

Big Thicket Association

Wetland Species and Ecosystem Analysis

Project Description:

The Big Thicket National Preserve (the "Preserve") is a heavily forested area in southeast Texas that spans approximately 105,684 acres. The Preserve ranges through 250 miles of waterways across seven east Texas counties (Hardin, Jefferson, Orange, Jasper, Liberty, Polk, and Tyler Counties). The Neches River forms the eastern boundary. The Preserve is one of the most biologically diverse ecosystems in the world. In 2001, the Preserve was named a "Globally Important Birding Area." In 2007 the Neches River was named in the top 10 Most Endangered Rivers by the American Rivers Association.

The last comprehensive biological survey of the Preserve was conducted in the 1930s. In 2006, the Big Thicket Association ("BTA") initiated a new inventory of all species in the Preserve through the Thicket of Diversity, All Taxa Biodiversity Inventory ("ATBI"). BTA has inventoried 1,897 species with 16,157 specimens collected and has identified 96 species new to the Preserve, 61 species new to the state, and 10 species new to science.

BTA shall use the SEP Offset Amount to inventory an additional taxonomic group, such as lichens, bryophytes, mussels, mollusks, amphibians, fish, or birds. The Project will involve collecting specimens from the Preserve as well as wetland properties in Orange and Jefferson Counties, which are in the process of being donated to the Preserve. Currently, a Memorandum of Understanding regarding the impending donation is in place that will allow inventory of these properties. These properties have never been inventoried and need data for resource management.

The acquisition of data conducted through comprehensive biological inventories in the Preserve wetlands provides a quantitative tool to assess current and future status of living species, water quality, and the integrity of floodplains in the area. Pollution in and along waterways can contribute to dead zones and excessive aquatic growth. Protected areas such as the Preserve were created to conserve wild biodiversity. These areas have now been impacted by invasive species, such as the Chinese tallow tree and the water hyacinth, that are gradually changing the natural biodiversity to the detriment of native plants and plant assemblages as well as animals that depend on native plants for shelter and food.

The research of Taxonomic Working Groups ("TWiGs") and Citizen Scientist volunteers will be catalogued into the Discover Life in America database as part of the National Park Service Biodiversity Discovery Initiative. TWiGs will consist of a researcher ("TWiG Leader") and a research team of students and volunteers. SEP Funds will be used for TWiG research on a specific taxonomic group that is known for being a pollution indicator or a threatened native species.

BTA shall put out a Request for Proposals ("RFP") to researchers. The RFPs will request proposals on taxonomic groups to be inventoried. BTA will choose a response to the RFP based on the priority of the proposed taxonomic group as a

pollution indicator species or status as a threatened native species. The researcher whose proposal is chosen will be hired by BTA, using SEP Funds, as a contractor to act as the TWiG Leader.

The SEP Offset Amount will be used for collection of specimens and the input of inventory data according to scientific standards into a database available for TCEQ and public review. The TWiG Leader will be a contractor who will supervise collection, inventory, lab analysis, and data entry. Citizen Scientist volunteers (students, public members of BTA, community volunteers, and Park Service employees), will be recruited to participate in inventory collections. Approximately ten team members will spend eighteen days in the field collecting specimens for the taxonomic group. The TWiG Leader and students will then spend approximately 500 hours in the lab analyzing and identifying species.

The new data resulting from the Project will aid resource managers in protecting critical resources. Information will benefit the local environment and have national outreach with inclusion in the National Park Service database. The newly acquired wetlands in Orange and Jefferson Counties will especially benefit as no data has been collected on them to date. This new research will provide a new baseline and comparative data that can assist in invasive species analysis, assessment of pollution, and resource management efforts.

Environmental Benefit:

This Project will benefit the environment by identifying the biodiversity, both native and exotic, in wetland wildlife corridors to assist in stewardship and sustainability. It will also assess the state of pollution indicator species to determine the impact of pollution on the Preserve. Additionally, inventories will identify areas where invasive species are present and aid in the analysis of harmful invasive species spreads and their impacts so that areas for removal can be identified.

Eligible Areas and Counties for Contributions:

This project may receive contributions from the following:

Hardin, Jefferson, Orange, Jasper, Liberty, Polk, and Tyler Counties

Minimum Contribution Amount:

\$1,000