Area No. 2A

<u>SPECIES</u>	<u>9/24 pm</u>	<u>9/24 am</u>	<u>9/24 pm</u>	<u>9/25 am</u>	<u>9/25 pm</u>	<u>9/26 am</u>	<u>9/26 pm</u>
Piping plover	B	B	B	B	B	B	B
Laughing Gull	B, F	B, F				F	
Black-bellied plover	B	B		B			
Western sandpiper	B	B	B	B	B	B	B
Least sandpiper					B		
Least tern				F	F		
Ruddy turnstone	B	B	B	B	B	B	B
Willet	B	B	B	B	B		B
Royal tern		F				F	B
Ring-billed gull		F				B	
Semi-palmated plover	B						
Wilson's plover	B	B	B				
Sanderling	B	B	B	B	B	B	
Brown pelican	F	F	F	F	B, F	B, F	F
Cliff swallow		F		F		F	
Oyster catcher							B
Lesser golden plover	B			B			
Little green heron		D					
Unid. Ducks		F					
Short-billed dowitcher		B					B
Herring gull		B					
Unid. Flycatcher							D
Unid. Tern			F	F			

B - Beach
D - Dune
F - Flyover

Attachment 4

Piping Plover Survey Segment Form

Placement Area #2A

County: *Willacy*Location: *N. Padre Isl. - N. side of Mansfield Cut*

U.S. Geological Survey Topographic Map (Quadrangle name):

Name of surveyor: *Lee Sherrod - Horizon Environmental**Port Mansfield +*Date of observation: *Sept. 24, 2002**S. of Portrero Lapino SE*Sunrise: *7:30 am*Sunset: *7:45 pm*High tide(s): *~ midnight*Low tide(s): *~ late morning*Tidal conditions during survey segment: *Tides very high due to tropical storm in Gulf*Wind speed and direction during survey segment: *20-25 from north*Time segment begins: *5:30 pm* Time segment ends: *7:30 pm*

Total number of Piping Plovers observed during segment:

(4)

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	4					
BLACK-BELLIED PLOVER	3					
SNOWY PLOVER						
WILSON'S PLOVER	3					
SEMIPALMATED PLOVER	1					
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET	3					
LONG-BILLED CURLEW						
MARbled GODWIT						
RUDDY TURNSTONE	13					
RED KNOT						
SANDERLING	8					
WESTERN SANDPIPER	~20					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER						

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:

lesser golden plover - 2
laughing gull - 4
brown pelican - 19 flying

Attachment 4

Piping Plover Survey Segment Form Placement Area 2A

County: *Willacy* Location: *N. Padre Isl. - N. of Mansfield Cut*
 U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*
 Name of surveyor: *Lee Sherrod - Horizon Environmental*
 Date of observation: *Sept. 24, 2002* S. of Portero Lopez SE
 Sunrise: *~ 7:30 am* Sunset: *~ 7:45 pm*
 High tide(s): *~ mid night* Low tide(s): *~ late morning*
 Tidal conditions during survey segment: *storm high tides + surf*
 Wind speed and direction during survey segment: *15-25 from north*
 Time segment begins: *10:00 am* Time segment ends: *12:00 noon*
 Total number of Piping Plovers observed during segment: *(10)*

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	10					
BLACK-BELLIED PLOVER	2					
SNOWY PLOVER						
WILSON'S PLOVER	2					
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET	4					
LONG-BILLED CURLEW						
MARbled GODWIT						
RUDDY TURNSTONE	5					
RED KNOT						
SANDERLING	4					
WESTERN SANDPIPER	~25					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER	3					

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:
Clif swallow - 15 flyover
herring gull - 2
laughing gull - 4
brown pelican - 1st flyover
Unid. ducks - 3 flyover
little green heron - 1 dunes
royal tern - 1 flyover
ring-billed gull - 1 flyover

Attachment 4

Piping Plover Survey Segment Form Placement Area # 2ACounty: *Willacy*Location: *N. Padre Isl. - N. of Mansfield Cut*U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*Name of surveyor: *Lee Sherrill - Horizon Environmental*Date of observation: *Sept. 24, 2002*Sunrise: *~ 7:30 am*Sunset: *~ 7:45 pm**S. of Portero Lopez SE*High tide(s): *~ midnight*Low tide(s): *~ late morning*Tidal conditions during survey segment: *high storm tides*Wind speed and direction during survey segment: *20-30 from north*Time segment begins: *5:30 pm* Time segment ends: *7:30 pm*

Total number of Piping Plovers observed during segment:

(6)

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	<i>6</i>					
BLACK-BELLIED PLOVER						
SNOWY PLOVER						
WILSON'S PLOVER	<i>1</i>					
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET	<i>4</i>					
LONG-BILLED CURLEW						
MARbled GODWIT						
RUDDY TURNSTONE	<i>8</i>					
RED KNOT						
SANDERLING	<i>2</i>					
WESTERN SANDPIPER	<i>~32</i>					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER						

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:

*brown pelican - 8 flyover**Unid. tern - 2 flyover*

Attachment 4

Piping Plover Survey Segment Form Placement Area # 2A

County: *Willacy* Location: *N. Padre Isl. - N. of Mansfield Cut*
 U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*
 Name of surveyor: *Lee Sherrad - Horizon Environmental*
 Date of observation: *Sept 25, 2002*
 Sunrise: *~ 7:30 am* Sunset: *~ 7:45 pm* *S. of Portero Lopez SE*
 High tide(s): *~ midnight* Low tide(s): *~ late morning*
 Tidal conditions during survey segment: *high storm tides*
 Wind speed and direction during survey segment: *20-25 from north*
 Time segment begins: *10:00 am* Time segment ends: *12:00 noon*
 Total number of Piping Plovers observed during segment: *(9)*

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	9					
BLACK-BELLIED PLOVER	5					
SNOWY PLOVER						
WILSON'S PLOVER						
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET	2					
LONG-BILLED CURLEW						
MARBLED GODWIT						
RUDDY TURNSTONE	24					
RED KNOT						
SANDERLING	5					
WESTERN SANDPIPER	~49					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER						

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:
 Cliff swallows - 12 flyover
 least tern - 8 flyover
 brown pelican - 18 flyover
 Unid. tern - 1 flyover
 lesser golden plover - 1

Attachment 4

Piping Plover Survey Segment Form Placement Area # 2A

County: *Willacy* Location: *N. Padre Isl. - N. of Mansfield Cut*
 U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*
 Name of surveyor: *Lee Sherrad - Horizon Environmental*
 Date of observation: *Sept. 25, 2002*
 Sunrise: *~ 7:30 am* Sunset: *~ 7:45 pm* *S. of Portero Lopez SE*
 High tide(s): *~ midnight* Low tide(s): *~ late morning*
 Tidal conditions during survey segment: *high storm tides*
 Wind speed and direction during survey segment: *15-20 from north*
 Time segment begins: *5:00 pm* Time segment ends: *6:30 pm*
 Total number of Piping Plovers observed during segment: *(5)*

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	5					
BLACK-BELLIED PLOVER						
SNOWY PLOVER						
WILSON'S PLOVER						
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET	1					
LONG-BILLED CURLEW						
MARBLED GODWIT						
RUDDY TURNSTONE	12					
RED KNOT						
SANDERLING	12					
WESTERN SANDPIPER	24					
LEAST SANDPIPER	1					
DUNLIN						
SHORT-BILLED DOWITCHER						

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:
1 on beach
brown pelican < 12 flyover
least tern - 3 flyover

Attachment 4

Piping Plover Survey Segment Form Placement Area # 2A

County: *Willacy* Location: *N. Padre Isl. - N. of Mansfield Cut*
 U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*
 Name of surveyor: *Lee Sherrad - Horizon Environmental*
 Date of observation: *Sept. 26, 2002*
 Sunrise: *~ 7:30 am* Sunset: *~ 7:45 pm* *S. of Portero Lopez SE*
 High tide(s): *~ mid night* Low tide(s): *~ late morning*
 Tidal conditions during survey segment: *high storm tides*
 Wind speed and direction during survey segment: *5-15 from north*
 Time segment begins: *10:00 am* Time segment ends: *12:00 noon*
 Total number of Piping Plovers observed during segment: *(4)*

HABITATS

SPECIES	A	B	C	D	E	TOTAL
PIPING PLOVER	<i>4</i>					
BLACK-BELLIED PLOVER						
SNOWY PLOVER						
WILSON'S PLOVER						
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER						
AMERICAN AVOCET						
WILLET						
LONG-BILLED CURLEW						
MARbled GODWIT						
RUDDY TURNSTONE	<i>1</i>					
RED KNOT						
SANDERLING	<i>~24</i>					
WESTERN SANDPIPER	<i>~50</i>					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER						

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:
brown pelican - 1 on beach
6 flyover
laughing gull - 5 flyover
ring-billed gull - 1
cliff swallow - 2 flyover
royal tern - 1 flyover

Attachment 4

Piping Plover Survey Segment Form Placement Area # 2A

County: *Willacy* Location: *N. Padre Isl. - N. of Mansfield Cut*
 U.S. Geological Survey Topographic Map (Quadrangle name): *Port Mansfield*
 Name of surveyor: *Lee Sherrad - Horizon Environmental*
 Date of observation: *Sept 26, 2002*
 Sunrise: *~ 7:30 am* Sunset: *~ 7:45 pm* *S. of Portero Lopez SE*
 High tide(s): *~ midnight* Low tide(s): *~ late morning*
 Tidal conditions during survey segment: *high storm tides*
 Wind speed and direction during survey segment: *5 from north*
 Time segment begins: *5:30 pm* Time segment ends: *7:00 pm*
 Total number of Piping Plovers observed during segment: *(15)*

SPECIES	HABITATS					TOTAL
	A	B	C	D	E	
PIPING PLOVER	<i>15</i>					
BLACK-BELLIED PLOVER						
SNOWY PLOVER						
WILSON'S PLOVER						
SEMPALMATED PLOVER						
AMERICAN OYSTERCATCHER	<i>1</i>					
AMERICAN AVOCET						
WILLET	<i>3</i>					
LONG-BILLED CURLEW						
MARBLED GODWIT						
RUDDY TURNSTONE	<i>4</i>					
RED KNOT						
SANDERLING						
WESTERN SANDPIPER	<i>~120</i>					
LEAST SANDPIPER						
DUNLIN						
SHORT-BILLED DOWITCHER	<i>1</i>					

HABITAT TYPES

A: *Beach*
 B:
 C:

D:
 E:

Other Species:
brown pelican - 4-flyover
unid. flycatcher - 1 dunes
royal fern - 2