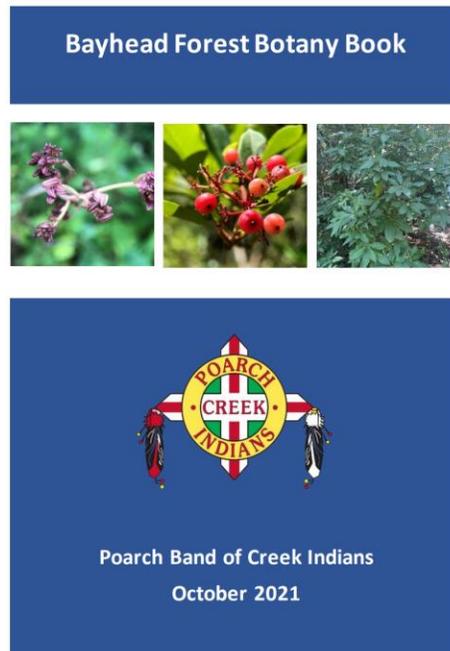


Poarch Band of Creek Indians Wetlands Pilot Project



The Poarch Band of Creek Indians (PBCI) Tribal land is located between the Perdido Creek and Escambia Creek watersheds in the southern part of what is known today as the state of Alabama. Within Tribal lands, emergent and forested wetlands are a major component of the landscape and historic cultural practices of Tribal citizens. There are a variety of wetland ecosystems present on Tribal land, some of which include bottomland forests, Bay head swamps, and pitcher plant bogs. Preservation of these wetland ecosystems through a monitoring and assessment program was identified by PBCI environmental staff members as a priority and was written into the PBCI Wetland Program Plan (WPP) in 2019 to preserve cultural practices, medicinal plants, water quality, and flood prevention attributes that these ecosystems support.

The wetlands monitoring and assessment project was jumpstarted through a pilot partnership between PBCI and United South and Eastern Tribes (USET) staff in May of 2020. The project started by identifying PBCI departmental goals of completing a Wetland Rapid Assessment Procedure (WRAP) and Floristic Quality Index (FQI) Assessment for five selected wetlands representing the variance of ecosystems on Tribal Land, and creating a wetland specific plant identification booklet that could be used by Tribal Citizens and Tribal staff in future wetland vegetative assessments and plant identification. Wetlands sites in pristine condition were selected by PBCI staff to attain reference data and baseline statistics that could be used for comparisons in future wetland assessment and restoration projects on Tribal Land.

The partnership resulted in comprehensive trainings with subject matter experts for PBCI and USET staff to complete level one landscape assessments and up to date Geographic Information Systems (GIS) maps for each wetland site, complete field data collection using WRAP and FQI forms to evaluate and score the health of each habitat, and complete a categorized plant identification booklet for field data collection for the first selected habitat site. The results from this pilot project and details on each step of the process have been included below:

How Did They Do It?

1. A wetlands pilot program partnership was established between PBCI and USET environmental staff members to begin a monitoring and assessment project in accordance with the PBCI WPP objectives

- Program objectives were identified, wetland sites were selected for mapping, regional rapid assessment and floristic quality assessment data forms identified, and data needs and uses identified through virtual meetings
- Two Request for Quotes (RFQ) sent out by USET staff to contract with region specific Subject Matter Experts (SME) to be selected by project staff. One SME to assist with WRAP and FQI training and one SME to assist with compiling a wetland regional plant identification booklet to be used by staff during WRAP assessments and plant identification projects in the field
- Virtual training methods were selected by PBCI and USET staff to monitor and track trends in overall wetland health and function

2. Mapping of all sites for landscape level assessment completed in GIS prior to field verification of selected wetland sites

- Project site locations identified on Tribal Land using Google Earth, and imported to ArcGIS along with hydric soil data layers from the NRCS Soil Survey (SSURGO) Database, National Wetland Inventory (NWI) information for the selected area, USDA (United States Department of Agriculture) soil typing data, Potential Wetland Areas from the Compound Topographic Index (CTI) mapping layers from EPA's EnviroAtlas, Tribal boundaries, and USGS topographic mapping for each assessment area
- Mapping data reviewed by a Tribal wetland specialist working for separate Tribal wetland department with experience in this process, as well as USET staff and subject matter experts
- All preparatory documents and supplies attained for project

How Did They Do It?

3. Training and WRAP and FQI data collection completed by PBCI and USET staff

- Technical process for WRAP and FQI methods confirmed to include six measurable variables to be assessed and scored independently using the WRAP used in the south Alabama region by the U.S. Army Corps of Engineers and the Alabama Dept. of Environmental Management
- Virtual site assessments and level one landscape assessments reviewed using all collected mapping data that was compiled into GIS prior to fieldwork
- The WRAP and FQI data collection exercises were taught by a SME to project staff members. These training sessions actualized with 1:1 training and coursework to complete site evaluations through aerial mapping and field assessments to independently score variables such as wildlife utilization, wetland overstory/shrub canopy, wetland vegetative ground cover, adjacent upland support/wetland buffer, field indicators of wetland hydrology, and water quality input and treatment systems, which were calculated into overall WRAP scores for each of the five selected wetland sites
- Standard Operating Procedure (SOP) for project reviewed with contractor assistance to be used for mapping and rapid assessment. All measurable variables, field methods, and procedures for data sheets followed during virtual and field work by PBCI staff
- These training sessions produced a completed WRAP and FQI data form for each selected wetland pilot sites on PBCI Tribal Land, resulting in an overall functional score and impairment status of each site that can be used to measure the health of the following wetland habitats on Tribal Land: Steephead White Cedar Woodland, East Gulf Coastal Plain Hardwood Seepage Forest, Bayhead Forest, Pitcher-plant bog, and Lily-pad Pond habitats
- Ground truthing in the field through WRAP to assess and confirm estimated quality and boundaries of selected sites was completed. Each completed WRAP and FQI assessment reviewed by Tribal staff, USET, and SME during weekly virtual meetings

How Did They Do It?

4. First wetland-specific plant identification booklet created by PBCI, SME, and USET staff for the mapped wetland site to be used by Tribal citizens and Tribal staff in future wetland vegetative assessments and plant identification

- One component of the WRAP and functionality test is understanding the quality and overall functional score of wetland plant species present at each site. To document and identify wetland species as a part of this functional assessment, the fourth component of this project was to develop a wetland-specific plant identification booklet to be used during future WRAP, FQI, and plant identification field work
- This booklet was designed through a collaborative process by Tribal staff, USET staff, and a second hired certified botanist SME with 35 years of experience in wetland plant identification and botanical studies in the region. The SME was selected by Tribal staff with a history of working with PBCI on wetland related projects at the Magnolia Wildlife Branch Preserve and an established working relationship with the department
- A five step workplan was outlined to teach technical skills of the plant identification and booklet design process for Tribal staff to be able to complete future plant ID booklets independently in the future. The steps included (1) work remotely as a team to identify plants identified in the field, as well as their key diagnostic features and flowering and fruiting phenology; (2) answer questions related to vegetation from field assessments; (3) assist project staff in the development of a categorized alphabetical plant list for each plant community within selected wetland type; (4) teach an SOP to allow project staff to produce similar results as the SME in conducting future plant ID projects; (5) and provide remote consultation over Zoom for any field questions during the process
- This project was actualized with Tribal staff taking photos of plants in the field using a macro camera lens and reviewing plant photos with SME and USET staff during weekly virtual meetings. Each meeting concluded with a review of the field data collected, approval that the data was accurate, conclusions about vegetative site assessments, and an SOP on how to design and use the booklets for accurate identification. Plant specimens that could not be identified were also collected and mailed as samples to SME for review
- The booklet, about 80 pages worth of content, was then printed on waterproof paper with dividers to categorize species of trees, shrubs, herbs, ferns, and grass like plants. Booklet content includes the common name, scientific name, Creek/Muscogee name, key plant diagnostic features, flowering and fruiting phenology, and photographs to identify each plant species. The booklet is now located in the PBCI environmental department in a durable three ring binder that can be taken into the field and used for plant identification by Tribal citizens and Tribal staff

How Did They Do It?

The results from all WRAP data forms, FQI, and Plant Identification Booklet were completed and are now available for future wetland monitoring projects and can be accessed by Tribal Citizens and Tribal staff upon request through the PBCI Environmental Department office.