

**NRDA Pre-Impact Sampling Plan for West Coast of Florida: Hernando
County through Collier County**

Approval of this workplan is for the purposes of obtaining data for the Natural Resource Damage Assessment. Parties each reserve its right to produce its own independent interpretation and analysis of any data collected pursuant to this work plan.

APPROVAL


Department of Commerce Trustee Representative

7/28/2010
Date


Responsible Party Representative

7/28/2010
Date

NRDA Pre-Impact Sampling Plan for West Coast of Florida: Hernando County through Collier County

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The sampling plan for the region from Hernando through Collier counties has been developed with input from city, county, state, and federal agencies. FDEP's Rookery Bay National Estuarine Research Reserve has been leading the coordination of the sampling plan. We have held several conference calls to discuss the protocols and the sampling site choice. The group of scientists involved has extensive experience sampling water and sediment and years of baseline data available, if necessary.

Sampling Sites

The attached map illustrates the sampling sites for this region. Each point represents either sampling for a single protocol (such as intertidal sediment) or for 2-3 protocols, depending on the characteristics of the location. An average of about 7 sampling sites per county has been chosen, with some variation due to the differing lengths of coastline of the counties. The total number of sites for the entire region is 59. In accordance with NOAA's guidance, the sampling sites for NRDA baseline sampling are distributed well throughout the coastline.

Sites were chosen to represent the key habitats of southwest Florida, such as beaches, open waters, salt marshes, and mangroves. Beaches are vital to nesting birds and sea turtles and a suite of mollusks and other invertebrate species. Estuarine waters are used as spawning grounds and nurseries for at least two-thirds of the nation's commercial fish and shellfish. Resident and migratory birds, particularly coastal waterbirds, make extensive use of the open waters for feeding and resting, as do manatees and dolphins. Oyster reefs, limited to the mid-intertidal zone, support a variety of organisms and filter surrounding water and. Seagrass beds play a vital role as nursery areas and feeding ground for many fishes, invertebrates, and manatees. Salt marshes are among the most productive systems for organic matter in any estuary and support large numbers of vertebrate and invertebrate species. They are prime feeding sites for many resident wading or migratory game birds, raptors and several species of mammals.

Mangrove forests are of critical value to estuarine ecosystems. The complex branching prop roots of the red mangrove support a large number of plants and animals. Numerous invertebrates and fishes seek shelter and food in the maze of trunks and roots. Other species utilize the mangrove canopy. A variety of birds are associated with the mangrove forest, using islands as night roosts and rookeries. The constantly shedding leaves of the mangrove trees rapidly decay to form small particulate material called detritus. Detritus is the major food source for many of the small estuarine invertebrates that inhabit the soft bottom sediments among the mangrove roots.

Protocols

We will follow intertidal sediment, subtidal sediment and water sample NRDA protocols with no replicates, as described in the documents available at <http://nrdata.org/protocols.aspx>. We will use DEP SOPs FS 2100 and FS4000 *only when they do not conflict with the NRDA protocols and they clarify procedures*. These SOPs provide detailed information about sampling techniques and equipment, which will make it easier for sampling teams to collect samples correctly.

Sampling Coordination

Victoria Vazquez, Research Coordinator at Rookery Bay National Estuarine Research Reserve and DEP staff, is coordinating this sampling effort. At least one Florida Department of Environmental Protection staff member will be in each sampling group to ensure proper Chain of Custody procedures are followed. The sampling effort will be supported by city, county, state, and federal personnel with experience and knowledge of the coastal ecosystems. Sampling teams will be established based on available staff, boats, and equipment, with every effort made to minimize distance traveled, and thus expense. One Entrix employee, on behalf of BP, will be able to join each sampling team in the field, serving as an observer of the sample collection process.

Budget

The budget estimate is based on 270 field people-hours and 192 office people-hours total for all nine counties. However, tidal conditions and weather greatly affect the time it takes to sample in these estuarine environments. Experience in the Florida Panhandle also indicates the sampling process takes much longer than expected; they spent about 1.5 hours for each site. The pay rate of \$21.50 per hour is an average of the possible pay rates of the people involved. FEMA Schedule of Equipment Rates was used to calculate boat use expense. Boat, runabout (cost code 8131) was used to best represent the boats that will be used, based on size and engine type (the FEMA choices were very limited). The 270 field people-hours were used to estimate Boat Use Total Pay. The below budget is an estimate and the required budget could range from \$11,923 to \$14,088 (2 hours per site).

Research Biologist Total Pay (\$21.50/hr)	Boat Use Total Pay (\$18.50/hr)	Supplies	Total Expense
\$9,933	\$1,665	\$325	\$11,923