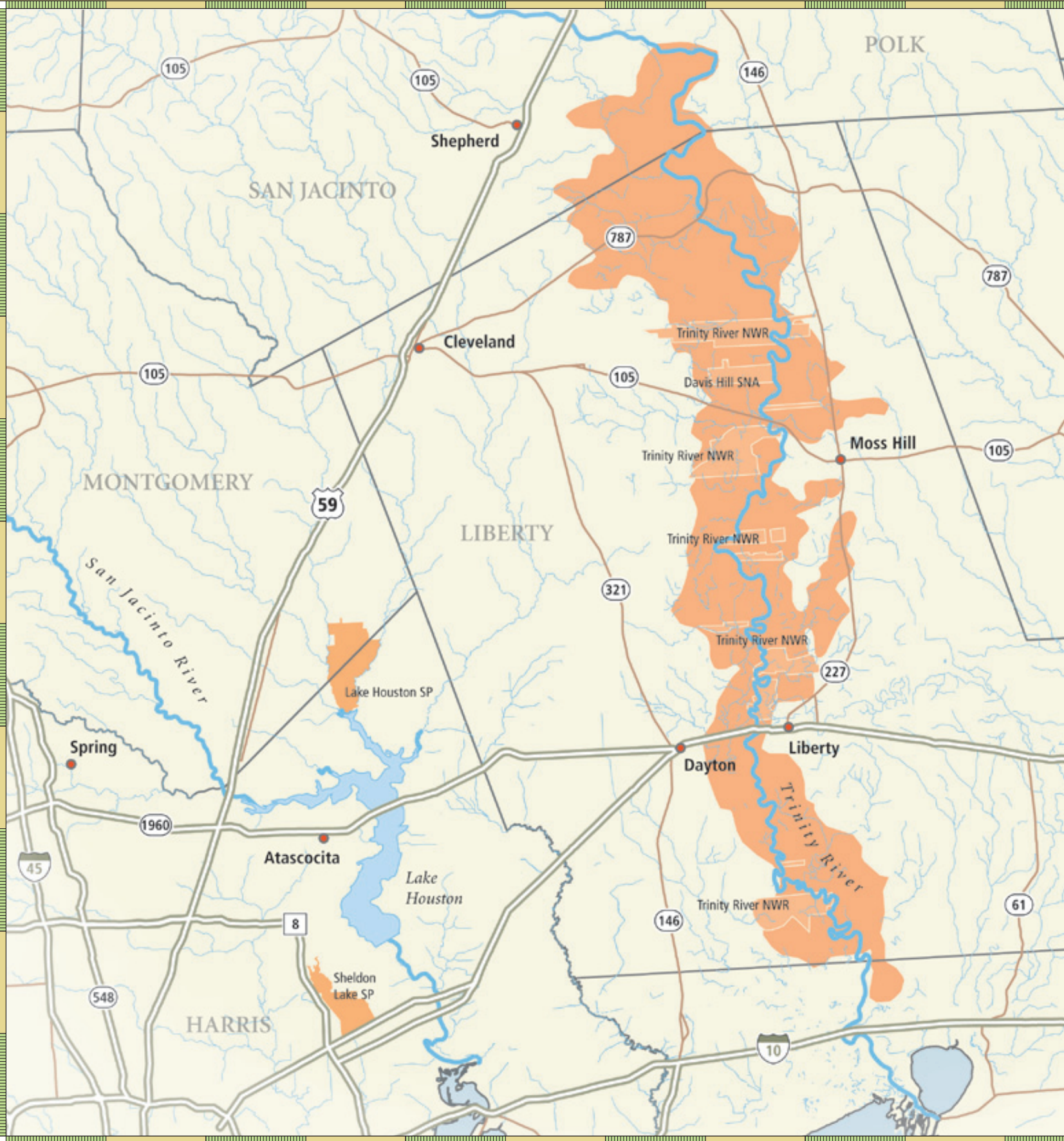
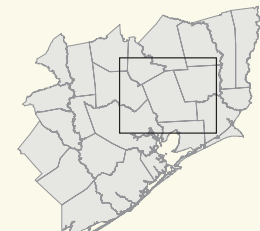


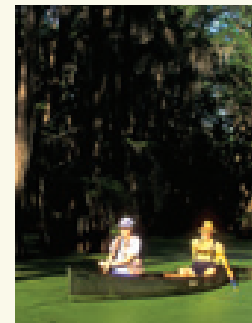
Trinity Bottomlands





BERNARDO DE MIRANDA Y FLORES, a lieutenant governor of Texas in the Spanish colonial government, was a surveyor and careful observer who explored significant portions of Texas. His reports were widely used for both their geographic information and description of Indian tribes. In 1756 Governor Barrios dispatched multiple parties to the mouth of the Río Trinidad. The report by

Bernardo de Miranda was enthusiastic: “I went forty leagues along the San Jacinto and Trinidad. . . . [We saw] many plains and superior lands for planting, many woods, thick and straight, of juniper, cedar, oak, and walnut, and pines, which encircle all the plains. . . . The land possesses luxuriant and wonderful foliage resembling straw grass. . . . All the lands are superior and are equal in watered pastures and woods to any that I have seen and remember.”

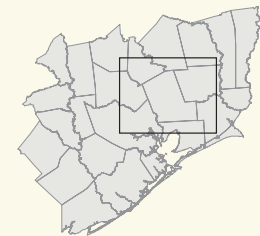


Recreational opportunities such as canoeing can be enjoyed in the Trinity Bottomlands’ many miles of creeks, rivers and sloughs.

The Trinity River had been named by the earlier governor Alonso de León on a 1690 expedition; now Barrios sought information on French activities on the lower Trinity. The French explorer La Salle had met his death in 1687 near what he termed the “River of Canoes,” probably the same river. French efforts to establish a presence in southeast Texas and on the Trinity had persisted until the time that Louisiana passed into Spanish hands.



Species found in the Trinity Bottomlands include, from top left to right: Red-winged Blackbird chicks, Agelaius phoeniceus; American alligator, Alligator mississippiensis; and the Yellow-crowned night heron, Nyctanassa violacea. Bottom left: Bald Cypress trees, Taxodium distichum, are common along waterways throughout the Trinity Bottomlands ecoregion.



Of course the history of the Trinity begins well before European colonial activities. The Europeans found small bands of Indians inhabiting the area of the lower Trinity. The Akokisa (or Orcoquisac) lived mostly to the west of the river while the Atakapa lived mostly to the east. Ultimately the Spanish-French tensions and the presence of native inhabitants led the Spanish to establish the first significant European presence on the lower Trinity in 1756 in the form of the presidio San Agustín de Ahumada and the Mission Nuestra Señora de la Luz near the present-day community of Anahuac. Though the presidio and mission were abandoned in 1771, a later settlement that would become the town of Anahuac would provide a stage for important events in the 1800s in rebellions against Spanish colonial rule (1812–13) and in the Texas Revolution (1830s).

Indeed, the Trinity River has played a key historical role in the region, and from a modern perspective its economic and environmental roles are just as important. The Trinity supplies much of the water that makes Houston a viable city. Seventy percent of the water in Lake Livingston—a reservoir of 1,750,000 acre-feet that straddles Polk and San Jacinto counties—belongs to the City of Houston. More than twenty reservoirs have been built on the Trinity and its tributaries. It is hard to imagine Texas without the Trinity. It plays such a critical role in the state’s economy. However, it is the natural qualities of the lower Trinity Bottomlands that are especially notable from an ecological perspective.

In 1840, Frances Moore Jr. offered a description of the Trinity before any reservoirs were constructed: “It is generally about eighty yards wide and eight to ten feet deep with a rapid current; at its mouth there is a broad sand bar, which is the only obstruction to its navigation. It often overflows the country, to the distance of three miles

on each side. . . Post oak, white oak, red oak, cedar, cypress, and pine, abound in the middle and northern parts.”

The frequent flooding (which was more extensive prior to the construction of reservoirs) has left a tremendous mark on the country surrounding the river. The floodwaters hydrate surrounding soils and deliver critical nutrients, which support the wealth of plants, animals and landscapes described by the early explorers. Some of the remarkable features they encountered in the bottomlands are still in existence, particularly in the less disturbed areas.

Bottomlands are typically defined as low-lying alluvial lands near a river, generally featuring a forest adapted to wet soils and nutrient-rich sediments that come from flooding events. The Trinity Bottomlands run from southern San Jacinto County to northern Chambers County, with the heart of the bottomlands in Liberty County, largely south of State Highway 787, east of SH 321 and west of SH 146. The southern end runs about ten miles south of U.S. Highway 90, depending upon how one delineates where the bottomlands end and the coastal sloughs, swamps and marshes begin.

Because of the biological significance of the Trinity Bottomlands, about 105,000 acres of this area were selected in 1999 as important habitats for inclusion in the Trinity National Wildlife Refuge. Within this area, about 79,600 acres have been identified for federal acquisition from willing sellers and about 20,000 acres have been acquired.

Species counts extend to nearly six hundred and fifty plants, two hundred and seventy-five birds, fifty fish, twenty-five mammals (including beaver, otter, bobcats, gray fox, red fox, white-tailed deer and numerous bat species), and twenty-five reptiles (including alligators) and amphibians known to inhabit the areas selected

From left to right: The American alligator, *Alligator mississippiensis*, and the Gray squirrel, *Sciurus carolinensis* are species found in the Trinity Bottomlands year round; whereas the migratory Prothonotary warbler, *Protonotaria citrea* nests in the spring and summer.



for protection. Sixty-six butterfly species have been documented. Several endangered species make use of the refuge, including brown pelicans, bald eagles and the arctic peregrine falcon.

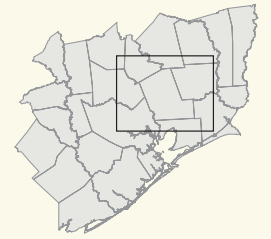
The refuge also offers shelter to numerous migratory birds, with huge numbers of neotropicals arriving during the spring migration. Well-known and colorful passerines, or songbirds, such as the vermilion flycatcher, summer tanager, indigo and painted buntings, and goldfinch can be seen along the river and in the interior forests. Numerous lesser-known varieties of warblers, vireos, wrens and sparrows including some fairly rare species, such as Henslow's sparrow and sedge wrens, also make use of the refuge. Larger colonial nesting water birds can be seen in rooker-

ies along the Trinity, such as anhingas, roseate spoonbills and cormorants. Unverified reports of sightings of the ivory-billed woodpecker lingered on in Texas until the 1960s; the refuge's Gaylor Lake was the site of the last irrefutable Texas encounter with the woodpecker in 1904.

Five tracts of the Trinity River National Wildlife Refuge offer excellent birdwatching opportunities, with the Champion Lake Public Use Area having the most variety. Depending on the time of year, this 800-acre cypress-studded lake and the adjacent 2,300 acres of bottomland hardwood forest may yield at least a dozen species of waterfowl, plus bald eagle, swallow-tailed kite, osprey, wood stork, painted bunting, vermilion flycatcher, bluebird and numerous warbler species, including the

Great blue herons, *Ardea herodias*, are the largest herons in North America and always live near sources of water.





prothonotary warbler. Depending on water levels, one can go birding along a short levee trail or by using a small boat. Other tracts good for birding are the Butler, Brierwood, Page and McGuire tracts (directions are available from the refuge office in Liberty or on the refuge website.)

The same five tracts have good observation opportunities for other wildlife, and the Champion Lake Public Use Area again offers the most variety—nearly two dozen species of reptiles, including turtles, the venomous water moccasin or cottonmouth, various other snakes and of course alligators. Amphibians include many frogs, most of which visitors hear and rarely see. Mammals include white-tailed deer, coyotes, raccoons and an occasional bobcat. A butterfly and hummingbird

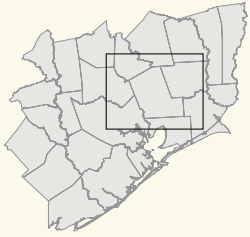
garden with a short trail is located at the top of the hill just before the pier. Wildlife can be seen from the short levee trail or a small boat.

Three tracts are prime for fishing. Champion Lake has a hundred-and-fifty-foot fishing pier, or one can fish from a boat or along a 3,000-foot levee. Fishing the McGuire tract requires a quarter-mile walk to a two-acre pond and adjacent bayou. The Brierwood tract allows access to Gaylor Lake and the Davis Bayou bank line less than fifty yards from the parking area. Bass, crappie or catfish are frequently caught at each of these areas.

The refuge has about ten miles of primitive trails scattered over five tracts. Since the refuge is primarily bottomland hardwood forest, most of it floods or has standing water at various times



An aerial view shows the Trinity River at flood stage emptying into Trinity Bay. Freshwater inflow is critical to the health of estuaries and bays.



A Roseate spoonbill family, Ajaia ajaja, nesting in a black willow, Salix nigra, near Alligator Bayou in Jefferson County.

Invasive exotic species

Invasive exotic species pose a particular threat to the Trinity River National Wildlife Refuge. Introduced to the United States in the 1700s from China for use as an ornamental tree, the highly aggressive Chinese tallow can irretrievably damage native habitat within a few years and must be controlled. Giant salvinia, an exotic water fern originating in the Neotropics, grows rapidly with the potential to double its biomass within a week. The fern floats on top of the water in dense mats, preventing light and atmospheric oxygen from entering the water, disrupting the ecological functions of native species. Found in Champion Lake in 2000, it could choke out the entire 800-acre lake in a matter of months if not kept in check. As development approaches the refuge, care must be taken to protect it from additional exotics. Using native plant species even in developed areas both protects the refuge and offers homeowners tough, well-adapted, cost-effective plants.

during the year. Except for some mowing, blading and removal of fallen trees, little can be done to improve these dirt trails. Be prepared to get your shoes muddy during wet times. Some trails are loops, while others are straight in and out. Most trails are not marked, but maps are available.

Some special ecological jewels of the lower Trinity lie outside the tracts already mentioned. The Caper's Ridge area has all bottomland forest types, marshes, oxbow lakes and shallow bayous, and as its name suggests, it also has a unique geologic feature called a ridge, where the drier habitat is in stark contrast to the bottomland features. Similarly, the Wirt-Davis area has bottomland features but also offers remnant canebrakes and multiple pine ridges. The Wirt-Davis area is distinguished in having some of the highest-quality habitat anywhere in the refuge for wintering waterfowl and interior forest birds. The Demijohn Lake area, which includes Champion Lake, offers a large cypress-tupelo swamp and a naturally occurring high bluff that impounds water for long periods. Because of the very high quality of habitat in the area, it is rated the best section of the refuge from a biological standpoint.

Boating at the Champion Lake Public Use Area is restricted to boats with motors of only 10 horsepower or less or a trolling motor in order to

maintain quiet conditions for wildlife and visitors. Canoes and kayaks, though, are always welcomed. Additional boating areas are planned as more land is added to the refuge and as funding permits.

The ecological assets and recreational opportunities at the refuge are tremendous and there is ample opportunity to expand the now primitive facilities. Trails are very rewarding but not as well marked as in some parks, and Champion Lake offers the only restroom-type facilities. Adjacent to the refuge on the west, just south of FM 2252, sits the 1,800-acre Davis Hill State Natural Area, which is remarkable for its geologic features, but remains closed to the public due to a lack of funding to develop and operate the park.

With development approaching the area, the Trinity National Wildlife Refuge should move along quickly with planned land acquisition to maintain its enormous diversity and recreational potential. For the moment the Trinity River—the longest river having its entire course in Texas—probably has more bottomland forests than any river in the state, with an estimated 300,000 acres remaining. Thanks to the conservation efforts of the U.S. Fish and Wildlife Service and its many partners, Bernardo de Miranda would surely recognize at least portions of the splendor he recorded two hundred and fifty years ago.

