

**ECOSYSTEM RESTORATION REPORT
AND
INTEGRATED ENVIRONMENTAL ASSESSMENT
FOR
BIG CYPRESS BAYOU
FISH AND WILDLIFE HABITAT RESTORATION
JEFFERSON, TEXAS**

January 2000

Prepared by

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in Cooperation with the

**CITY OF JEFFERSON, TEXAS
and the
CYPRESS VALLEY ALLIANCE**

SYLLABUS

This Ecosystem Restoration Report presents the results of a study conducted under the authority of Section 1135 of the Water Resources Development Act of 1986, as amended (33 USC 2201). The purpose of this study was to identify the ecosystem degradation caused by the construction and operation of Lake O' the Pines and subsequent development activities, evaluate measures to restore important ecosystem resources, and recommend an ecosystem restoration project, if one could be identified which meets the applicable project criteria. At the request from the city of Jefferson, Texas, the Fort Worth District, United States Army Corps of Engineers, completed this study.

The city of Jefferson is located in Marion County in northeast Texas, approximately 14 miles downstream of Lake O' the Pines. The study area is located along Big Cypress Bayou within the Jefferson city limits. Prior to the impoundment of Lake O' the Pines, Big Cypress Bayou had significantly more areas of wetlands, and bottomland and upland forests. Operation of the project has reduced the magnitude of flooding, which has directly degraded habitat, but also resulted in increased agricultural practices and other land use changes, further degrading the values of wetland and forested habitat. The construction of Lake O' the Pines also degraded the value of aquatic habitat by altering the flow regime of Big Cypress Bayou and serving as an impediment to the movement of fish and other aquatic organisms upstream of the reservoir's dam.

The study area was investigated and found to be suitable for ecosystem restoration, particularly fish and wildlife habitat restoration. The objective of the recommended plan is to restore bottomland habitat values by utilizing forest management practices including selective thinning and planting of hard and soft mast producing tree species. Further, permanent backwater wetlands will restore waterfowl nesting, rearing and wintering habitat, and reestablish bald cypress and bald cypress/water tupelo vegetative communities. The restoration of an early successional vegetative component, an emergent wetland, and a contiguous riparian corridor will benefit the free migration of avian and wildlife species throughout proposed project area, and restore habitat for neotropical migratory birds and bats. Lastly, gravel bars will be used to restore aquatic habitat for spawning of paddlefish and other fish and aquatic organisms. The recommended plan will benefit resident species of wildlife such as squirrels, rabbits, deer, raccoon, various reptiles and amphibians.

The recommended plan consists of restoration of approximately 30 acres of bottomland hardwood forests, 2.9 acres of bottomland hardwood wetlands, 5 acres of urban wildscape including bat roosting and nursery habitat, 0.25 acres of emergent wetland, and 1.84 acres of instream spawning habitat for paddlefish and other aquatic species. The total project cost is estimated to be \$1,898,887. This total project cost results in an average annualized cost, including operations and maintenance costs, of approximately \$136,900. Implementation of the recommended plan would increase the average annualized habitat units by 17,925.07 habitat units over the without project ("no action") alternative at an average annualized cost of \$5.65 per habitat unit gained.

Implementation of the project will be cost-shared between the Federal Government and the non-Federal partner; each party will be responsible for \$1,371,560 and \$527,327, respectively. The city of Jefferson has stated their support for the recommended plan and intend to act as the non-Federal partner during project implementation. Jefferson will also be responsible for all operation, maintenance, replacement, and repair costs. Both Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service are also supportive of the recommended plan.

An Environmental Assessment (EA) was integrated into this Ecosystem Restoration Report (ERR) to assess the possible impacts that could occur if the recommended plan were implemented. Items marked with an asterisk (*), both in the index and throughout the body of the ERR, indicate information required to fulfill National Environmental Policy Act requirements. A Finding of No Significant Impact, if appropriate, will be issued after reviewing comments on the EA.

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