

CHAPTER

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# Delta Discovery

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## Introduction

The CBBEP is committed to preparing tomorrow's future leaders to be responsible stewards by providing them with knowledge and understanding of our bays and estuaries. To fulfill this commitment, the CBBEP has created the Delta Discovery Program to increase the estuary literacy of students and teachers within the Coastal Bend. It is important that local teachers and students understand 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. In addition to understanding how the bay system functions, it is important that young people develop a sound appreciation for the significant value and economic impact derived from the bay resources. Local students are likely to become the next generation of local decision-makers and their teachers are in a position to help them understand the importance of coastal resources.

The Delta Discovery Program implements hands-on, discovery-based programs that help students learn about essential coastal and estuarine concepts and strengthen their critical thinking, team building, and problem solving skills. The main audience for Delta Discovery programs are PK-12 students and teachers, but target audiences range from toddlers to senior adults. Curriculum is discovery-based and aligned with state/national standards, providing students a connection between classroom instruction and practical application through outdoor experiences. Field trips are primarily conducted at the CBBEP Nueces Delta Preserve, but other CBBEP properties and partner sites are utilized on occasion. The 10,500 acre Nueces Delta Preserve is located at the north end of Nueces Bay near Odem, Texas. The property protects a variety of habitats (coastal marshlands, wetlands, open water, islands, upland prairie, and bay shorelines) and is known for the quality of its conservation and land management practices. The 2017 Bays Plan calls for the Delta Discovery Program to continue offering discovery-based, hands-on experiences to students of the Coastal Bend at the Nueces Delta Preserve and other sites, as needed.

The Plan also calls for the Delta Discovery to offer workshops that provide educators the tools needed to incorporate outdoor experiences more readily into formal classroom instruction and programming. By providing teacher workshops that complement student field trips, Delta Discovery ensures that teachers can successfully

◀ **STUDENTS EXPLORE THE NUECES DELTA PRESERVE**  
and record their observations in a field journal.  
(Photo by the CBBEP)



## ACCOMPLISHMENT: Record Year for Delta Discovery

The 2015-2016 school year was record-breaking for the Delta Discovery Program. The Program saw almost 10,000 PK-12 students, 600 teachers, and over 1,000 others through various outreach events. The Program is based at the Nueces Delta Preserve and offers classroom curriculum and on-site activities to introduce students and teachers in the Coastal Bend to issues affecting the bays and estuaries, as well as the local ecology of the Preserve. Engaging field experiences for all grade levels aligned with Texas Essential Knowledge and Skills (TEKS) are available, allowing students and teachers to get 'mud between their toes' and connect with nature through discovery-based learning.

During the 2015-2016 school year, Delta Discovery was able to reach more students than ever before, but the most notable increase in attendance was at teacher workshops. Almost 600 teachers earned Continued Professional Education Credits and Texas Environmental Education Advisory Committee Credits, compared to 73 teachers the year before. At the heart of it all is connecting classrooms to nature, and teacher workshops are key to providing teachers the tools they need to bring the outdoors and environmental education into their classrooms.

In addition to formal K-12 educational opportunities, Delta Discovery began two new programs during the same timeframe called Nature Story Time and Delta Discovery Picnic Days. Delta Discovery Picnic Days allow students who have visited the Delta through a school field trip to bring their families, share what they've learned, and explore a little more. Nature Story Time targets children ages 2-5 and allows families to enjoy days at the Delta with nature-themed stories and other activities including nature walks, crafts, and/or live animals. Both of these programs are open to the public and will continue into the future.



## **ACCOMPLISHMENT:** Youth Odyssey Visit Nueces Delta Preserve

In 2010, Delta Discovery and Youth Odyssey teamed up to host overnight camping trips for 150 kids from the Youth Odyssey program. With the help of a \$36,000 grant from the Texas Parks and Wildlife Department, Youth Odyssey leaders and participants were able to visit the Nueces Delta Preserve for overnight camping trips. These are true camping trips, with the youth pitching tents, cooking, and cleaning the site themselves. There is also hiking and kayaking activities.

Combining life skills and outdoor experiences, Youth Odyssey provides a special perspective to kids struggling with school and life. Nature is used to help participants realize they have talents that will help them be a successful community member. Youth Odyssey participants are selected by schools and recreation centers throughout the area. The children, ages 10-17, attend team-building sessions that focus on basic life skills - communication, goals setting, problem solving, leadership, and trust - before going kayaking, hiking, rock climbing, and camping.

By partnering with Youth Odyssey, the Delta Discovery Program was able to expand its mission of reaching children who might not otherwise get the chance to go outdoors. Kids are given time away from distractions - television, video games, school bullies, and complicated home lives - in a place where they can focus on bettering themselves. Programs like Delta Discovery and Youth Odyssey are also critical for getting the next generation into the outdoors so they in turn will work to protect and preserve that natural world. For children who haven't spent much time outdoors, this can be a life-changing experience.

connect instruction in the classroom with real world application. In addition to curriculum, workshop participants also receive supplies and equipment necessary to implement programs in the classroom, as well as staff support if necessary.

The 2017 Bays Plan recognizes that outdoor community programs can help foster behavioral change and promote resource conservation by working with audiences whose choices directly impact the integrity of our estuaries and their watersheds. At the Nueces Delta Preserve, community programs provide opportunities for the public to experience our local bays and estuaries first-hand. For example, Delta Discovery currently provides a program called "Nature Story Time," and families are also able to participate in outdoor activities at the Nueces Delta Preserve during "Delta Discovery Picnic Days." These special events allow families to explore the wonders of the Nueces Delta Preserve with staff scattered throughout the Preserve to answer questions and give background information on plants, animals, and history.

Enhancing public awareness and understanding of estuarine systems and providing suitable opportunities for public education and interpretation would be very difficult goals to fulfill without partners. Partnerships are key to helping the Delta Discovery Program create broader reaching programs that may be of interest to a larger audience. Delta Discovery focuses on bringing together people and organizations with varied expertise that can help provide educational programs and trainings focused on a wider breadth of topics. Partnership programs may involve the utilization of partner staff and/or facilities.

**THE NUECES DELTA PRESERVE** serves as home for the Delta Discovery Program. Facilities at the site include an outdoor pavilion, screened-in classroom, and restroom facilities.





# DELTA DISCOVERY

## Action Plan

### GOAL

Increase environmental literacy and stewardship of coastal watersheds through formal and informal education utilizing the Nueces Delta Preserve, other CBBEP properties, and partner sites.

### OBJECTIVES

- DD 1: Enhance the capacity of students to think critically about the environment and their role in watershed stewardship by connecting them to nature through guided discovery.
- DD 2: Expand opportunities for children, adults, and families to participate in experiential outdoor learning programs.

### ACTIONS

- DD 1.1: Provide authentic discovery-based experiences for PK-12 students and beyond that are aligned to cross-curricular state/national standards.
- DD 1.2: Provide professional development and resources for educators that allow them to connect classroom instruction with real-world application.
- DD 1.3: Identify and promote partnership opportunities with like-minded organizations to develop and/or deliver programs that support the Delta Discovery mission of environmental education and coastal watershed protection.
- DD 2.1: Provide outdoor learning opportunities that facilitate hands-on investigations of and experiences in the natural environment.



## Delta Discovery 1.1

Provide authentic discovery-based experiences for PK-12 students and beyond that are aligned to cross-curricular state/national standards.

The CBBEP is focused on educating the next generation of local decision-makers 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. The CBBEP offers hands-on field experiences for PK-12 students through its “Delta Discovery Program.” Curriculum is discovery-based and aligned with state/national standards, providing students a connection between classroom instruction and practical application through outdoor experiences. Environmental education not only connects classroom learning to the real world, it builds critical thinking, fosters leadership and relationship skills, and when integrated into the core curricula has a measurable positive impact not only on student achievement in science, but also in reading, math, and social studies. Field trips are primarily conducted at the CBBEP’s Nueces Delta Preserve, but other CBBEP properties and partner sites are utilized on occasion. Delta Discovery provides field trip opportunities for over 8,000 students annually at the Nueces Delta Preserve.

### STEP 1:

Seek continued funding to support personnel and supplies needed to implement field-based experiences.

### STEP 2:

Continue to develop productive relationships with teachers and administrators from Coastal Bend schools and home school programs in order to promote high levels of participation in field-based experiences.

### STEP 3:

Develop and implement topic and grade specific field trip programs. This includes creation of pre- and post-materials, implementation of field trip activities, and completion of student assessments.

### STATUS



**UNDERWAY:** The Delta Discovery Program routinely provides hands-on field experiences for over 8,000 PK-12 students annually, and the program will continue to do so throughout the applicable life of this plan.

### TIMEFRAME



**2017-2037:** Steps are considered on-going and will be implemented throughout the applicable life of this plan.

### COST



**ESTIMATED COST:** \$\$\$

**POTENTIAL FUNDING:** CBBEP Programmatic funds (EPA 320 funds); Private industry (e.g., Green Mountain, Union Pacific, Citgo); Foundations (e.g., CBBF, Ed Rochelle Foundation); State and Federal grants (e.g., TPWD, EPA)

### PARTNERS



**LEAD:** CBBEP

**POTENTIAL PARTNERS:** Step 1 = Foundations; Private industry; Programmatic Partners (e.g., TPWD, WIF, TSA); Step 2 = ESC Region 2 & 3; Home schools (e.g., HSST, HUT); Private schools; Public school districts; TEA; TEEAC; Step 3 = Delta Discovery Advisory Committee; Programmatic partners (e.g., TPWD, WIF, TSA); Teachers, administrators, and volunteers; TMN; TPWD; Universities

### PERFORMANCE METRICS



1. Number of students, teachers, schools, and school districts participating in field-based experiences.
2. Number of returning teachers, schools, and school districts.
3. Demonstration of learning objectives in student assessments.
4. Teacher/workshop evaluations.



## Delta Discovery 1.2

Provide professional development and resources for educators that allow them to connect classroom instruction with real-world application.

Teaching individuals and communities about the environment enhances public understanding of the values and functions of the natural resources in the Coastal Bend and provides motivation for solving environmental problems. Delta Discovery offers workshops that give educators the tools they need to more readily incorporate outdoor experiences into formal classroom instruction/programming. By providing teacher workshops that complement student field trips, Delta Discovery is ensuring teachers can successfully connect instruction in the classroom with real world application. Workshop participants also receive supplies and equipment necessary to implement programs in the classroom, as well as staff support if necessary. In the past, Delta Discovery has provided workshops to as many as 600 teachers.

### STEP 1:

Update existing and create new content and curricula for professional development trainings.

### STEP 2:

Identify, develop, and obtain resources (e.g., teaching supplies, curricula, staff support) for educators that promote concepts covered in professional development trainings and enhance classroom teaching.

### STEP 3:

Implement and host professional development trainings. This includes scheduling, providing “ask an expert” visits, hosting interpretive workshops, and conducting assessments of training events.

### STEP 4:

Continue to develop productive relationships with teachers and administrators from Coastal Bend schools and home school programs in order to promote high levels of participation in field-based experiences.

### STATUS



**UNDERWAY:** The Delta Discovery Program routinely provides training workshops for teachers, reaching as many as 600 teachers in previous years. Delta Discovery will continue to provide training events throughout the applicable life of this plan.

### TIMEFRAME



**2017-2037:** Steps are considered on-going and will be implemented throughout the applicable life of this plan.

### COST



**ESTIMATED COST:** \$\$

**POTENTIAL FUNDING:** CBBEP Programmatic funds (EPA 320 funds); Private industry (e.g., Green Mountain, Union Pacific, Citgo); Foundations (CBBF, Ed Rochelle Foundation); State and Federal agencies (e.g., TPWD, EPA)

### PARTNERS



**LEAD:** CBBEP

**POTENTIAL PARTNERS:** Step 1 = ESC Region 2 & 3, National organizations (e.g., NAI), Programmatic partners (e.g., TPWD, WIF, CCMSH), TEA, TEAC, Universities; Step 2 = Non-profit organizations (e.g., Leopold Education Foundation, Berkley Center, Cornell Lab of Ornithology), State and Federal agencies (e.g., TPWD), Universities; Step 3 = NAI, State and Federal agencies, Universities; Step 4 = ESC Region 2 & 3; Home schools (e.g., HSST, HUT); Private schools; Public school districts; TEA; TEEAC; TPWD

### PERFORMANCE METRICS



1. Teacher assessments show an increase following trainings.
2. End-of-year surveys show that content from professional development trainings is implemented in classrooms.
3. Communication is maintained between teachers and CBBEP educators throughout the school year.



## Delta Discovery 1.3

Identify and promote partnership opportunities with like-minded organizations to develop and/or deliver programs that support the Delta Discovery mission of environmental education and coastal watershed protection.

Collaborating with partners allows the Delta Discovery Program to provide educational programs and trainings focused on a wider breadth of topics by bringing together people and organizations with varied expertise (e.g., International Crane Foundation, TPWD Interpretation Staff, etc.). Additionally, these partnerships allow the Delta Discovery Program the opportunity to create broader reaching programs that may be of interest to a larger audience by utilizing the staff, and sometimes the facilities, of other organizations.

### STEP 1:

Research and vet potential partners for formal education programs (e.g., TCIN, ISEA of Texas).

### STEP 2:

Develop program (e.g., trainings, field trips) with identified partner. Steps for program development include: creating curriculum, agendas, and assessments; identifying roles and responsibilities; coordinating logistics (e.g., facilities and supplies); and identifying funding, if needed.

### STEP 3:

Once programs are developed, schedule, promote, and implement programs.

### STEP 4:

Survey partners to evaluate and assess programmatic successes and failures and determine likelihood for repeating programs in the future.

### STATUS



UNDERWAY

### TIMEFRAME



2017-2037: Steps will be implemented sequentially as partners are identified throughout the applicable life of this plan.

### COST



ESTIMATED COST: \$\$

**POTENTIAL FUNDING:** CBBEP Programmatic funds (EPA 320 funds); Foundations (e.g., CBBF, Ed Rochelle Foundation); Private industry (e.g., Green Mountain, Union Pacific, Citgo); School Districts; State and Federal agencies (e.g., TPWD, EPA)

### PARTNERS



LEAD: CBBEP

**POTENTIAL PARTNERS:** ANWR; CBCiN; CCS; CCMSh; City of Corpus Christi; ICF; MANERR; NRA; TCIN; TMN; TPWD; TSA; WIF

### PERFORMANCE METRICS



1. Number of programs requested by partners.
2. Number of programs completed with partners.
3. Number of programs repeated with the same partners.
4. Partner evaluations show a desire to continue partnership and repeat programs.
5. Teacher/student evaluations.



## Delta Discovery 2.1

Provide outdoor learning opportunities that facilitate hands-on investigations of and experiences in the natural environment.

One of the most effective methods of enhancing public awareness and understanding of natural resources involves getting people out into nature. Outdoor community programs can help foster behavioral change and promote resource conservation by working with audiences whose choices directly impact the integrity of our estuaries and their watersheds. At the Nueces Delta Preserve, community programs provide opportunities for the public to experience our local bays and estuaries first-hand. For example, Delta Discovery currently provides a summer program called “Nature Story Time.” Each session focuses on a theme and allows children, accompanied by a parent or caregiver, to enjoy days at the Delta with nature-themed stories and other activities, such as nature walks, crafts, and/or live animals. “Nature Story Time” activities are targeted for ages 2 -5, but all are welcome to come and enjoy. Families are also able to participate in outdoor activities at the Nueces Delta Preserve during “Delta Discovery Picnic Days.” These special events allow families to explore the wonders of the Nueces Delta Preserve with staff scattered around the Preserve to answer questions and give background information on plants, animals, and history. Delta Discovery is working to expand its community programs based on gaps that have been recognized in the local area and identifying potential partnerships.

### STEP 1:

Identify gaps and needs for community outdoor programs in the Texas Coastal Bend.

### STEP 2:

Identify organizations with existing programs that could be partnered with in order to fill identified gaps (e.g., Youth Odyssey, Boy Scouts of America, Wildlife In Focus).

### STEP 3:

Develop programs to fill identified gaps/needs.

### STEP 4:

Once programs are developed, schedule, promote, and implement programs.

### STEP 5:

Evaluate and assess program effectiveness by utilizing measures such as satisfaction surveys and social media posts.

## STATUS



**UNDERWAY:** Implementation of existing outdoor community education programs at the Nueces Delta Preserve, called “Nature Story Time” and “Delta Discovery Picnic Days,” is on-going.

## TIMEFRAME



**2017-2037:** Step 1 will occur approximately every two-three years. Following the completion of Step 1, the remaining steps will be implemented, as needed and as funding becomes available, throughout the applicable life of this plan.

## COST



**ESTIMATED COST:** \$

**POTENTIAL FUNDING:** CBBEP Programmatic funds (EPA 320 funds); Donations; Foundations (e.g., CBBF, Ed Rochelle Foundation); Private industry (e.g., Green Mountain, Union Pacific, Citgo); State and Federal agencies (e.g., TPWD, EPA)



## **PARTNERS**



**LEAD:** CBBEP

**POTENTIAL PARTNERS:** Boy Scouts of America; Girl Scouts; Libraries/Publishing Companies; TMN; WIF; Youth Odyssey

## **PERFORMANCE METRICS**



1. Number of visitors participating in outdoor community education programs.
2. Number of repeat visitors participating in outdoor community education programs.
3. Contact hours (i.e., time in nature) for outdoor community education program participants.
4. Satisfaction level with outdoor community education programming.