



Living on the Edge
Protecting Our Bays and Estuaries

Coastal Bend Bays & Estuaries Program

FY 2013 Comprehensive Annual Work Plan

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COASTAL BEND BAYS & ESTUARIES PROGRAM

FY 2013 Comprehensive Annual Work Plan

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I. Introduction

History

In its 1987 reauthorization of the Water Quality Act, the U.S. Congress established the National Estuary Program (NEP) to promote long-term planning and management of nationally significant estuaries threatened by pollution, development, or overuse. The Administrator of the Environmental Protection Agency (EPA) was given authority to convene Management Conferences and to award Federal financial assistance grants to approved state programs for the purpose of developing and implementing a CCMP. The Act defines criteria by which Management Conferees are charged with balancing the conflicting uses in target estuaries, while restoring or maintaining their natural character.

The Coastal Bend Bays & Estuaries Program (formerly the Corpus Christi Bay National Estuary Program) was formally established in October 1992 with committee meetings beginning in late 1993. The CBBEP was one of the first NEPs to use a streamlined approach to the development of a CCMP. The goal of the CBBEP to complete a Preliminary CCMP within 12 to 18 months (from 09/01/94) and a Final CCMP in approximately four years (by September 1998) was achieved.

A State-EPA Management Conference Agreement detailing this and other specific outputs of the four-year program was signed in May 1994 by the Regional Administrator of the EPA and the Chairman of the State-lead agency for the Program, the Texas Natural Resource Conservation Commission (now the Texas Commission on Environmental Quality - TCEQ). The Program Office had been established as a program of the TNRCC since December 1993. In 1999, CBBEP became a non-profit organization to lead implementation.

CBBEP Operations

The project area encompasses the estuarine environment of 75 miles of the south-central Texas coastline, and includes the 12 counties of the region known as the Texas Coastal Bend. This 514 square mile area of water includes all bays, estuaries, and bayous in the Copano, Aransas, Corpus Christi, Nueces, Baffin, and upper Laguna Madre bay systems, which together represent three of the seven major Texas estuaries.

The Priority Issues for the CBBEP are:

- Alteration of Freshwater Inflow into Bays and Estuaries
- Condition of Living Resources
- Loss of Wetlands and Estuarine Habitats
- Degradation of Water Quality
- Altered Estuarine Circulation
- Bay Debris
- Selected Public Health Issues

The *Coastal Bend Bays Plan* has been developed to address each of these priority issues under the following categories of action plans: Human Uses; Maritime Commerce and Dredging; Habitat and Living Resources; Water and Sediment Quality; Freshwater Resources; and Public Education and Outreach. The projects selected for implementation reflect a combination of priority and readiness or feasibility for implementation. Implementing Partners for other actions

of the *Bays Plan* will likewise be called upon to begin and continue to implement their own portions of the *Plan*. The role of Program staff is multi-faceted, but will include at a minimum the following tasks: (1) acquire, manage, and disperse funds to implement the *Bays Plan*; (2) develop and implement partnership projects with local governments, state and federal agencies, and private organizations; (3) monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments; and (4) coordinate the environmental monitoring and assessment of Plan implementation effectiveness.

Work Plan Development

The FY 2013 Comprehensive Work Plan will allow the CBBEP to continue the implementation of the *Coastal Bend Bays Plan*. This Work Plan describes implementation projects and administrative support that will be undertaken pending approval and receipt of funds by the funding entities.

All data and information produced under the auspices of the CBBEP will adhere to standardized formats and be made publicly accessible. A public participation strategy, refined under the 'public education and outreach' chapter of the *Bays Plan*, will continue to guide public participation efforts in Comprehensive Conservation and Management Plan (CCMP) implementation. The list of Priority Issues, refined through public input and characterization projects will continue to serve as the focus for implementation.

II. Starting Date

The starting date for this FY 2013 Comprehensive Work Plan will be September 1, 2012.

III. Federal and State Program Coordinators and Project Officers

Federal

Mr. Doug Jacobson
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State

Mr. Jeff Foster
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IV. Accomplishments To Date

The CBBEP achieved its primary goal for FY 2012, which was to continue the successful initiation and completion of projects developed to implement the *Coastal Bend Bays Plan*. The Program and its partners achieved programmatic progress on 94 percent of CCMP actions. Action-specific environmental progress directly attributed to CBBEP activities has resulted in thousands of acres of restored or protected habitat. The Program's success in leveraging funds for CBBEP projects has also been noteworthy. Broad support for the Program's activities is evidenced by the range of contributors, including local governments, industries, NGOs and state and federal agencies. The CBBEP Management Conference has not made any changes in the priorities as listed in the CCMP.

All project deliverables identified during the FY 1999 through FY 2008 implementation years have been completed, as well as FY 2010. FY 2009 projects (federal) are expected to be completed by August 31, 2012. FY 2011 projects are expected to be completed by August 31, 2013, and FY 2012 projects are expected to be completed by August 31, 2014.

V. Goals for FY 2013

The overarching goal for FY 2013 is to continue the successful implementation of the *Coastal Bend Bays Plan*. CBBEP Implementation Teams continue to identify, initiate and select project ideas for inclusion in the Program work plans. The teams are: Habitat & Living Resources, Human Uses Team; Maritime Commerce and Dredging Team; Water & Sediment Quality Team; and Environmental Education & Outreach Team. The CBBEP Coordination Team, consisting of all the chairs of the Implementation Teams and key members of the Conference, coordinates the annual work plan recommendations to the CBBEP Board of Directors, and reviews and proposes update recommendations to the *Bays Plan*.

VI. Implementation of Projects

Project activities for FY 2013 have been selected for their contribution towards implementation of the *Coastal Bend Bays Plan*. Twenty-eight projects will be implemented in FY 2013. A comprehensive list of projects outlining project numbers, titles, action items, performing party(s), and budget can be found in Table 1: FY 2013 Comprehensive Annual Work Plan Outline. This list represents the combined efforts of the many volunteers who have donated their time and expertise to help assure the successful implementation of the *Coastal Bend Bays Plan*.

VII. Project Deliverables/Schedule

Specific project deliverables and schedules for completion are to be negotiated with the sub-contractor of the project and will be included in the scope of work of the project contract. The project contract and any amendments will be subject to review by funding entities and are incorporated into this annual work plan by reference.

Performing Organization: CBBEP
Total Project Funding: \$135,000
CBBEP Bays Plan Action Items: HLR-1, HLR-4

Background:

The *Living Resources Characterization Report* prepared for the CBBEP documented the declining populations of certain colonial waterbird populations. Some species of colonial waterbird have experienced a 90% reduction in breeding pairs since the 1960's. Colonial waterbird populations are indicators of the overall health of the estuary. Bird watching, especially viewing colonial waterbirds, is an important and growing component of ecotourism and the local economy.

Building on the efforts of the CBBEP Colonial Waterbird projects in previous years, this project will continue the implementation of specific management actions of the *CBBEP Colonial Waterbird Rookery Island Management Plan*. Additionally, efforts to protect other imperiled coastal bird species will be made. Management actions will include efforts to reduce human-disturbance, nesting substrate management, vegetation management to enhance rookery island habitat, and predator control where necessary. Outreach will continue to be a crucial component in achieving project objectives.

Objectives:

- Continue efforts towards the enhancement and construction of nesting habitat.
- Continue to promote public programs to protect colonial waterbirds.
- Assist in efforts to note fluctuations of colonial waterbird populations for management purposes.
- Install signage to reduce impacts of human disturbance on waterbird colonies.
- Implement predator control efforts.

Performing Organization: CBBEP
Total Project Funding: \$156,000
CBBEP *Bays Plan* Actions: PEO-3, PEO-5

Background:

Learning on the Edge began as a partnership that focuses on equipping teachers with the skills, curriculum, support and materials to strengthen science teaching as it relates to the environmental treasures of Texas Coastal Bend.

The Coastal Bend Bays & Estuaries Program partners with already successful educational programs. By combining all of these resources into one program, Learning on the Edge seeks to provide teachers the tools needed to successfully teach science and promote student awareness of local ecology and environmental issues affecting the bays and estuaries.

The CBBEP Environmental Educator will provide field trip opportunities for teachers and students to visit the Nueces Delta Preserve. The co-curricular trip is to be organized by the teacher, with assistance from the Environmental Educator, to create an educational TEKS-aligned agenda for outdoor education. This program sees over 4000 students a year.

The CBBEP Environmental Educator will also facilitate workshops throughout the school year as an extension of Learning on the Edge. These workshops will address local environmental science topics and will align to the TEKS objectives. Hands-on learning in the field will dominate and field work correlation to the classroom will follow the outdoor learning experience. Participating teachers will receive CPE credits.

The CBBEP Environmental Educator will facilitate three summer workshops designed for teachers to address local environmental science topics. Participants will enhance their science knowledge through direct instruction, hands-on learning, field excursions, and TEKS-aligned lesson presentations. As a State Board for Educator Certification (SBEC) continuing professional education (CPE) provider, teachers will receive CPE credits as well as Texas Environmental Education Advisory Committee (TEEAC) credits.

Objectives:

Coastal Bend Bays & Estuaries Program partners will facilitate and perform a portion of teaching during the week long teacher academy. The teachers will receive all information provided by these partners, a curricula guide from the Coastal Bend Bays & Estuaries Program, and Equipment for the classroom. The workshops will be small scale educational seminars with equipment provided. CBBEP will provide fieldtrips for classrooms to come to the Nueces Delta Preserve.

Performing Organization: CBBEP
Total Project Funding: \$10,000
CBBEP *Bays Plan* Actions: PEO-3, PEO-5

Background:

Classroom teachers today face an almost overwhelming challenge of helping students progress through the required subject material. Many of the students that are being exposed to scientific concepts for the first time have never really spent much time outdoors or in dedicated environmental education facilities. There is a need to bring classroom concepts alive in the proper setting through field trips.

The Coastal Bend Bays & Estuaries Program will conduct environmental education leaning experiences for students and their teachers. The funding is intended to support the education trip in its entirety, including associated educational materials, and the necessary and reasonable costs associated with transporting the teacher and students from the school to the destination.

Getting students out of the classroom and into the outdoors adds greatly to the students understanding of natural processes. The goal is to plant seeds of appreciation and passion for a new generation of naturalists, biologists, and nature lovers to protect and preserve the Coastal Bend through educating school children about preserving our environment and protecting our animals and plant life.

Objective:

Coastal Bend Bays & Estuaries Program's Environmental Educator and partners will organize and conduct fieldtrips for students throughout the Coastal Bend.

Performing Organization: Coastal Bend Bays Foundation
Total Project Funding: \$40,000
CBBEP *Bays Plan* Actions: PEO-1, PEO-2, PEO-3, PEO-4 and PEO-5

Background:

As stated in the *Coastal Bend Bays Plan*, CBBEP is constantly working to promote public/private partnerships to help achieve its educational goals.

The CBBEP partnership with the Coastal Bend Bays Foundation (CBBF) addresses our educational goals set forth in the *Bays Plan*. One of the benefits of the partnership between the CBBEP and CBBF is addressing the need for continued dialogue between competing user groups and the need for an engaging public forum to allow for individual input in the public policy debate. The *Bays Plan* calls for continued involvement from CBBF, as the region prepares itself for ever-increasing number of people wanting to make use of the bays and estuaries. Minimizing conflict through informed discussion will help achieve the overall objective of ensuring the public's safety, health and enjoyment of our bays and estuaries.

This project will result in increase in the community's awareness of local environmental issues through Earth Day, forums and an awards banquet. An estimated 12,000 people are expected to attend these events.

Objectives:

- Host, organize and coordinate turnkey operation of Earth Day festival.
- Host, organize and coordinate CBBF Conservation and Environmental Stewardship Annual Awards Banquet.
- Conduct Coastal Issues Forums to increase communications between resource managers, users and general public.
- Organize and coordinate bay-resource/related workshops with CBBEP's approval.
- Continue to seek matching funds.

Performing Organization: CBBEP
Total Project Funding: \$30,000
CBBEP *Bays Plan* Actions: PEO-1, PEO-2, PEO-3, PEO-4 and PEO-5 and BTR-1

Background:

One of the most important goals of the *Bays Plan* is to educate citizens about the ecology of the bay system, its many environmental and economic values, and how an individual can make a positive difference to ensure its long-term health. To accomplish this, the *Public Education and Outreach Action Plan* is designed to raise the public's environmental awareness, foster community stewardship of bay resources; and increase individual involvement in bay resource management issues.

Helping residents and visitors understand the complex issues concerning bay resource management is a priority. In addition to understanding how the bay system functions, it is important that citizens develop a sound appreciation for the significant value and economic impact derived from the renewable resources of the bays. The CBBEP is constantly working to promote public/private partnerships as stated in the Coastal Bend Bays Plan to help achieve its educational goals.

Objectives:

CBBEP will raise awareness of environmental issues by connecting with the Coastal Bend public through our websites and at community events and festivals. We will spread the CBBEP brand through promotional and educational materials, such as posters, reusable bags and other items. We expect to reach thousands at various community events.

In addition, CBBEP may participate in:

- Community events and festivals
- CBBEP educational and promotional materials
- CBBEP web site
- CBBEP electronic updates
- Other outreach opportunities

Performing Organization: The Nature Conservancy
Total Project Funding: \$25,000
CBBEP Bays Plan Actions: SM-2, HLR-1, PEO-1

Background:

This project intends to characterize various sea-level rise (SLR) and storm surge scenarios and the impacts associated with each on coastal habitats in the Corpus Christi Bay area in Texas. It will use the results of the sea-level affecting marshes model (SLAMM; preceding TNC project) that assesses the impacts of SLR on marshes and other types of coastal wetland to determine the relative implications in the quality of freshwater sources in this area. The project will also work with stakeholders in the Coastal Bend area to identify ecosystem-based opportunities for adaptation to SLR and storm surge and discuss how coastal alterations due to SLR could influence changing management strategies and policies.

In this project, the Conservancy will develop SLR scenarios for three inundation levels (0.69/A1Bmax, 1 and 2 meters), and for five time slices up to 2100 (initial conditions, 2025, 2050, 2075 and 2100 years).

The goal of this project is to inform planners, managers, decision makers, scientists and general public on the impacts of SLR and storm surge in coastal marsh habitat in the Corpus Christi Bay area, with special emphasis on its relative implications on built and natural marsh wetlands and freshwater infrastructure. This project intends to identify essential actions to reduce vulnerability and opportunities to enhance adaptation to SLR and storm surge in this bay system. The working hypothesis is that there will be negative effects on wetlands and freshwater quality and subsequently availability due to rising saltwater from SLR. To make this information available to the different stakeholder the model results, meta-analysis and report will be freely available through the Internet portals mentioned above, and the Gulf of Mexico Alliance GIS data portal, gomaportal.org.

Objective:

Host two stakeholder workshops to inform planners, managers, decision makers, scientists and general public on the impacts of sea-level rise (SLR) and storm surge in coastal marsh habitat in the Corpus Christi Bay area, and develop a final report including workshop participants needs, SLR impacts on freshwater infrastructure, GIS analysis and adaptation strategies, and associated maps.

Project # 1307 Aplomado Falcon Habitat Enhancement

Performing Organization: **To Be Determined**
Total Project Funding: **\$75,000**
CBBEP Bays Plan Actions: **HLR-2, HLR-4**

Background:

The northern Aplomado falcon (*Falco femoralis septentrionalis*) was listed endangered in 1986. It was believed to be extirpated from the United States in the 1950's. The reason for this decline has been attributed to brush encroachment and agricultural development on much of the grasslands, egg collecting around 1900, and pesticide contamination. Aplomado falcons were once considered common in coastal Texas; in-fact, Aplomado falcon egg sets collected 1890-1915 on the Texas coastal bend outnumbered egg sets of the white-tailed hawk and crested caracara in the same area and period (Hector 1987)

In an effort to recover the species the Peregrine Fund began releasing Aplomado falcons in 1986 at Laguna Atascosa National Wildlife Refuge. In 1995 their efforts resulted in the first observations of wild breeding Aplomado falcons in the U. S. since 1952. Releases on the Texas coast continued through 2004 on Matagorda Island in Aransas National Wildlife Refuge and in south Texas. Currently there are approximately 35 breeding pairs in coastal Texas. The downlisting criteria are 60 breeding pairs in the U.S. Since 2004 the Peregrine Fund has focused their release efforts in west Texas and New Mexico. Those efforts have for the most part failed due to avian predators and long-term drought. The Peregrine Fund is now going to refocus their efforts on the Texas coast where they have had success in establishing populations. This year the Peregrine Fund is planning releases in the Texas coastal bend at Mustang Island State Park.

This project will leverage Peregrine Fund efforts by providing funding to control brush, enhance grasslands with prescribed fire, and planting appropriate nesting substrate (yucca) in strategic locations. Specific enhancement locations and activities will be determined based on the consensus of project implementation partners (USFWS, TPWD, and CBBEP).

Objective:

Enhance 1,000+ acres of coastal prairie to increase its value as habitat for Aplomado falcon and other grassland birds.

Performing Organization: CBBEP
Total Project Funding: \$4,000
CBBEP *Bays Plan* Actions: PEO-3, PEO-5

Background:

Learning on the Edge is an exceptional partnership that focuses on equipping teachers with the skills, curriculum, support and materials to strengthen science teaching as it relates to the environmental treasures of Texas Coastal Bend. The Coastal Bend Bays & Estuaries Program Educator has noticed that some teachers would like continuing education in Environmental Science. Partnering throughout the year would allow quarterly workshops to introduce environmental issues to teachers who may not be able to spend a full week in the summer at a workshop. It will also allow those teachers who may need more instruction in a specific area of science to continue their education.

Objectives:

The Coastal Bend Bays & Estuaries Environmental Educator will facilitate quarterly workshops designed for teachers (grades 3-8) to address local environmental science topics by collaborating with well-regarded science education programs of the Coastal Bend. Participants will enhance their science knowledge through direct instruction, hands-on learning, field excursions, and TEKS-aligned lesson presentations. As a State Board for Educator Certification (SBEC) continuing professional education (CPE) provider, teachers will receive 2-4 hours of CPE credits.

In addition to continuing education, this project will address the gap that exists between teachers learning about environmental science and the delivery and implementation of environmental science in the classroom. The purpose is to help teachers recognize their strengths and weaknesses in science, while allowing the Environmental Educator to assist with requested help from the teacher.

Coastal Bend Bays & Estuaries Program partners will perform a portion of teaching during the teacher workshop. The teachers will receive a copy of classroom activities from the Coastal Bend Bays & Estuaries Program, and equipment for the classroom. The workshops will be small scale educational seminars with equipment provided.

Performing Organization: CBBEP & USFWS
Total Project Funding: \$5,000
CBBEP *Bays Plan* Actions: PEO-3, PEO-5

Background:

In several discussions with teachers and principals, it has been determined that moving students to learning opportunities (field trips) is becoming more difficult. Buses are expensive and finding personnel to supervise as well as scheduling has become challenging. Field trips at the middle school and junior high level are almost non-existent.

One way to solve this problem would be to bring learning opportunities to schools in the form of an outdoor classroom. Outdoor classroom is defined as an outdoor area on campus set aside for student investigation and learning. Components are varied but often include benches or picnic tables adjacent to a study or natural area where students can gain field experience.

Objective:

To provide public schools with the option of an outdoor classroom that will promote interest in science, include community experts, support parent involvement, provide field experience to students, and help to improve scores.

Project #1310 Clearing House for Air and Water Quality

Performing Organization: **City of Corpus Christi**
Total Project Funding: **\$1,000**
CBBEP *Bays Plan* Actions: **PEO-1, PEO-4**

Background:

The purpose of this project is to develop an air and water quality clearing house website for the Corpus Christi area. The project will address the issue expressed during the recent EPA sponsored Environmental Summit held November 18, 2011. A resounding sentiment voiced throughout the Summit's Pollution Prevention Workgroup was that information on Water and Air Quality conditions, resources and projects were not available or easily accessible to the community. The idea was suggested that there be a one stop, single source clearing house for community environmental information. The City's Environmental webpage contained much of the information and was offered as the source. Here is the link to the City's environmental webpage: <http://www.cctexas.com/environmentalservices/>

Below are specific links to be added to the existing webpage:

"Air Quality" --Choices to link to--

- Link to City AQ information (already there)
- Link to CBBEP Water, Sediment and Air Quality Publications:
<http://cbbep.org/publicationsWQ.html>
- Link to TCEQ Air: http://www.tceq.texas.gov/agency/air_main.html
- Pollution Prevention Partnership <http://falcon.tamucc.edu/~outreach/p3home.html>
- University of Texas Corpus Christi Air Quality Project www.utexas.edu/research/ceer/ccaqp/
- Texas A&M Kingsville Air Quality (find and add)
- TCEQ Air Monitoring Site Information www.tceq.state.tx.us/cgi-bin/compliance/monops/site_info.pl

"Water Quality"—Choices to link to--

- Link to City WQ information (already there)
- Link to City Stormwater website
- Link to CBBEP Water, Sediment and Air Quality Publications:
<http://cbbep.org/publicationsWQ.html>
- Link to TCEQ Water: http://www.tceq.texas.gov/agency/water_main.html
- Link to Nueces River Authority: <http://www.nueces-ra.org/CP/CITY/index.php>
- Link to CBI website map with real-time data collection station
<http://lighthouse.tamucc.edu/stnmap/>

Objectives:

- Redesign the front page and restructure the navigation to add more emphasis and direct links for Air and Water Quality to the existing City of Corpus Christi's Environmental Services webpage.
- Develop a clearing house website which will display water and air quality information from numerous entities.

Performing Organization: Conrad Blucher Institute
Total Project Funding: \$38,000
CBBEP *Bays Plan* Actions: FW-1, FW-2, FW-3, FW-4

Background:

The purpose of this project is for the Conrad Blucher Institute for Surveying and Science (CBI) at Texas A&M University - Corpus Christi (TAMUCC) to continue to maintain 3 current real-time salinity monitoring stations along the Rincon Bayou and a tide gauge in west Nueces Bay in order to characterize freshwater inflows into the Nueces Delta. Salinity sensors along the Nueces Delta will be used to trace freshwater inflows from freshwater pumping events via the Rincon Bayou Pipeline (RBP) from the Nueces River and will report water temperature, conductivity and salinity every 30 minutes. Data from these salinity stations are used by the Nueces Inflow Pipeline Advisory Committee (IPAC) to help determine when to recommend to the City of Corpus Christi the schedule of pass-through of “banked” water. The Center for Coastal Studies (CCS) at TAMUCC uses the salinity data provided from the salinity stations to support various projects involving sampling in the Nueces Delta. Data from these salinity stations are also utilized by the University of Texas (UT) in Austin and the Marine Science Institute in Port Aransas to support various modeling projects which are investigating the interactions between water in sediment and tidal creeks in the Nueces Delta. The Nueces Delta Hydrodynamic Model being conducted by UT also utilized the tide gauge data in the western Nueces Bay. A weather station will also be maintained in the Nueces Delta and will provide air temperature, wind, precipitation, barometric pressure, relative humidity, and solar radiation data. All data will be available to the public at CBI’s webpage (<http://cbi.tamucc.edu>).

Normally, a river flows through a delta area prior to making its confluence with its receiving water body. The Nueces River is different in that it flows into Nueces Bay at a point along the south shore of the bay, 2 ½ to 3 miles from the delta-bay interface, completely bypassing the delta. Only during times of severe flooding, causing over-banking of the river, or locally heavy rain, did much freshwater make it into the delta proper.

To provide more freshwater diversions during normal flow conditions, the City of Corpus Christi has had a pipeline and pump station built to divert up to the first 3000 AF of pass throughs per month from above the saltwater barrier dam directly into the upper Rincon Bayou.

The primary project objectives will be to continue monitoring the freshwater inflows coming into the delta via the pipeline by recording salinities within the water column at various stations along the Rincon Bayou, maintain a real-time weather station and a tide gauge in Nueces Bay. These instruments will be used to calculate spatial and temporal environmental effects as well as the amount of freshwater needed to manage a healthier estuary.

Objective:

Maintain real time water quality, tide gauge, and meteorological monitoring stations in the Nueces Delta and Bay to measure effects of Rincon Pipeline freshwater inflows.

Performing Organization: Texas A&M University – Corpus Christi
Total Project Funding: \$19,000
CBBEP Bays Plan Actions: WSQ-3, WSQ-4, WSQ-5, NPS-4

Background:

This project will support acquisition of flow rates from non-gauged tributaries in Oso Bay, necessary for calculating nutrient/organic matter loading. Non-gauged flow rates will be incorporated into a larger Texas GLO Coastal Management Program funded project to TAMUCC, which will support concurrent collection of water quality data (nutrients, organic matter, etc.).

For the CMP grant, the overall goal will be to identify the major source(s) of nutrient and organic matter loads fueling water quality degradation in Oso Bay and parts of Corpus Christi Bay. Specific objectives from the CMP funded project are to: 1) quantify the distribution and sources of nutrients and organic matter in Oso Bay, 2) quantify organic matter and nutrient loading to Corpus Christi Bay from Oso Bay, and 3) quantify important indicators of eutrophication in Oso Bay and adjacent Corpus Christi Bay (i.e., organic matter/nutrients, dissolved oxygen, chlorophyll *a*). This will be the first and only comprehensive study of nutrient and organic matter loading to Oso Bay, and results will be broadly applicable to water quality rehabilitation efforts, e.g., by identifying specific regions of the Oso system that should be targeted for enhancement or construction of wetlands and other buffer zones.

Oso Bay has experienced a progressive worsening of water quality in the past decade, with symptoms including excessive pathogenic bacteria levels (for which a TMDL has been established), episodic low dissolved oxygen conditions, and algal blooms. These symptoms are ultimately related to the physical-chemical dynamics of the system, with nutrient and labile organic matter loading from runoff as a likely causative agent. Excessive levels of pathogenic bacteria and low dissolved oxygen conditions all point to an organic matter-enriched water column. Exceptionally high chlorophyll *a* levels have also been measured, particularly adjacent to outflow from an active golf course (M.S. Wetz et al., unpubl. data). Yet the most comprehensive water quality sampling programs in Oso Bay have been of too low frequency (quarterly), duration (≤ 1 year) and spatial coverage (1-2 sampling locations) to identify the main causes of water quality degradation. For instance, the contribution of nutrients and organic matter from Oso Creek versus smaller, highly enriched tributaries within Oso Bay is unknown.

For this study, Oso Bay will be treated as a “box”, with the main input coming from Oso Creek, the mouth of which will be designated as the Yorktown Bridge and the main output as Oso Inlet. Flow rates into Oso Bay from Oso Creek will be obtained from a USGS gauging station and required reports from the Barney Davis Power Plant. Flow rates from a municipal wastewater plant into Oso Bay will be obtained from plant operators. Additional flow rates into Oso Bay from ungauged tributaries and out of Oso Bay into Corpus Christi Bay will be determined using Acoustic Doppler Current Profilers.

Objective:

The objective of this project is to gather flow rates from non-gauged tributaries in Oso Bay in order to calculate nutrient/organic matter loading into the system.

Performing Organization: Center for Coastal Studies
Total Project Funding: \$35,000
CBBEP Bays Plan Actions: WSQ-1, WSQ-3, WSQ-4, WSQ-5, SM-2

Background:

This project will address two important questions and complement the ongoing Total Maximum Daily Load (TMDL) and Implementation Plan for zinc in Nueces Bay. This project will identify if (1) there is a legacy layer of zinc in the sediment of Nueces Bay and (2) are the zinc sediment concentrations currently detected in the surficial layer legacy and redistributed by resuspension, or representative of the present zinc loading to Nueces Bay?

The Texas Department of Safety and Health Services (DSHS) closed Nueces Bay to the harvesting of oysters in January 1995 under authority of Chapter 436 of the Texas Health and Safety Code. Following the 1995 oyster closure, Nueces Bay was put on the *Texas Water Quality Inventory and 303(d) List* for impaired for oyster waters. The DSHS collected oysters from Nueces Bay in 2002 and again found elevated zinc levels in oysters ranging from 479-2300 mg/kg (CBBEP 2005). Since 2006, a total maximum daily load (TMDL) has been implemented in Nueces Bay (Segment 2482) for zinc in oyster tissue not meeting the state of Texas acceptable level of <700 mg/kg. The TMDL established total zinc criterion for surface water in Nueces Bay is 29 µg/L. For all other marine waters in the State of Texas the TCEQ established criteria is for dissolved zinc in water 87.2 µg/L and zinc in sediment 410 mg/kg. Consuming oysters contaminated with zinc over a long period can cause systemic adverse health effects including dehydration, abdominal pain, nausea, vomiting, lethargy, dizziness, anemia and changes in blood profiles (CBBEP 2005). Under the current FY 2012 TMDL, a total of 10 stations are sampled for zinc in sediment and water (seven in Nueces Bay proper, one in Nueces River tidal, and two in the Corpus Christi Inner Harbor) and five stations located in Nueces Bay proper are sampled for zinc in oyster tissue. Zinc in oyster tissue as of 2011 still exceeds the 700 mg/kg criterion although the electric generating power facility has not been in operation since 2002.

Assessment of historical records of zinc loading and deposition in Nueces Bay will be determined using sediment profiling to confirm if a legacy layer exists. Seven of the 10 stations currently sampled under the 2012 TMDL for zinc in Nueces Bay and up to 13 additional stations forming a transect extending from the historical two (2) ARSARCO outfalls in Nueces Bay will be sampled totaling up to 20 stations. All stations will have sediment profile assessments for zinc, TOC, sediment grain size, and lead (²¹⁰Pb) sediment dating (number of ²¹⁰Pb stations to be determined) at 1-2 cm, 3-7 cm, 8-12 cm, 13-17cm, and 18-25 cm increments. Sampling will occur once at each station in 2013. Sampling protocol will follow the methods outlined in the 2012 QAPP for the TMDL for zinc in Nueces Bay.

Objective:

This project will help the TMDL Program determine zinc legacy in the sediment as well as zinc re-suspension and distribution in Nueces Bay.

Performing Organization: CBBEP
Total Funding: \$15,000
CBBEP *Bays Plan* Actions: BD-1

Background:

Bay debris poses public health risks and reduces the aesthetic appeal of the bay system. It can degrade habitats, snare aquatic and wildlife species. These impacts result in costs: to the shrimper who tears his net by hanging up on debris; to the windsurfer who steps on a broken bottle; to the tourist industry when hotel rooms are unfilled because potential visitors would rather visit cleaner beaches; and to agencies and organizations who devote thousands of hours to cleaning the beaches along the bays.

Debris clean-up along the shoreline is a continual challenge along the Texas Coastal Areas. Every year, numerous clean-up events are coordinated and hundreds of tons of debris are collected and disposed. During certain periods of the year, heavy visitation by tourists results in overflowing garbage receptacles causing debris to be spread over large areas. Additionally, frustrated beach goers leave debris behind, not willing to transport it with them to their lodging site. Since prevention is generally more cost-effective than clean-up, CBBEP will approach this issue by strategically placing large garbage receptacles by request and in areas of high use to prevent debris from being mismanaged and ending up along the bay shorelines.

The CBBEP will also make dumpster service available upon request for coastal cleanups. The CBBEP will determine which cleanups to provide dumpsters based on the amount of project funding available.

Objectives:

- To reduce the amount of debris along coastal roadsides and shorelines by the placement of large garbage receptacles in strategic locations during high traffic weekends. (for example Memorial Day, Fourth of July, and Labor Day.)
- The CBBEP will also make dumpster service available upon request for Coastal Cleanups. Some examples of possible partners are the City of Corpus Christi Spring Break cleanup, TGLO Adopt a Beach, and other organized coastal clean ups. The CBBEP will determine which cleanups to provide dumpsters based on the amount of project funding available.

Performing Organization: CBBEP
Total Project Funding: \$60,000
CBBEP *Bays Plan* Actions: BTR-2, PEO-3

Background:

The CBBEP owns a 33 acre strip of land along the south bound side of HWY 181 bordering the north east portion of Nueces Bay. The majority of land surrounding Nueces Bay is under private ownership therefore limiting the amount of public access points. The CBBEP is also currently constructing approximately 175 acres of marsh adjacent to the CBBEP land along HWY 181 in State owned waters. This portion of Nueces Bay is protected on the south by HWY 181 and on the north by the bluffs along Nueces Bay. This shallow portion of Nueces Bay is ideal for kayaking and launching of small motorized skiffs.

The CBBEP would like to dedicate an old oilfield dock, which has been converted into a parking area by a previous CBBEP Project (#0932) for public access to Nueces Bay.

Objectives:

- Finish developing a parking and staging area for fisherman and paddle craft users (\$10,000).
- Finish the installation of a bollard & cable perimeter to keep vehicles in the approved parking areas and out of sensitive wetland habitat.
- Remove invasive species and debris from the parking area.
- Design & construct an ADA accessible elevated platform & informational kiosk overlooking the CBBEP Marsh Restoration Site.
- Work with Texas Parks & Wildlife Department to develop a Coastal Paddle Trail for this portion of Nueces Bay.
- Install interpretive signage at the site about the history of the site, marsh restoration project, and the wildlife that will benefit from the rebuilding of the marsh.
- Identify all project partners in the signage.

Project 1316**Interpretive Signage - Mollie Beattie Habitat Community & Kate's Hole Preserve**

Performing Organization: CBBEP
Project Partners: Texas General Land Office / Corpus Christi CVB
Total Project Funding: \$6,000 (\$4,000 CVB in-kind match - design and management)
CBBEP Bays Plan Actions: BTR-1, BTR-2, & BTR-3

Background:

The Mollie Beattie Habitat Community was created in 1996 through a Memorandum of Understanding between The General Land Office and the United States Fish and Wildlife Service. In 2008 CBBEP accepted the donation of an additional 53 acres directly adjacent to the Mollie Beattie Habitat Community.

These tracts of land contain a significant amount of intertidal habitat which is extensively used by a variety of shorebirds, wading birds, and other species, included the endangered piping plover. Two parking lots have been established for visitors to park their vehicles and enjoy the properties by foot. Interpretative signage was installed in one parking lot and has now been removed due to its dilapidated condition.

With the opening of Packery Channel and the increase in use of local bays, the importance of maintaining this unique habitat, while still providing public access for local users, is a top priority.

Objectives:

- Improve public access to the Mollie Beattie Habitat Community (MBHC) & the CBBEP Kate's Hole Preserve by developing and installing interpretive signage at both properties. Signage will be developed specifically for the habitats found in the MBHC (Corpus Christi CVB Partnership).
- Install interpretative signage at two MBHC access points. Both parking/ access areas are on State owned land one parking lot is leased by the CBBEP (Kate's Hole). Large interpretative signs will be installed at each access point. Smaller interpretative signs will be installed along a foot path leading from the parking lot at MBHC to Packery Flats. Habitat along this trail consists of barrier island grasslands that transition into wind tidal flats adjacent to Packery Flats/Corpus Christi Bay.

Performing Organization: Aransas County
Total Project Funding: \$7,500 (\$20,000 Aransas Pathways)
CBBEP Bays Plan Actions: BTR-1, BTR-2

Background:

This project is a part of the Aransas Pathways Project. The Aransas Pathways Project is a cooperative effort led by Aransas County involving the City of Rockport, the Towns of Fulton and Lamar, and the Rockport-Fulton Chamber of Commerce to establish a center of focus for Aransas County ecotourism. The voters of Aransas County overwhelmingly approved the use of Venue Tax to fund the Aransas Pathways Project in an election held May 15, 2011.

Aransas Pathways will increase ecotourism within Aransas County by developing, documenting, and promoting historical sites and natural sites for birding, kayaking, fishing, and other outdoor recreation. The Project will link these sites by a countywide network of clearly marked and well-maintained trails, pathways, and roads.

The goal of the Aransas Pathways Kayak Project is to identify launch sites, make what improvements we can and implement an outreach program to make information about the launch sites available to the general visiting public. Aransas County, TX has one of the best shallow water fishing and kayaking areas in the state and kayakers come from all over to enjoy these resources. Until now, a majority of these launch sites have been know only to locals and some visitors who have researched the area to find them. An informal survey of local fishing guides, anglers and kayak enthusiasts identified 17 existing and potential kayak launch sites. The 17 sites give a wide variety of access to local bays for fishing and birding.

The Turtle Bayou Launch Site is the highest priority kayak launch site project for the year 2013. This site will provide kayakers safe and easy access to Turtle Bayou proper and Estes Cove. Both of these venues are excellent shallow water paddling and fishing sites.

The proposed Turtle Bayou Launch Site is located at 27° 58.587' N 97° 5.044; W near where Turtle Bayou Road ends at the GICW. The site is on TXDoT property. TXDoT has informally indicated that they would be agreeable to a long-term lease for this project.

The intent is to extend Turtle Bayou Road into the TXDoT property and build a parking lot for use by kayakers. The road extension will be constructed to county road standards. The parking lot will be constructed using TXDoT Type 1, grade A limestone as a base. The site will be equipped with garbage containers and will be regularly serviced by Aransas County employees.

Objective:

Provide access and build a kayak launch site to Turtle Bayou.

Project # 1318 Aransas Pathways Kayak Launch: Swan Lake

Performing Organization: Aransas County
Total Project Funding: \$7,500 (\$17,500 Aransas Pathways)
CBBEP Bays Plan Actions: BTR-1, BTR-2

Background:

This project is a part of the Aransas Pathways Project. The Aransas Pathways Project is a cooperative effort led by Aransas County involving the City of Rockport, the Towns of Fulton and Lamar, and the Rockport-Fulton Chamber of Commerce to establish a center of focus for Aransas County ecotourism. The voters of Aransas County overwhelmingly approved the use of Venue Tax to fund the Aransas Pathways Project in an election held May 15, 2011.

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This site will provide kayakers safe and easy access to Swan Lake proper and the southwest side of Copano Bay. Both of these venues are excellent shallow water paddling and fishing sites. Swan Lake currently has no easy access for kayakers.

The proposed Swan Lake Launch Site is located at 28° 2.327' N 97° 9.574' W near where Copano Retreat Road ends at Copano Bay. The site is on private property. The intent is to build a parking lot on Aransas County right of way at the end of Copano Retreat Road and obtain a walking easement across the property from the current owners. The parking lot will be constructed using TXDoT Type 1, Grade A limestone as a base. The site will be equipped with garbage containers and will be regularly serviced by Aransas County employees.

Objective:

Provide access and build a kayak launch site to Swan Lake.

Performing Organization: CBBEP
Total Project Funding: \$25,000
CBBEP Bays Plan Actions: BTR-1, PEO-2, PEO-3 and PEO-5

Background:

Public outreach continues to be a key element of the CBBEP to educate Coastal Bend residents about the importance of bays and estuaries to their communities. The CBBEP will utilize local and regional media, which includes television, radio, print, and websites, to implement the goals of the CBBEP Public Outreach Strategy. The priority issues for this media campaign as identified in the Coastal Bend Bays Plan are: altered freshwater inflow into bays and estuaries; non-point source pollution; loss of wetlands and estuarine habitats; degradation of water quality; condition of living resources; altered estuarine circulation; public health issues.

Some or all of the priority issues listed above will be considered for public outreach through the media.

Objectives:

The goal is to use the media to provide the public with the environmental science knowledge to make sound decisions regarding the effective management of bay resources and to promote environmental stewardship through increasing awareness of the resources and the issues regarding their use.

Project 1320

Habitat Use by Red Knots and Piping Plovers in the Padre Island/Upper Laguna Madre Area

Performing Organization: CBBEP
Total Project Funding: \$ 75,740 (year 2) \$65,762 (in-kind and volunteer match)
CBBEP *Bays Plan* Action Items: HLR-1, HLR-4

Background:

The central and southern coast of Texas provides wintering habitat for substantial proportions (~50% or more) of Piping Plover during the nonbreeding season. Red Knots are present on area beaches especially in fall and spring but until recently very little was known about the breeding or wintering area for this species. Recent research indicates that this population of birds spends the winter in Texas, probably in the Laguna Madre, and migrates through the mid-continent to Arctic breeding grounds, independently from the population that migrates along the Atlantic coast. The Piping Plover is a Threatened species under the Endangered Species Act, and the Red Knot is currently a candidate for listing and will likely be listed as Endangered within the coming years.

Building on results from recent research, CBBEP staff is undertaking a project to conduct radiotelemetry on Piping Plovers and Red Knots on North Padre Island and the Laguna Madre to determine patterns of usage of both species throughout the nonbreeding phase of their life history. Developing this understanding of habitat needs and threats will be critical in development of a Recovery Plan if the Red Knot is listed as Endangered, and will help address critical data gaps identified in the Recovery Plans for the Piping Plover.

This is the second year of a two-year project. CBBEP will provide match to the project in the form of volunteer time in assisting with trapping efforts, and use of equipment provided by an academic institution.

Objectives:

- Trap and attach radio transmitters to enough of both species to maintain ~20 active radios from October through May.
- Use ground-based and aerial telemetry to track seasonal and daily movements.
- Assess habitat variables such as substrate type, feeding resources, predator threats.
- Provide USFWS and public land managers (NPS, NWR) with GIS products to facilitate decision-making.

Performing Organization: CBBEP
Total Project Funding: \$30,000
CBBEP *Bays Plan* Actions: HLR-1

Background:

The CBBEP is responsible for several properties including over 5,400 acres along the Nueces River and Nueces River Delta, 35 acres along Nueces Bay (HWY 181) and 53 acres on Mustang Island.

The CBBEP Nueces Delta Preserve is located 3 miles from the City of Odem and 20 miles from downtown Corpus Christi. The CBBEP Nueces Delta Preserve consists of approximately 5,400 acres in San Patricio and Nueces Counties that are owned and managed by the CBBEP as a conservation site for the purpose preserving natural habitat, function and species diversity in the Nueces River delta. The preserve is rich in diversity that can be characterized by Tamaulipan thorn scrub, grasslands, lomas, freshwater wetlands, riparian habitat, brackish wetlands, coastal wetlands mud flats and shoreline. The CBBEP's secondary goal for the preserve is for the property to be used for a variety of educational and research opportunities.

The funds provided by the project support the necessary management and routine maintenance of the properties, including but not limited to road maintenance, fencing maintenance, gates, brush control, equipment purchases, habitat and predator management (as appropriate and necessary), and property taxes.

Past project accomplishments include dike repair to a 50 acre created wetland, management equipment purchases, nest box construction, building maintenance, volunteer projects, aerial application of herbicide to invasive *huisache*, road repairs, construction of a parking area for school buses, creation of a wildlife observation area and water sampling station, establishing routine mowing of common areas, portable toilet and trash collection service.

Objective:

Provide for the ongoing maintenance and management of the Nueces Delta Preserve and other CBBEP properties.

Performing Organization: Texas A&M University-Corpus Christi
Total Project Funding: \$5,600
CBBEP *Bays Plan* Actions: HLR-4, WSQ-4

Background:

Mercury (Hg) is a dangerous pollutant that bioaccumulates in terrestrial and aquatic food webs and causes neurological damage in humans. Methyl mercury is the most toxic form of mercury and humans are exposed mainly through consumption of predatory fish, such as red drum. The populations most at risk of methyl mercury exposure are the offspring of women who consume large amounts of fish and seafood. Each year more than 60,000 children are at risk of developing neurodevelopmental disorders due to methyl mercury exposure in utero. Emissions from electric utilities are the source of most mercury in the environment. Atmospheric mercury occurs in both precipitation and particulates which is deposited into lakes, rivers, and estuaries where it is converted to methyl mercury.

The Gulf of Mexico Alliance (GOMA) Water Quality Priority Issue Team's Mercury Workgroup is addressing the issue of mercury in water, sediment, and fish tissues of the Gulf of Mexico. There is little available data to trace mercury from the environment and through the food web to humans. A GOMA-funded project is currently reviewing literature sources to build food webs for selected commercial and recreational fish species that are both consumed by humans and which have been reported to contain elevated concentrations of mercury. This project will complement the GOMA project by providing much needed information on mercury concentrations in the tissues of shrimps, crabs, worms, and other components of the food webs of red drum, black drum and spotted seatrout.

San Antonio Bay (SAB) and Nueces Bay (NB), which are located partially or fully in the Coastal Bend Bays and Estuaries program region, and Lavaca Bay have extensive oyster reef habitats and are popular areas for fishing and crabbing. These bays serve as nursery areas for shrimps, crabs, and juvenile fishes, and many birds use these areas for feeding. It is important that we assess and supplement the limited data available on mercury concentrations in sediments and tissues of organisms in these ecosystems to determine pathways of mercury movement in the food webs.

A list of probable prey items for popular game fishes red drum, black drum, and spotted seatrout will be developed from review of existing literature. Game fishes, prey organisms, including fishes, shrimps, crabs, marine worms, and mollusks, phytoplankton, zooplankton, submerged vegetation, and sediments, will be collected for stable isotope (C and N) and mercury analyses. In addition, the stomach contents of game fishes will be determined. Sampling will occur in the spring and fall to account for migrations of brown and white shrimp, and seasonal differences in mercury concentrations. Mercury analyses will be conducted by the TPWD Environmental Chemistry Lab and stable isotopes of C and N by the Stable Isotope Geoscience Facility at TAMU, College Station. The data on stomach contents and stable isotopes will guide us in food web construction, while mercury concentrations will be used to develop a preliminary model of the movement of Hg through the LB, SAB and NB food webs using software such as TrophicTrace or Ecopath.

The overall GOMA project will 1) analyze tissues and major food organisms of popular Texas coastal game fishes to assess concentrations of mercury in the LB, SAB and NB food webs; 2) conduct stomach content analysis on the selected games fishes to determine and/or confirm their food choices; 3) conduct stable isotope analysis on selected predator and prey organisms to determine and/or confirm their food web linkages; and, 4) construct a model of likely pathways of mercury bioaccumulation in food webs.

Objective:

CBBEP funding will augment the overall GOMA project, to allow approximately 120 additional Hg analyses in the Coastal Bend region – primarily in Nueces Bay, but with a limited number in San Antonio Bay.

Performing Organization: **CBBEP**
Total Project Funding: **\$3,000**
CBBEP Bays Plan Actions: **HLR-1, HLR-2, HLR-4**

Background:

TPWD has successfully implemented a seagrass protection regulation in Redfish Bay on the mid Texas coast. The TPW Commission directed the staff to expand their efforts to further protect seagrass from outboard motor propeller uprooting. The staff is developing a coast wide strategy to maintain/broaden its seagrass education and outreach as well determine those areas of highest need for possible regulatory protection against habitat destruction. Having reviewed coast wide seagrass communities, their stressors, and their need for additional research and/or protection, we concluded that the JFK Causeway area of the upper Laguna Madre should receive our primary focus.

TPWD has determined that there is aerial imagery available that was taken in 1997 and in 2008. They contracted to obtain high resolution aerial photography in 2012 and 2014 later for this area in order to assess propeller scar damage as was done in Redfish Bay State Scientific Area. Acquisition of the historical imagery would enable TPWD to begin analysis of prop scarring well before our secondary acquisition in 2014, allow comparison of earlier simpler techniques to current analysis techniques, and (most importantly) potentially provide up to 4 years of trend data.

The goal of this project is to acquire two years of historical data so that it can be used assess prop scar damage in the JFK causeway area. Analysis of the images will be completed by TPWD staff and comparisons made between the early years and subsequent years (2012 and 2014) following enhanced education/outreach efforts.

The requested \$3000 is solely for the acquisition of scanned and geo-referenced images from 1997 and 2008 areas within the JFK Causeway area. The images will be analyzed and determinations made if they can be used in developing scar density assessments – after implementation of TPWD’s sea grass protection program and acquisition of the 2012 and 2014 images.

Objective:

Acquire (and deliver to TPWD) geo-referenced aerial photography from 1997 and 2008, showing seagrass coverage in the vicinity of the JFK Causeway.

Performing Organization: CBBEP
Total Project Funding: \$100,000
CBBEP Bays Plan Actions: HLR-1, HLR-2

Background:

Egery Flats is a wetland complex comprised of extensive tidal flats marginally separated by emergent marsh ridges near the confluence of the Aransas River and Copano Bay. The wetlands receive tidal waters from 8-foot-wide culverts located in two areas under FM136 that provide ample hydrology to the area. During low tide, the exposed flats support thousands of migrating shorebirds feeding on macrobenthic infauna. During high tide, the inundated flats support wading birds, waterfowl, fish, shrimp, and crabs.

Recent photographic analysis indicates that Egery Flats has lost approximately 100 acres of estuarine marsh since the 1950's. We speculate that this conversion is the result of sea-level rise. Restoring these estuarine marshes will help preserve the quantity, quality, and diversity of habitats and living resources of Egery Flats for years to come in the face of rising sea level. In addition, this area has been identified by U.S. Fish and Wildlife Service as an area of potential range expansion for the endangered Whooping Crane (*Grus americana*), which depend on aquatic resources associated with estuarine marsh.

To determine the feasibility of restoring and preserving estuarine marsh and tidal flats of Egery Flats, the contracted party should survey and map existing aquatic habitats, elevations, and substrate types within Egery Flats. Additionally, the contracted party should determine the feasibility of beneficially using dredged material from nearby public and private sources for restoration purposes.

Objectives:

- Gather existing data and conduct field investigations at Egery Flats for the purpose of assessing the feasibility of potential restoration alternatives.
- Conduct a feasibility assessment and alternatives analysis for marsh restoration at Egery Flats.
- Prepare conceptual drawings and a permit application for the selected restoration alternative.

Performing Organization: To Be Determined
Total Project Funding: \$1,000,000
CBBEP *Bays Plan* Actions: HLR-1, HLR-2

Background:

Indian Point Peninsula supports the section of U.S. Highway 181 that crosses Nueces Bay, between the cities of Corpus Christi and Portland. CBBEP has documented the loss of approximately 300 acres of salt marsh due to construction of the highway and subsequent erosion since the 1940s. Continuing erosion due to wind waves, tidal currents, ship traffic, and storms is undermining the stability of the shoreline that protects this crucial infrastructure and habitat. In fact, ongoing erosion has led to the recent demolition (for safety reasons) of an elevated walkway historically used by park visitors for fishing and bird-watching.

To offset documented habitat loss, CBBEP has restored approximately 160 acres of marsh habitat along the northwest side of the peninsula. CBBEP is developing plans to protect the new marsh complex, adjacent habitat, and back-lying infrastructure along the peninsula with a 4,300 foot rock breakwater. Permitting for these activities is complete, and final engineering design is underway.

Indian Bay Park, on the southeast side of the peninsula, has an access road, parking lot, bathroom facilities, and public fishing pier. The park also contains a wetlands complex that provides great wildlife habitat and ecotourism benefits. CBBEP has conducted a feasibility assessment for the construction of a series of breakwater segments and revetments along the southeast side of the peninsula, and is in the process of permitting these activities.

Objectives:

- Complete final design and permitting for all planned protection structures.
- Construct protection structures (following a phased approach that allows for construction activities to be scaled according to available funding).
- Implement other protection and restoration strategies (such as vegetation planting) that will provide long-term benefit to the peninsula.

Performing Organization: To Be Determined
Total Project Funding: \$1,000,000
CBBEP *Bays Plan* Actions: HLR-1, HLR-2

Background:

According to a study conducted by the University of Texas Marine Science Institute, the face of the Nueces River Delta is eroding at an average rate of 8.2 feet per year, resulting in the on-going loss of emergent intertidal and sub-tidal marsh habitat. This disappearing fringe protects additional marsh habitat further inland, open-water channels and small lakes, and upland habitats that depend on the lower-lying marsh. As the size of these habitats decrease, so will the abundance and diversity of the wildlife that breeds, nests, and shelters in the delta. The delta harbors numerous state- and federally-listed endangered species and species-of-concern. Diamondback terrapin turtles and blue crabs utilize the Nueces Delta. Avian species found in the delta include the white pelican, brown pelican, peregrine falcon, Texas bald eagle, burrowing owl, reddish egret, black skimmer, least tern, snowy plover, and piping plover. Native Texas thorn scrub in the uplands is utilized by numerous birds and mammals for nesting and foraging.

CBBEP has completed a preliminary feasibility study and alternatives analysis. This project will follow-up on that preliminary study by conducting additional site investigations, refining the protection alternatives, and permitting the selected alternative. The selected protection alternative will be designed to not only stabilize the delta shoreline, but also to trap sediment and allow for the eventual accretion of the shoreline.

Objectives:

- Complete field investigations, refine the alternatives analysis, and identify preferred actions for protection of the delta.
- Complete final design and permitting for the selected protection actions.
- Construct protection structures (following a phased approach that allows for construction activities to be scaled according to available funding).
- Implement other protection and restoration strategies (such as vegetation planting) that will provide long-term benefit to the delta.

Performing Organization: **CBBEP**
Total Project Funding: **\$4,000,000**
CBBEP *Bays Plan* Actions: **HLR-1, HLR-2, HLR-4**

Background:

The Aplomado Falcon, Attwater’s Prairie Chicken, and Whooping Crane are endangered species that occur in coastal Texas, and whose ranges overlap to varying degrees with one another, as well as with many migratory birds which have experienced long-term, broad-scale declines across much of their ranges. These species can neither recover nor be sustained unless habitat sufficient to support viable populations is conserved. Habitat for these species has been degraded by the production of food and fiber, and is being lost to development and rising sea-levels.

Since 2002, CBBEP has worked to acquire either fee simple title or conservation easements for more than 7,200 acres of freshwater marsh, forested wetlands, mudflats, riparian corridors, and native upland habitat for conservation management. CBBEP has coordinated with U.S. Fish & Wildlife Service, Natural Resources Conservation Services, and The Nature Conservancy to develop and implement management plans and restoration actions throughout this protected habitat. CBBEP has also coordinated worked with other property owners (such as Aransas National Wildlife Refuge, Texas Parks and Wildlife Department, City of Corpus Christi, South Texas Botanical Gardens and Nature Center, and private property owners) to develop and implement restoration actions on their property.

CBEP will coordinate with USFWS, USDA-NRCS, and other conservation organizations to acquire either fee simple title or a conservation easement for 2,000 acres with habitat that supports Aplomado Falcons, Attwater’s Prairie Chickens, and Whooping Cranes. Acquisition will conform to all requirements of NRCS’s Wetland Reserve Enhancement Program.

Objective:

Acquire either fee simple title or a conservation easement for 2,000 acres with habitat that supports the at-risk species identified above.

Performing Organization: **CBBEP**
Total Project Funding: **\$204,689**
CBBEP Bays Plan Actions: **HLR-2, HLR-4**

Background:

The Aplomado Falcon, Attwater's Prairie Chicken, and Whooping Crane are endangered species that occur in coastal Texas, and whose ranges overlap to varying degrees with one another, as well as with many migratory birds which have experienced long-term, broad-scale declines across much of their ranges. These species can neither recover nor be sustained unless habitat sufficient to support viable populations is conserved. Habitat for these species has been degraded by the production of food and fiber, and is being lost to development and rising sea-levels.

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CBEP will coordinate with USFWS, USDA-NRCS, and other conservation organizations to identify and implement restoration actions that benefit a minimum of 2,000 acres of habitat for Aplomado Falcons, Attwater's Prairie Chickens, and Whooping Cranes.

Objective:

Identify and implement restoration actions that benefit a minimum of 2,000 acres of habitat for Aplomado Falcons, Attwater's Prairie Chickens, and Whooping Cranes.

VIII. Program Administration

CBBEP administrative staff (3 FTE's) will provide organizational and logistical support for Estuary Council and subcommittee meetings, and coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to CCMP implementation. Staff will:

1. Acquire, manage, and disperse funds to implement the *Bays Plan*;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Develop a prioritized biennial work plan and budget for Estuary Council review and approval;
4. Coordinate the periodic update of the *Bays Plan*, the *State of the Bay* report, the *Implementation Strategy*, and other key documents of the program;
5. Provide logistical support for all meetings, workshops, symposia, and special events related to program mission;
6. Provide for overall program coordination with EPA Region 6 and TCEQ.
7. Participate in regional, state, and national conferences and meetings relevant to estuarine management.
8. Develop and implement policies and procedures for an emergency contingency plan which will include: protecting financial records, office equipment, computers, and other vital records and equipment; employee responsibilities; backup and storage of data; and recovery actions.
9. Continued implement a management system to track and assess Quality Assurance Project Plans (QAPPs) and determine required corrective actions and follow-up to be completed on date determined by TCEQ.

IX. Project Management and Implementation

CBBEP Project Management staff (10 FTE's) will coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to *Bays Plan* implementation. Staff will:

1. Develop and implement partnership projects with local governments, state, and federal agencies, and private organizations;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Provide communication and coordination with the Texas Coastal Management Program and the Coastal Coordination Council, the Gulf of Mexico Program, the Texas Commission for Environmental Quality (TCEQ), and other relevant coastal/watershed programs;
4. Coordinate the review of proposed actions of federal, state, and local projects in an open process for consistency with the *Bays Plan*;
5. Develop a prioritized biennial work plan and budget for Estuary Council review and approval;
6. Provide for overall program coordination, including quality control/quality assurance procedures with EPA Region 6 and TCEQ.
7. Participate in regional, state, and national conferences and meetings relevant to estuarine management.

X. Program Expenses

CBBEP funds will be used to support continued program implementation, evaluation, and reporting. Funds are also necessary to provide logistical support for the Bays Council and subcommittee meetings. Expense categories are as follows:

1. Travel – allows Program staff to attend state, regional and national meetings, workshops, and conferences;

2. Supplies – as needed, for the day-to-day operations of the Program;
3. Equipment – purchase of items over \$1,000, i.e. computers;
4. Other – copier rental, temporary staff, postage, communication services, accounting services, printing, etc.

XI. Working Capital

The CBBEP Board of Directors has established working capital out of local funding. The funds will be set aside for possible future projects, matching funds and/or emergency funding.

XII. Summary

On September 1, 2012, the Coastal Bend Bays & Estuaries Program will begin Year 15 of implementing the *Coastal Bend Bays Plan*. This FY 2013 Work Plan describes the proposed work to be initiated during FY 2013. Of the total funds identified in the Work Plan budget, \$597,333 are new (FY 2013) EPA federal funds, \$626,504 are new (FY 2013) TCEQ funds, \$6,390,740 are new (FY 2013) project-specific funds, \$293,500 are new (FY 2013) local partner/federal court interest funds and \$61,000 are FY 2012 Carry Forward funds. The total budget for this FY 2013 Work Plan is \$7,969,077.

TABLE 1: FY 2013 COMPREHENSIVE ANNUAL WORK PLAN OUTLINE

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY13 CWA 320	TCEQ FY13 & 604b	LOCAL/ COURT INTEREST	TPWD	CEPRA	NRCS	USFWS	FY12 CF	TOTAL CBBEP FUNDING
1301	Coastal Waterbird Management	HLR-1, HLR-4	CBBEP	135,000								\$135,000
1302	Coastal Bend Environmental Science – Learning on the Edge (LOTE)	PEO-3, PEO-5	CBBEP	156,000								\$156,000
1303	Field Trip Funding for the Delta Preserve	PEO-3, PEO-5	CBBEP	10,000								\$10,000
1304	CBBEP Community Outreach Partnerships	PEO-1, PEO-2, PEO-3, PEO-4, PEO-5	Coastal Bend Bays Foundation	20,000		20,000						\$40,000
1305	CBBEP Public Outreach Events & Activities	PEO-1, PEO-2, PEO-3, PEO-4, PEO-5, BTR-1	CBBEP	15,000		15,000						\$30,000
1306	Sea Level Rise Model (SLAMM) in Corpus Christi Bay	SM-2, HLR-1, PEO-1	The Nature Conservancy	25,000								\$25,000
1307	Aplomado Falcon Habitat Enhancement	HLR-2, HLR-4,	TBD	14,289		10,711				50,000		\$75,000
1308	Partnering for Teacher Workshops	PEO-3, PEO-5	CBBEP			4,000						\$4,000
1309	Outdoor Classrooms	PEO-3, PEO-5	CBBEP & USFWS			5,000						\$5,000
1310	Clearing House for Air and Water Quality	PEO-1, PEO-4	City of Corpus Christi								1,000	\$1,000

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY13 CWA 320	TCEQ FY13 & 604b	LOCAL/ COURT INTEREST	TPWD	CEPRA	NRCS	USFWS	FY12 CF	TOTAL CBBEP FUNDING
1311	Nueces Delta Environmental Monitoring	FW-1, FW-2, FW-3, FW-4	Conrad Blucher Institute		35,000	3,000						\$38,000
1312	Ungauged Flow In Oso Bay	WSQ-3, WSQ-4, WSQ-5, NPS-4	TAMU-CC			19,000						\$19,000
1313	Nueces Bay Zinc Legacy Project	WSQ-1, WSQ-3, WSQ-4, WSQ-5, SM-2	Center for Coastal Studies		35,000							\$35,000
1314	Debris Management at Public Access Sites	BD-1	CBBEP			15,000						\$15,000
1315	Nueces Bay Marsh: Public Access Enhancements	BTR-2, PEO-3	CBBEP								60,000	\$60,000
1316	Interpretative Signage: Mollie Beattie Habitat Community & Kate's Hole Preserve	BTR-1, BTR-2, BTR-3	CBBEP			6,000						\$6,000
1317	Aransas Pathways Kayak Launch – Turtle Bayou	BTR-1, BTR-2	Aransas County			7,500						\$7,500
1318	Aransas Pathways Kayak Launch – Swan Lake	BTR-1, BTR-2	Aransas County			7,500						\$7,500
1319	CBBEP Habitat Protection Media Campaign	BTR-1, PEO-2, PEO-3, PEO-5	CBBEP			25,000						\$25,000
1320	Habitat Use-Red Knots & Piping Plovers in the Padre Island/Upper Laguna Madre Area II	HLR-1, HLR-4,	CBBEP				75,740					\$75,740
1321	CBBEP Property Management	HLR-1	CBBEP			30,000						\$30,000

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY13 CWA 320	TCEQ FY13 & 604b	LOCAL/ COURT INTEREST	TPWD	CEPRA	NRCS	USFWS	FY12 CF	TOTAL CBBEP FUNDING
1322	Assessment of Mercury in Selected Game Fish Food Webs	HLR-4, WSQ-4	TAMU-CC			5,600						\$5,600
1323	Seagrass Assessment in the Vicinity of JFK Causeway	HLR-1, HLR-2, HLR-4	CBBEP			3,000						\$3,000
1324	Egery Flats Restoration: Feasibility and Permitting	HLR-1, HLR-2	CBBEP			35,000	65,000					\$100,000
1325	Indian Point Peninsula Shoreline Stabilization and Habitat Protection	HLR-1, HLR-2	TBD					1,000,000				\$1,000,000
1326	Nueces Delta Shoreline Stabilization and Habitat Protection	HLR-1, HLR-2	TBD					1,000,000				\$1,000,000
1327	Gulf Coast Conservation Initiative (Acquisition)	HLR-1, HLR-2, HLR-4	CBBEP						4,000,000			\$4,000,000
1328	Gulf Coast Conservation Initiative (Restoration)	HLR-2, HLR-4	CBBEP			4,689				200,000		\$204,689
	TOTAL PROJECT FUNDS			\$375,289	\$70,000	\$216,000	\$140,740	\$2,000,000	\$4,000,000	\$250,000	61,000	\$7,113,029
	Administrative / Travel		CBBEP	\$222,044	556,504	\$77,500						\$856,048
	TOTAL FUNDING			\$597,333	\$626,504	\$293,500	\$140,740	\$2,000,000	\$4,000,000	\$250,000	\$61,000	\$7,969,077