**2019-2020 ADDITIONAL BTNEP PROJECTS**

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***Ecological Management – Living Resources and Habitat***

**1. Breeding Bird Survey of the Caminada Headland and West Belle Pass – 2 X per year**

*Additional Funding Source: BTNEP and Volunteer Scientists*

Collect information related to species, GPS coordinates of nesting territories. Usually done during the months of May to June. Band data is also collected, birds are identified, and documented. Birds of interest include: Wilson Plover, Least Turn, Common Nighthawk, and Black Skimmer. Pictures of banded birds are catalogued to provide direct evidence of the sightings. Data files are compiled on Excel spreadsheets.

**2. Habitat Restoration at Grand Isle State Park**

*Funding Source: US Department of Justice through BTEF*

Grand Isle State Park sits at the eastern end of Grand Isle. The 160-acre park is operated by the

Louisiana Department of Culture, Recreation, and Tourism, and boasts a large fishing pier on the Gulf side, an adjacent observation tower, and boardwalk trails through wooded areas. It is in these wooded areas, and perhaps also in a smaller acreage of State Park-owned property on the western end of the island, that BTNEP proposes to implement a two-year program of invasive species control, planting of native vegetation, and establishment of micro-habitats specifically for pollinators. Invasive plant control activities will include treatment of invasive vegetation with herbicides. Equipment and supplies will include machetes, chainsaws, gasoline, backpack sprayers, chaps, herbicides, and ATV and UTV use. Restored areas will be reforested with native seedlings of woody species and understory vegetation. This will involve acquisition or propagation of plant materials and use of various gardening and landscaping implements, dibbles, shovels, and tree protectors (nutria guards). The pollinator program will include construction and placement of pollinator boxes, as well as the use of native plant materials selected specifically for the benefit of pollinator species.

**3. Ospray Nesting Platforms in Terrebonne Parish**

*Funding Source –Apache Louisiana Minerals and BTEF*

BTNEP, in partnership with Apache Louisiana Minerals and the Barataria-Terrebonne Estuary Foundation (BTEF) installed ten nest platform structures for Osprey to increase suitable nesting sites within Apache Louisiana Minerals owned land located in Terrebonne Parish, Louisiana. BTNEP and Apache are partnering together to monitor the nest platforms to determine usage and productivity throughout the breeding season. The main goals of this project are to construct and install suitable nesting platforms for Osprey to successfully raise their young and to increase awareness and stewardship of the species and the habitats they depend on to complete their life cycle. BTNEP hopes to use this experiment as a model for future projects.

**4. Prothonotary Warbler Surveys *(Possible Activity - Funding Dependent)***

*Funding Source: TBD*

The main goals of establishing a Prothonotary Warbler conservation and monitoring program within the Barataria-Terrebonne National Estuary Program (BTNEP) are to promote the conservation and education of the species, increase productivity of the species by establishing nest box trails, collect demographic data, identify factors that limit population growth, identify connectivity between breeding and wintering grounds and engage the public in helping with conservation efforts. Beginning in the spring of 2016, BTNEP initiated the project with a workshop dedicated to educating a local Boy Scout troop about the species and with the activity to construct a Prothonotary Warbler nest box to promote stewardship and bird conservation. The nest boxes were installed along the nature trail in Brownell Memorial Park, Morgan City, Louisiana. The nest box trail allows for outreach and educational opportunities, as it provides visitors the chance to view and learn about the species first hand. The nests and adults are monitored during the entire breeding season and data is collected to determine productivity, nest site fidelity and migratory connectivity with the use of geolocators.

**5. Red Knot Surveys *(Possible Activity - Funding Dependent)***

*Funding partner: TBD and BTNEP*

Our objectives are to gather additional migration data on red knots in Louisiana, in coordination with similar efforts in Texas, in order to provide information needed to development recovery criteria and conservation strategies for the northwestern Gulf of Mexico region. Specifically, the goal is to apply approximately 25 geolocators and individually marked leg bands to at least 25 red knots during the 2016 fall migration season. The study area will likely include coastal shorelines along Grand Isle, Elmer's Island, and the Caminada headland in Jefferson and Lafourche Parishes where beach access does not require travel by boat. With data that result from this banding effort, the Service will obtain better information to inform development of recovery plan criteria and the species conservation strategy for the northwestern Gulf of Mexico.

**6. Plant Materials Center/Farm Operations**

*Funding Source: Barataria-Terrebonne Estuary Foundation (BTEF)and its donors*

The primary goals of work at the farm are:

* to grow out Louisiana native plants for ridge and marsh restoration. Seeds of native plants known to grow on cheniers and marshes are collected, geminated, and gown out to plantable size;
* prepare both woody and herbaceous plants to be planted across the sites according to needs of each project and/or BTNEP scientific study parameters;
* to provide multiple volunteer activities related to ridge/marsh restoration that are held annually;
* the creation of scientific and public documents that describe the joint ridge and marsh restoration project(s) Create infomation for a comparison report that explains the difference between the areas based on soil types and plant success. Topics will include: seed collection information, soil sample information, growth data to include percent survivability of plants.

**7. Implementation Of Biological Control Of Air Potato Vine Along The Barataria-Terrebonne National Estuary**

Funding Source: *Barataria-Terrebonne Estuary Foundation (BTEF)and its donors*

The goal of this project is to measure the impact of *Lilioceris cheni* (Coleoptera: Chrysomelidae), a beetle which is a biological control agent of air potato in Louisiana. The specific objectives are to 1) increase release efforts and monitor the impacts of the beetle, *L. cheni*, in the BTES, 2) determine the overwintering survival of *L. Cheni* pertaining establishment, and 3) deliver educational materials to the public, park managers, and other stakeholders in Louisiana.

Field releases and impact studies of the air potato beetle will be conducted. Field studies will be within the estuary. The following measurements will be recorded inside a 1meter square area: percent plant coverage, percent beetle damage, presence or absence of beetle and number of bulbils.

***Ecological Management - Water Quality***

**8. Water Quality Sampling and Educational Outreach in the Barataria-Terrebonne Basins**

*Funding Source: Louisiana Department of Environmental Quality*

Bayou Folse is listed on Louisiana's 2014 Integrated Report as not supporting its designated use(s) of Primary Contact Recreation (PCR) and Fish and Wildlife Propagation (FWP). The nonpoint source-related suspected causes of impairment are fecal coliform, dissolved oxygen, nitrate/nitrite, total phosphorus. Suspected nonpoint sources of impairment include forced drainage pumping, and on-site treatment systems.

The main goal and focus of this project is to reduce nonpoint source (NPS) pollution with the objective of improving surface water quality, restoring support for Clean Water Act (CWA) designated uses, and maintaining healthy waters; thus, reducing the number of watersheds listed as impaired and preventing the listing of new watersheds on the Louisiana Water Quality Integrated Report (303(d)) list. This will be done through education and outreach to targeted audiences. BTNEP is working with DEQ on this project.

**9. Gulf of Mexico Program Home Sewage Assistance**

*Funding Source: EPA Gulf of Mexico Program through BTEF (ongoing)*

Malfunctioning home sewage systems are a serious threat to the estuary. The project will focus on the repair of home sewage systems through a cost-share incentive and education program in the Bayou Folse Watershed of the Barataria-Terrebonne Estuary System (BTES).

Funds will be used as a cost incentive (50% of cost up to $1,000) to pay for repairing or replacing malfunctioning “on site disposal systems” (OSDS) in targeted parts of the watershed. The targeted neighborhoods will be identified through an ongoing water quality sampling project being conducted by the Barataria-Terrebonne National Estuary Program (BTNEP) and the Louisiana Department of Environmental Quality (LDEQ). BTEF will go to targeted neighborhoods, sign up residents for the volunteer program, and provide education on OSDS maintenance.

**10. Gulf of Mexico Program Water Quality Improvement, Education, and Outreach in the Bayou Lafourche Watershed of BTES**

*Funding Source: EPA Gulf of Mexico Program through BTNEP*

The main goal of this project is to improve the surface drinking water quality by reducing the non-point source pollution in the watershed and along Bayou Lafourche. Bayou Lafourche is the drinking water supply for approximately 300,000 people in the region. BTNEP staff will conduct water sampling and voluntary inspections.

During voluntary inspections, homeowners will be trained on proper maintenance of their individual home sewage systems. BTNEP will distribute educational materials (project fact sheet and flyer) to the homeowners. BTNEP will provide educational resources on its website and will include pages about problems and solutions for the watershed. The website is [www.BTNEP.org](http://www.BTNEP.org). BTNEP will continue to conduct watershed and general water quality education during public events and other educational venues. BTNEP will use social media platform such as Facebook, Instagram and Twitter as well as press releases to conduct outreach.

Funds obtained from Gulf of Mexico Program will also be used for water quality monitoring and repairing individual home sewage systems (50% of cost up to $1,000) in the areas of the Bayou Lafourche watershed. As part of the cost-assistance program education will be provided to homeowners on proper OSDS maintenance.

***Public Involvement and Community Involvement, Cultural Heritage, and Education***

**11. Volunteer Program**

*Funding Source: Barataria-Terrebonne Estuary Foundation (BTEF) and its donors*

Volunteers are local and travel from around the country to work with BTNEP to learn about Louisiana's land loss, restoration efforts, and to become part of the solution. Volunteers work in a variety of activities including but not limited to native plant plantings along the coast, cleanup activities, Christmas tree projects, crab trap removals, and bird counts.

**12. Saving Marshes and Ridges Together — SMART Project**

*Funding Source: Shell Oil Company Facilitated through BTEF and LUMCON*

The goal is to enhance coastal Louisiana stakeholders' capacity and knowledge regarding ridge and marsh restoration techniques and efficacy, and promote Shell's commitment to these efforts.

Projects in this suite of activities will demonstrate that ridge and marsh restoration and protecting Lafourche and Plaquemines Parish infrastructure should be valued. Through this project BTNEP, Shell, Port Fourchon, USACE, CWPPRA, and State of Louisiana and volunteers plan to continue to build a broad coalition of stakeholders involved in coastal restoration activities and community resilience in Louisiana. The project also provides and promotes volunteer and outreach opportunities for the community to participate in coastal and habitat restoration where they live, work and play.

**13. Environmental Paddling Events in BTES – Discover the Estuary**

**(P*ossible Changes in Venue and Activities)***

*Funding Source: Barataria-Terrebonne Estuary Foundation (BTEF) and its donors and Paddlers*

The goal of this project is to highlight the BTES as a recreational, cultural, and economic resource to both visitors and residents of the bayou's reaches while also underscoring the importance of BTNEP in fostering real connections between the estuary’s human and natural resources. The Discover the Estuary event(s) could occurs in the spring and/or the fall. People would get a first-hand look at issues related to our estuary.

**14. Bayou Lafourche Cleanup**

*Funding Source: BLFWD and Barataria-Terrebonne Estuary Foundation (BTEF) and related donors*

The goal of this project is to remove marine debris from Bayou Lafourche and its banks in order to improve water quality for the drinking water source for over 300,000 residents. This is also a huge volunteer event.

**15. Marine Debris Education and Prevention Program – Informal Education**

 *Funding Source: TBD*

BTNEP hosts monthly student engagement activities so students can understand the causes or marine debris, research causes, and prepare a prevention plan. Students are currently working near Elmer’s Island.

**16. Louisiana Master Naturalists (LMN) of Greater New Orleans – Informal Education**

The goals of the program are to help naturalists: learn about the ecosystems present in Louisiana and the flora and fauna that inhabit them; become part of a network of people who are passionately interested in Louisiana's natural history, how it functions, and how to protect it; understand the interconnections among our flora and fauna and the well-being of our ecosystems, economic foundation, and cultural communities. BTNEP staff teaches the intro to biology, intro to geology, invasive species/urban ecology, and the coastal restoration classes, and hosts two field trips twice a year. Once certified, LMN participants must do the following to maintain certification: volunteer a minimum of 20 hours of approved volunteer service each year and attend at least 8 hours of approved continuing education training each year

**17. Educational Field Outings for BTNEP College Volunteers**

*Funding Source: Canoes from Bayou Community Foundation and BTEF*

BTNEP received a grant to purchase canoes to take volunteers out to learn more about the ecology of the ecosystem. BTNEP has completed a canoe guide with EPA funding and plans to use the guide as a tool to find appropriate places to take volunteers.

**18.** **Citizen Science 2.0 – Science Literacy and Engagement Program for the National Park Service –** Jean Lafitte National Historical Park and Preserve at the Thibodaux and Barataria Preserve

*Funding Source: National Park Foundation and BTEF*

The purpose of the Citizen Science 2.0 program is to connect K-12 teachers and students to their local national park unit in support of classroom learning with an emphasis on watersheds, water, and water quality. The program provides an excellent platform for education which is aligned with core science standards and implements park field experiences pertaining to water resource management.