



***Acute Pollution Event Response Plan  
For  
South Bay Coastal Preserve***

**By:**

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**TEXAS  
PARKS &  
WILDLIFE**

*Acute Pollution Event Response Plan  
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**Purpose:**

The purpose of this project was to develop a site specific acute pollution event response plan for South Bay Coastal Preserve to minimize damage to natural resources in the Preserve during a pollution event. The plan would provide first responders with high quality, detailed information pertaining to land and water access routes, sensitive habitats to avoid or protect, and specific strategies for protecting those habitats ([Attachment 5](#)). Sensitive habitats, access routes, and pre-designated boom-anchoring sites are clearly marked on maps and defined in the plan so they can easily be found by personnel in the field ([Map 10](#)).

**Brief Description:**

South Bay, the southernmost bay in Texas, is located near Port Isabel in Cameron County, Texas. The bay consists of approximately 3,500 surface acres, bounded on the south by the riparian ridge of the Rio Grande, on the west by extensive tidal flats, on the north by the Brownsville Ship Channel and associated dredge material placement areas, and on the east by Brazos Island ([Map 1](#)). Lands adjacent to the South Bay Coastal Preserve are either privately, locally, state or federally owned or administered. They include the Loma Ecological Preserve, managed by the United States Fish and Wildlife Service (USFWS) and Boca Chica Wildlife Management Area, managed by Texas Parks and Wildlife Department (TPWD). Cameron County manages the Gulf beaches. South Bay was leased to Texas Parks and Wildlife Department by the General Land Office (GLO) in 1988 to be managed under the Coastal Preserve System. South Bay is managed through cooperation of the GLO and TPWD with supportive help from private and public organizations. Management goals of the Memorandum of Agreement between TPWD and GLO include protecting unique coastal areas, fragile biological communities, and colonial bird nesting sites; and preserving target natural resources.

The South Bay Coastal Preserve is a designated Gulf of Mexico Program Gulf Ecological Management Site (GEMS). Submergent vegetation occurring in South Bay is comprised mainly of turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*) and shoal grass (*Halodule wrightii*) with some concentrations of star grass (*Halophila engelmannii*). Emergent vegetation is characterized by an almost uninterrupted border of black mangrove (*Avicennia germinans*) and concentrations of smooth cordgrass (*Spartina alterniflora*) along the northwestern boundary and near the mouth of the bay. Extensive algal flats comprised mainly of blue green algae constitute a significant portion of the Southern end of South Bay and are an essential part of the organic production and fertility of South Bay. South Bay supports numerous species of finfish and invertebrates. The largest eastern oyster population south of Aransas Bay occurs in South Bay Coastal Preserve. This population of oysters is genetically distinct from those populations occurring to the north. The mangrove communities provide valuable roosting and potential nesting habitat to waterbirds, such as the roseate spoonbill. South Bay Coastal Preserve and its wind-tidal flats, shallow water habitat, associated vegetation, and unique location provide excellent feeding, resting and wintering habitat for numerous types of migratory bird species. ([Attachment 6](#))

## **Access Routes:**

**By Air:** Port Isabel – Cameron County Airport (956) 233-4424  
Valley International Airport – Harlingen, TX (956) 430-8600  
Port Isabel – Heliport (956) 761-2668  
South Padre Island – Heliport (956) 943-5350 ([Map 2](#))

**By Land:** State HWY 100  
State HWY 4 ([Map 3](#))

**By Water:** ICWW- Lower Laguna Madre  
Brownsville Ship channel  
South Bay Pass ([Map 4](#))  
Numerous boat ramps ([Map 7](#))

**Access Phone Numbers:** Port Isabel Harbor Master – (956) 943-7826  
Port Isabel Swing Bridge – channel 16  
South Padre Island USCG Station – channel 16

## **Response Sequence:**

1. Make appropriate agency notifications of a pollution event in the area, it is crucial that all interested parties are notified ([Attachment 1](#)).

Tell them:

- a. Your name and callback number.
  - b. Exact location and nature of the incident.
  - c. Extent of injuries, and damage.
  - d. Wind speed and direction (if possible). Call Weather information at Brownsville National Service (956) 546-5378, (956) 504-1432 ext. 221 or <http://dnr.cbi.tamucc.edu/TCOON/HomePage>
  - e. If identifiable, the type of material involved and the extent of the spill, and the barge or ship name and number.
2. Evaluate the spill if responsible party has not done so ([Attachment 2](#)).
  3. Establish a command system at USCG – South Padre Island Station, where all responders should meet to coordinate response.
  4. Establish a security system where only essential personnel will be admitted to the location. Security should be coordinated through the Cameron County Sheriff's Department and Texas Parks and Wildlife Department (TPWD) game wardens, if necessary on land. USCG will coordinate on the water security.
  5. Establish a contingency plan, which is a written document that sets forth policies and procedures for responding to site emergencies ([Attachment 3](#)).
  6. Arrange an over flight as soon as possible to retrieve more up to date information where the pollution event is located and where it is possibly heading ([Attachment 2](#)). It would be best to use a pilot with proper certifications for an overflight survey. Clarify needs, billing availability etc. so no time is lost when a situation occurs.
  7. Evaluate all resources to be mobilized
  8. Boom deployment in pre-designated areas ([Map 5](#)).
  9. Evaluate the Spill
    - a. A command center
    - b. Wildlife hazing/rehabilitation
    - c. Alternate technologies
    - d. Threat of additional releases from the pollution event source.
    - e. Nighttime trajectory

### **Boom Deployment Discussion:**

Based on past lessons learned from drills or past spills, most of South Bay Coastal Preserve consists of sensitive habitat. It is recommended that shallow water boats, airboats and jonboats used in the South Bay Coastal Preserve to prevent seagrass scarring. There are numerous boat ramps in the area ([Map 7](#)). Low tides can cause access problems at South Bay Pass and Brazos Santiago Pass. There can be strong tidal flow at Port Isabel Swing Bridge, and Pirate's Cove. Pre-designated staging points are recommended for equipment ([Map 6](#)). GLO has three response trailers available with 4000' 18" boom. Deflection boom should be installed on the east and west banks of South Bay Coastal Preserve entrance depending on current and wind direction ([Map 5](#)). Be aware of pleasure craft and fishing vessels traffic in this area.

This document is a living document, and can be changed with relative ease. After each boom deployment exercise or tabletop discussion, there should be panel experts to discuss and make additions or changes where necessary. The panel should consist of the following agencies or persons: TPWD, USFWS and GLO.

## Attachment 1

### Contact List:

State of Texas Emergency Spill Reporting Hotline – 1-800-832-8224

General Land Office (GLO) – Region 4 – Sector Office  
Brownsville, TX – Main/Spill – (956) 504-1417

United States Coast Guard (USCG)  
South Padre Island Station – (956) 761-2668

Texas Parks & Wildlife Department (TPWD)

1. 24 hr. Houston Communications – (281) 842-8100
2. Coastal Fisheries Brownsville, TX – (956) 350-4490
3. Law Enforcement Game Wardens Brownsville, TX – (956) 546-1952
4. [Michael Weeks](#) – Kills and Spills Team – (361) 825-3246

United States Fish and Wildlife Service (USFWS)

1. Lower Rio Grande Valley National Wildlife Refuge – (956) 787-3079
2. Corpus Christi – Clare Lee – (361) 994-9005
3. Law Enforcement – Alamo (956) 686-8591

### Other Natural Resources

University of Texas Pan American Coastal Studies Lab – (956) 761-2644

Marine Mammal Stranding Network – 1-800-9MAMMAL

Sea Turtle Stranding and Salvage Network – (361) 949-8173 ext. 226

NOAA/National Marine Fisheries Service

Law Enforcement Harlingen, TX – (956) 423-3450

Cameron County Sheriff's Department – (956) 544-0860

Port Isabel Harbor Master – (956) 943-7826

Brazos-Santiago Pass Pilot's Association – (956) 761-7018

### Contractors

Marine Salvage & Services

Billy Kennon, Tony Tilly

(956) 943-2648, (956) 943-5041

Pager: (956) 548-3038

RM Walsdorf, Inc.

Robby Walsdorf cell # (956) 592-1626

Jeff Higginson cell # (956) 592-1624

(956) 831-3984, (956) 831-4098

CRRC

1-866-437-2772

(956) 365-4252, (956) 356-4412 fax

(956) 535-9111, 145\*2\*30513 Nextel

**Attachment 2**

**Evaluation/Observation Sheet:**

Evaluators/Observers Name and Contact Info (agency):

Platform:

Date: \_\_\_/\_\_\_/\_\_\_

Time: \_\_\_:\_\_\_ AM/PM

Brief description:

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Exact Location:

---

Tide and Current:

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Altitude (Platform):

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Materials involved and Quantity:

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Present status of incident:

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Potential pathways of movement:

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Habitation/population at risk:

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Environmentally sensitive areas/endangered species/delicate ecosystems:

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Accessibility by air and roads:

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Waterways:

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Current weather and forecasts (air temperature, wind speed, direction):

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## Attachment 3

### **Contingency Plan:**

1. Personnel:
  - A. Roles
  - B. Lines of authority
  - C. Training
  - D. Communication
  
2. Site:
  - A. Mapping
  - B. Security and control
  - C. Safety Stations
  - D. Evacuation routes (if needed)
  - E. Decontamination stations
  
3. Medical/first aid
4. Equipment
5. Emergency procedures
6. Documentation
7. Reporting

Overall, a Contingency Plan should:

1. be designed as a discrete section of the Site Safety Plan
2. be compatible and integrated with the pollution response and emergency plans of local, state and federal agencies
3. be rehearsed regularly using drills and mock situations
4. be reviewed periodically in response to new or changing site conditions or information.

## Attachment 4

### **Equipment:**

Boom: 8000' Boom of 18" boom

Boats: Shallow boats, airboats and jonboats

Special Equipment:

- JBF
- Drum Skimmers
- Vac trucks
- Shallow water skimmers
- T-posts and driver
- Anchor system
- Tow bridles – 3
- Shovels, rakes, sledge hammers
- First Aid Kits
- Scare cannons – 3
- Portable radios – 4

General Land Office (GLO) – Region 4 – Sector Office

Brownsville, TX – Main/Spill- *Airboat* (956) 504-1417

Law Enforcement Game Wardens

Brownsville, TX - *Airboat* (956) 546-1952



## Attachment 5

### Environmental Sensitivity Index Shoreline Habitat Descriptions

- Sheltered Scarps
- Tidal Flats
- Salt and Brackish Water Marshes
- Mangroves (Woody Vegetation in Salt Water)

#### Sheltered Scarps

##### **Description**

- Sheltered scarps can be composed of clay formed by dredge-material deposits in man-made waterways or steep slopes composed of either clay or sand and covered with terrestrial vegetation.
- There may be some fringing marsh along the water's edge

##### **Predicted Oil Behavior**

- Oil will not adhere to the wet sediment surface, but could penetrate the burrows if present and dry.
- Stranded oil will persist because of low energy setting.

##### **Response Considerations**

- Where the high-water area is accessible, it may be feasible to manually remove heavy oil accumulations and oiled debris.
- The muddy substrate cannot support heavy equipment, and even foot traffic could disrupt the sediments and mix oil deeper.



#### Tidal Flats

##### **Description**

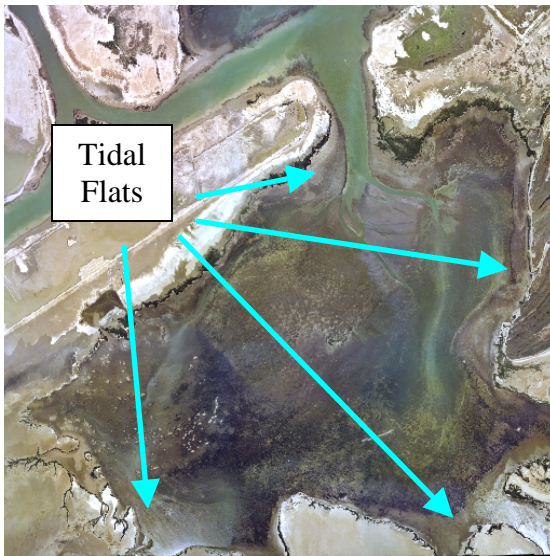
- Tidal flats are composed primarily of silt and clay with minor amounts of sand and shell.
- They are present in calm-water habitats, sheltered from major wave activity, and are frequently surrounded by marshes.
- They also include wind-tidal flats that are regularly inundated.
- Wave energy is very low, although there may be strong currents on parts of the flat and in channels across the flat.
- The sediments are very soft and cannot support even light foot traffic in many areas.
- There can be large populations of shellfish, worms, and snails.
- They are heavily utilized by birds for feeding and roosting.

##### **Predicted Oil Behavior**

- Oil does not usually adhere to the surface of tidal flats, but moves across the flat and accumulates at the high-water line.
- Oil may be deposited on the flat if concentrations are heavy.
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows and mud cracked sediments.
- In areas of high suspended sediments, sorption of oil can result in deposition of contaminated sediments on the flats.
- Biological damage may be severe.

**Response Considerations**

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; deflection or sorbent booms and open water skimmers should be used.
- Cleanup of the flat surface is very difficult because of the soft substrate and many methods may be restricted.
- Low-pressure flushing and deployment of sorbents from shallowdraft boats may be helpful.



**Salt and Brackish Water Marshes**

**Description**

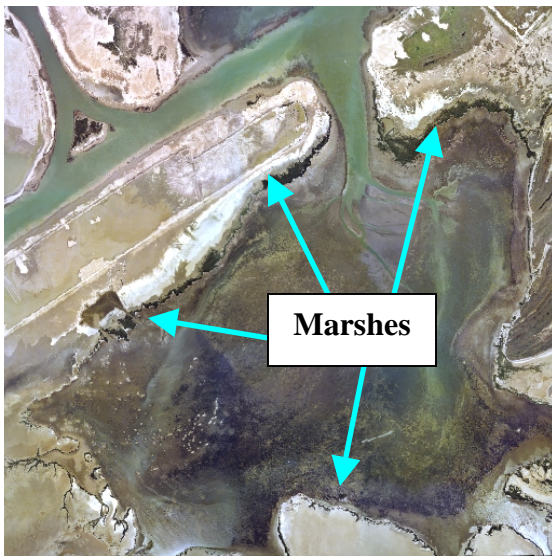
- Marshes are intertidal wetlands containing emergent, herbaceous vegetation.
- Width of the marsh can vary widely, from a narrow fringe to extensive areas.
- They are relatively sheltered from waves and strong currents.
- Sediments are composed of organic muds except on the margins of barrier islands where sand is abundant.
- Resident flora and fauna are abundant, with numerous species with high utilization by birds.

**Predicted Oil Behavior**

- Oil adheres readily to marsh vegetation.
- The band of coating will vary widely, depending upon the water level at the time oil slicks are in the vegetation. There may be multiple bands.
- Large slicks will persist through multiple water-level changes and coat the entire stem from the high-water line to the base.
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, although lighter oils can penetrate deeper, to the limit of inundation.
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool on the surface or in burrows.
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter).

### Response Considerations

- Under light oiling, the best practice is to let the area recover naturally.
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing. During flushing, care must be taken to prevent transporting oil to sensitive areas down slope or along shore.
- Cleanup activities should be carefully supervised to avoid vegetation damage.
- Any cleanup activity *must not* mix the oil deeper into the sediments. Trampling of the roots must be minimized.
- Cutting of oiled vegetation should only be considered when other resources are at great risk from leaving oiled vegetation in place.



### Mangroves /Communities

#### Description

- Mixtures of salt marsh and black mangrove or other shrub by vegetation (e.g. saltcedar). Mangroves occur along tidal channels in South Bay Pass and bay margins.
- Mangroves may occur along the seaward or landward margins of salt marshes, sometimes with oyster reefs. Roots and trunks are intertidal, with the lowest leaves inundated by high tide.
- The substrate can be mud or sand or leaf litter.
- Wrack accumulations can be very heavy.
- Mangrove marsh can be very productive and provide nursery habitat.

#### Predicted Oil Behavior

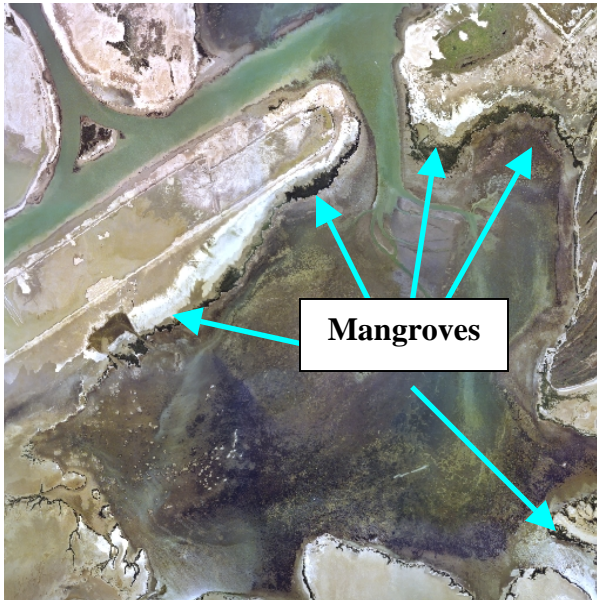
- Oil typically coats both sediments and vegetation.
- Oil can wash through mangroves if oil comes ashore at high tide.
- If there is a berm on the shoreline present, oil tends to concentrate and penetrate into the berm sediments or accumulated wrack.
- Oil readily adheres to prop roots, trunks and pneumatophores.
- Penetration is usually low because of the high water table and muddy composition of sediments, although more permeable sandy substrates characterize some mangrove areas.
- Reoiling from resuspended or released oil residues may cause additional impact over time.
- Oiled trees start to show evidence of effects (leaf yellowing) weeks after oiling. Tree mortality may take months, especially for heavy oils.

#### Response Considerations

- Accessibility is poor because of soft, saturated sediments and density of vegetation.



- Oiled wrack can be removed once the threat of oiling has passed. Wrack can protect the trees from oiling.
- Sorbent boom can be placed in front of oiled shrubs to recover oil released naturally.
- In most cases, no other cleanup activities are recommended, as they may be more damaging than the oil contamination; great caution should be exercised.
- Where thick oil accumulations are not being naturally removed, low-pressure flushing or vacuum may be attempted at the fringe.
- No attempt should be made to clean interior mangroves except where access to the oil is possible from terrestrial areas.
- It is extremely important to prevent disturbance of the substrate by foot traffic. Most activities should be conducted from boats.



## Attachment 6

### South Bay Species List:

<b>*RARNUM</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Priority</b>
896	Bottlenose dolphin	<i>Tursiops truncatus</i>	
896	Shorebirds		HIGH
896	Reddish egret	<i>Egretta rufescens ST</i>	
896	Wading birds		
896	Roseate spoonbill	<i>Ajaia ajaja</i>	
896	Terns		
896	Black tern	<i>Chlidonias niger</i>	
896	Redhead	<i>Aythya americana</i>	
896	Northern pintail	<i>Anas acuta</i>	
896	American white pelican	<i>Pelecanus erythrorhynchos</i>	
896	Black drum	<i>Pogonias cromis</i>	
896	Spotted seatrout	<i>Cynoscion nebulosus</i>	
896	Snook	<i>Centropomus spp.</i>	
896	Spot	<i>Leiostomus xanthurus</i>	HIGH
896	Sheepshead minnow	<i>Cyprinodon variegatus</i>	HIGH
896	Silversides	<i>Menidia spp.</i>	
896	Bay anchovy	<i>Anchoa mitchilli</i>	
896	Gulf menhaden	<i>Brevoortia patronus</i>	
896	Hardhead catfish	<i>Arius felis</i>	
896	Sheepshead	<i>Archosargus probatocephalus</i>	
896	Mullet	<i>Mugil spp.</i>	
896	Gobies		
896	Longnose killifish	<i>Fundulus similis</i>	
896	Pinfish	<i>Lagodon rhomboides</i>	
896	Southern flounder	<i>Paralichthys lethostigma</i>	
896	Spotfin mojarra	<i>Eucinostomus argenteus</i>	
896	Sanddab	<i>Citharichthys sp.</i>	
896	Pink shrimp	<i>Penaeus duorarum</i>	
896	Brown shrimp	<i>Penaeus aztecus</i>	HIGH
896	Blue crab	<i>Callinectes sapidus</i>	
896	Grass shrimp	<i>Palaemonetes spp.</i>	
896	American oyster (eastern)	<i>Crassostrea virginica</i>	HIGH
896	Turtle grass	<i>Thalassia testudinum</i>	HIGH
896	Shoal grass	<i>Halodule beaudettei</i>	
896	Manatee grass	<i>Syringodium filiforme</i>	
897	Black mangrove	<i>Avicennia germinans</i>	
898	Least tern	<i>Sterna antillarum</i>	
898	Terns		
898	Snowy plover	<i>Charadrius alexandrinus</i>	

\*Note: RARNUM number ([Map 9](#)).

## Maps

- [Map 1](#): South Bay Coastal Preserve
- [Map 2](#): South Bay Coastal Preserve Access by Air
- [Map 3](#): South Bay Coastal Preserve Access by Land
- [Map 4](#): South Bay Coastal Preserve Access by Water
- [Map 5](#): South Bay Coastal Preserve Pre-designated Boom Deployment Areas
- [Map 6](#): South Bay Coastal Preserve Pre-designated Staging Areas
- [Map 7](#): South Bay Coastal Preserve Boat Ramps
- [Map 8](#): South Bay Coastal Preserve Marinas
- [Map 9](#): South Bay Coastal Preserve Species
- [Map 10](#): South Bay Coastal Preserve Area