
THE NORTHEAST TEXAS CONSERVATION DELIVERY NETWORK SERVICE AREA AND STRATEGIC PLAN

Overview

The Northeast Texas Conservation Delivery Network (NETX CDN) has been organized in an effort to more strategically meet the wildlife and landscape restoration and management needs identified by numerous conservation organizations working in the Service Area (see map below). A strategic plan is the guiding document that will be utilized to guide these efforts. This Strategic Plan provides a 5-year vision for the NETX CDN. It defines the goals and objectives the NETX CDN will strive to achieve through the implementation of restoration and enhancement projects on public and private lands within in the Service Area. The NETX CDN Service Area encompasses all or parts of 27 counties including Anderson, Bowie, Camp, Cass, Cherokee, Delta, Fannin, Franklin, Gregg, Harrison, Henderson, Houston, Hopkins, Lamar, Marion, Morris, Nacogdoches, Panola, Rains, Red River, Rusk, Shelby, Smith, Titus, Upshur, Van Zandt, and Wood Counties. It includes parts of the Angelina, Cypress, Neches, Sabine, Sulphur, Trinity, and Red River Drainages.



In order to facilitate partner collaboration and set direction for the NETX CDN, its member participants first recognize the need to develop an effective approach to

identify and prioritize conservation focus areas, actions and site-specific projects in the Service Area. The cornerstone of the NETX CDN is communication and collaboration through a networking partnership with a shared interest and responsibility for wildlife and resource management within the Service Area.

NETX CDN

Introduction

The NETX CDN is within the West Gulf Coastal Plain (WGCP) and includes portions of the Blackland Prairie, Post Oak Savannah, and Piney Woods ecoregions. The Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative and the Lower Mississippi Valley Joint Venture (LMVJV) work within the WGCP. The upland pine and bottomland hardwoods forests, to name only two habitat-types in the Service Area, are globally important for migratory and resident birds, various other important wildlife species, and a host of rare or declining plants. In addition to certain edaphic conditions, the primary ecological processes that once maintained the Service Area included a variety of disturbances such as fire.

Landownership

Rural landownership is predominantly private and privately-owned non-commercial tracts small (less than 100 acres). Many of these small tracts are owned by absentee landowners and are therefore difficult to maintain. Unfortunately, when sold or inherited they are likely to be further subdivided, which can be anticipated to negatively affect wildlife and their habitat.

Several large tracts of federal and State land are scattered throughout the NETX CDN Service Area, including Department of Defense installations, Angelina, Davy Crocket, Sabine National Forests Caddo National Grasslands (U.S. Forest Service), Caddo Lake National Wildlife Refuge (NWR), Neches River NWR, Little Sandy NWR, the I.D. Fairchild State Forest, and a plethora of U.S. Army Corps of Engineers lakes and associated habitats. Texas Parks and Wildlife Department (TPWD) has seven state managed Wildlife Management Areas (WMA) in the service area – Cooper, Tawakoni, Pat Mayse, White Oak Creek, Caddo Lake, North Toledo Bend, and Alazan Bayou.

Ecosystems/Vegetation

The forests of northeast Texas are typically mixed deciduous and conifer forests dominated by trees such as loblolly pine, shortleaf pine, sweetgum, southern red oak, white oak, flowering dogwood, and post oak. American beautyberry, yaupon holly, greenbriers, and hawthorns are common species found in the woody understory. The herbaceous components in these areas include various grasses such as beaked Panicum, low-growing Panicums, longleaf Uniola, spike Uniola, and perennial forbs. The upland pine and bottomland hardwood forests contain

elements of seven natural communities: grasslands and prairies, dry shortleaf pine/oak-hickory woodlands; dry-mesic mixed pine-hardwood forests; mesic slopes and terraces; large river floodplain terrestrial systems; large river floodplain wetland systems; and, small stream aquatic systems.

Grasslands and Prairies: The prairies, much of which are now under cultivation, historically supported a mixture of mid and tall grasses. Little bluestem was commonly the dominant species with indiagrass, big bluestem, switchgrass, tall dropseed, silver bluestem, sideoats grama, eastern gamagrass, and vine mesquite being major herbaceous species. This plant community contained many forbs such as prairie clover, western ragweed, Maximilian sunflower, gayfeather, rattlesnake master, and indian plantain. Frequent fire and managed grazing can help to control invasive species and maintain heterogeneity of these systems.

Dry Shortleaf Pine / Oak- Hickory Woodlands: This system occurs on middle and upper slopes, broad uplands and ridgetops. Soils consist of a deep, moderately drained to excessively drained loamy sand surface layer over a sandy loam or sandy clay loam subsoil. Extended drought periods occur during the growing season. The overstory is dominated by shortleaf pine. Embedded within woodlands are small patch communities such as hillside herbaceous seepage bogs, baygalls, patch prairies, barrens and oak-hickory hammocks. Frequent, low-intensity surface fires once burned through these uplands during the growing season, with the fire interval on a particular site influenced by topographic isolation and soil moisture. The frequent fire regime inhibits establishment of woody understory species and maintains an open woodland community structure. Savannahs commonly consist of hardwoods such as post oak, blackjack oak, southern red oak, and black hickory. Native pines occur in some of the sites. Depending on the soils and hydrology, pinehill bluestem, brownseed Paspalum, purpletop, longleaf Uniola, indiagrass, beaked Panicum, and a host of other grasses and forbs grow throughout the area.

Dry-Mesic Mixed Pine-Hardwood Forests: This system is generally found on loamy and clayey uplands of the Texas and Louisiana Pineywoods Transition subregions, although it can occur throughout the ecoregion. Although landform and soil combinations are highly variable, it generally occurs on middle and upper slopes and broad uplands. Fires were once moderately frequent, allowing the development of closed canopies, and abundant understory trees and shrubs. The overstory consists of a heterogeneous mixture of pine and hardwood species. Shortleaf and loblolly are the most common pine species in the overstory. The deciduous hardwood overstory is diverse, including post oak, southern red oak, and white ash. Smaller embedded communities may include calcareous forests, patch prairies, and carbonate glades.

Mesic Slopes and Terraces: This ecological system is located on middle and lower slopes and small stream terraces throughout the Pineywoods ecoregion. Mesic slopes and terraces usually occur in transition zones between dry upper slopes and wet stream bottoms. Due to their low position on the landscape, proximity to streams, and mesic microclimate, soils tend to have high moisture retention, moderating the effects of seasonal drought. A relatively large number of natural firebreaks allowed only infrequent occurrences of low-intensity fires. The overstory contains a diverse mix of hardwoods and loblolly or shortleaf pine. Most sites with

no recent large-scale disturbances are dominated by hardwoods. Important overstory trees include American beech, white oak and southern magnolia. On sites with a mature, closed overstory canopy, understory shrubs and herbaceous groundcover may be sparse. Many understory species characteristic of the central hardwoods and Appalachian Mountain regions reaching their southwestern range limit in the WGCP.

Large River Floodplain Terrestrial Systems: This system covers about 4,000 acres along the Middle Neches River and about 2,000 acres along the Angelina River. This system excludes the large river floodplain aquatic system (with is part of the river channel itself). River floodplain terrestrial systems occur on active floodplains of large streams and rivers across the WGCP. Drainage mottles can occur throughout the soil profile. Micro-topography on some sites consists of numerous small depressions, drainage channels and mounds created as flood waters scour and deposit alluvial materials. Regular flooding occurs here, mostly in winter and spring, with flood duration influenced by the size of the watershed. Although overstory species composition is variable, deciduous hardwoods usually dominate: willow oak, water oak, laurel oak and overcup oak. Ground cover is generally sparse. Embedded plant communities include bald cypress-gum depressions, riverbank shrublands, riverbed aquatic vegetation and canebrakes.

Large River Floodplain Wetland Systems: Similar in expanse to the floodplain terrestrial system, the wetland system covers the Red, Sulphur, Sabine, Neches and Angelina Rivers. The system includes the river channel and immediately adjacent tributary streams. This system has been significantly altered by the many impoundments along both rivers. Hydrology in both river systems has been altered, contributing to changes in water temperature and chemistry and altered substrates. As a result, some species, like paddlefish and American eel, have disappeared, and others have declined.

Small Stream Aquatic Systems: This system occurs in small to intermediate-sized streams. Streams usually have a well-developed channel and a narrow floodplain. Groundwater seeps may occur along some streams, and streams with relatively clear water may support an abundance of streambed vegetation.

River Basins and Tributaries

The major river basins in this focus area are the Angelina, Neches, Red, Sulphur, Sabine, Big Cypress, and Trinity Rivers.

Opportunities and Partnerships

There are opportunities to work with private landowners in conjunction with conservation partners such as TPWD, Natural Resource Conservation Service, Texas Forestry Association Landowners Council, Native Prairies Association of Texas and

the National Wild Turkey Federation. One opportunity is through the Pasture for Upland Birds (PUB) program. PUB is a landowner incentive program to restore native grasses and forbs in non-native grass pastures and to enhance upland bird habitat in Texas. Another opportunity to work with private landowners is through a network of State and Federal private lands biologists located throughout the NETX CDN Service Area.

.West Gulf Coastal Plain of the Lower Mississippi Valley Joint Venture: The West Gulf Coastal Plain (WGCP) is the focus of a planning initiative that seeks to conserve natural communities and their resident and migratory bird populations. The goal is to ensure the long-term viability of bird populations by promoting bird conservation initiatives. This occurs by delivering the full spectrum of bird conservation through regionally based, biologically driven, landscape oriented partnerships. The WGCP Bird Conservation Region (BCR) lies almost completely within the Lower Mississippi Valley Joint Venture (LMVJV) as does the Mississippi Alluvial Valley BCR. The WGCP BCR poses new challenges and opportunities that were not present in the LMVJV BCR; the LMVJV exists presently as a non-forested landscape while the WGCP is largely forested, albeit much changed since pre-settlement. The LMVJV and WGCP have embraced the "all bird - all habitat" approach to bird conservation that is incorporated in the North American Bird Conservation Initiative (NABCI). NABCI incorporates the goals and objectives of the North American Waterfowl Management Plan (NAWMP), U. S. Shorebird Conservation Plan (USSCP), Partners In Flight (PIF), and the North American Colonial Waterbird Conservation Plan (NAWCP).

The NETX CDN will emphasize conservation of the northeastern reaches of the blackland prairie, the eastern portion of the Red River Valley, the eastern segments of the Sulphur River Basin, Cypress Valley Watershed, and the Upper Neches River

Blackland Prairie – Although the blackland prairie is one of the most severely altered of Texas' ecoregions, there remain individual sites with a high probability of restoration success. Since most of the blackland prairie is threatened by rapid population growth, urbanization, land conversion, invasive species, fragmentation and decreased land parcel size, TPWD classifies the area as a Tier I (Highest Priority) Ecoregion for Conservation Efforts.

Some areas along the Red River targeted for prairie restoration have been recognized by the Botanical Research Institute of Texas (BRIT) as a unique and vegetatively distinct physiographic area of Texas that supports numerous rare plants and plants typically found farther east. Additionally this area contains three The Nature Conservancy (TNC) Ecoregional Portfolio Sites (i.e., priority conservation areas). These portfolio sites are Caddo National Grasslands-Bois d'Arc Creek, Camp Maxey/Pat Mayse, and Woodfin/Tridens Prairie.

Red River Valley : The East Texas Black Bear Task Force Habitat Committee Working Group has identified the Red River Valley in northeast Texas as a priority area to focus efforts for the conservation, restoration, and enhancement of the

black bear. The area contains one of the largest remaining blocks of largely unbroken black bear habitat in the state.

Within this area, the TNC has established the Pecan Bayou Ecoregional Portfolio Site. The old-growth timber and cathedral-like canopy of these woods are thought to be typical of the undisturbed floodplains throughout the state prior to the arrival of settlers. This emphasis area incorporates part of the same physiographic region along the Red River that BRIT considers unique and distinct from other regions in Texas.

The Northeast Texas Prescribed Fire Initiative is being implemented in this area. This is a partnership between private landowners and local wildlife management cooperatives, governmental organizations, and non-profit organizations, encouraging private landowners to utilize prescribed fire for improving timber, grassland, and wildlife habitat and to mitigate potential wildfire losses through reduced fuel loads.

Sulphur River Basin : Similar to the Red River Valley emphasis area, the eastern segments of the Sulphur River Basin emphasis have been identified by the East Texas Black Bear Task Force Habitat Committee Working Group as a priority to focus efforts for conservation, restoration, and enhancement of black bear habitat. This area also includes large blocks of black bear habitat. Partnership opportunities exist to connect these blocks to provide travel corridors for the black bear. Additionally, the area contains two TNC Ecoregional Portfolio Sites, the Sulphur River Floodplain and White Oak Creek.

Cypress Valley Watershed: Below Lake O'the Pines, Black Cypress and Little Cypress Bayous converge with Big Cypress Bayou to form the headwaters of Caddo Lake. This area is a TNC ecoregional portfolio site. The Caddo Lake complex is located in the Cypress Basin which has been identified as a priority area by The Conservation Fund, TNC, and Caddo Lake Institute.

Upper Neches: Below Lake Palestine, the Neches River runs undammed to B.A. Steinhagen Reservoir (Dam B) at its confluence with the Angelina River, then on to the Gulf of Mexico.

Threats

The primary threat to native ecosystems within the Service Area are invasive exotic plants, land conversion and fragmentation, reservoir development, urbanization, lack of prescribed fire, stream modifications and conversion of native habitats.

Focus Areas

The member participants of the NETX CDN recognize the need to develop an effective approach to identify and prioritize conservation actions within the CDN Service Area. CDN members agree that conservation priorities should be fundamentally based on the goals and objectives set by the Lower Mississippi Valley

Joint Venture and the collective institutional priorities of CDN partner organizations in a manner that will most benefit areas that are known to be of greatest conservation priority. The conservation priorities of the CDN should be scientifically justifiable and clearly demonstrate concerted thought and planning on the part of the CDN partnership.

To develop this approach, the NETX CDN will form a Delivery Prioritization Working Group. Through assessing and evaluating available priority maps and models, this working group will identify and utilize the most spatially explicit information available to identify priority focus areas and in essence "prioritize the priorities". This methodology will allow CDN partners the opportunity to work cooperatively in areas where their organizational conservation priorities and objectives jointly overlap.

Conservation Actions

The NETX CDN will implement on-the-ground conservation delivery projects linked to conservation priorities associated with each identified CDN priority focus area. The framework for identifying these projects will include five strategic themes to guide decision making. The NETX CDN will:

1. Encourage communication and collaboration;
2. Define priority areas in which to target priority work; "prioritize the priorities";
3. Define priority actions and activities for each priority area;
4. Identify priority projects; and
5. Develop collaborative project proposals to obtain necessary funding to complete priority projects

Focal Species

High priority species in open pine habitat include the red-cockaded woodpecker, Bachman's sparrow and the brown-headed nuthatch. The Le Conte's sparrow and Henslow's sparrow winter in native grass openings in open pine habitat. Several priority species use pine forests and other upland communities including the northern bobwhite, eastern wild turkey, eastern wood-pewee, and the red-headed woodpecker. Pine savannahs are a conservation priority because of all the bird species supported in these habitats. These savannahs are continually threatened by conversion to loblolly pine plantations, the establishment of improved grass pastureland, and the lack of prescribed burning.

Bottomland hardwood forests and cypress/tupelo swamps support many priority migratory birds including the swallow-tailed kite; Swainson's, cerulean, and prothonotary warblers; white-eyed vireo; yellow-billed cuckoo; and red-headed woodpeckers. Bottomland hardwood forests also support substantial populations of several species of waterfowl.

The **Northern Bobwhite** is a permanent resident in Texas, and the most dramatic quail reductions have occurred in the eastern half of the state along and east of a line from Fort Worth to Corpus Christi. The GCJV Landbird Plan has set a population goal of 626,423 birds, requiring approximately 17,344,500 acres of suitable habitat. The Partners for Fish and Wildlife Program can contribute to achieving the northern bobwhite population target for Texas by funding cooperative and private lands agreements with private landowners and NGO partners to implement habitat management. Habitat management practices will include prescribed fire, timber management, brush management, and native grass restoration.

The **Eastern Wild Turkey** once occupied the eastern third of the state, but was all but extirpated by 1942 due to excessive timber harvest and habitat destruction. Restoration efforts have been ongoing since 1959, with the greatest efforts taking place from 1987-2003. These efforts have been minimally successful and today there is a spring turkey season in 28 East Texas counties. More recent ongoing restoration efforts by TPWD and other partners place an emphasis on large tracts of land meeting or exceeding 10,000 acres which are characterized by a forested or savannah landscape and dotted with scattered openings of herbaceous cover. The wild turkey is recognized by the OPJV and the LMVJV as a priority species. A number of conservation and resource management organizations are contributing to the recovery of this species by providing funding and technical guidance to private landowners to implement habitat management activities such as timber thinning, prescribed fire and native grass restoration.

Migratory Birds

Within the NETX CDN the bottomland hardwood forests and swamps support priority species including swallow-tailed kite, Swainson's, cerulean, and prothonotary warblers, white-eyed vireo, yellow-billed cuckoo, and red-headed woodpecker, the latter especially in the winter. These forests also support substantial populations of waterfowl species including the wood duck for both breeding and wintering populations and mallard, wintering only. One of the primary migration corridors for dabbling ducks is through eastern Texas, including the Neches River corridor. The corridor is utilized by almost three million dabbling ducks (Bellrose 1968). The principal species migrating through and to a lesser extent, wintering in east Texas, besides mallards and wood ducks, include the green-winged and blue-winged teal, northern pintail, northern shoveler, gadwall, and American wigeon. The area is of lesser importance for diving ducks and geese; ring-necked ducks and lesser scaup are the most common diving ducks in the area.

These bottomlands also are important for a number of high priority migratory and breeding shorebirds and waterbirds, including wading birds, and various marsh birds. Important species utilizing the forested wetlands of east Texas include the American white pelican, anhinga, American bittern, least bittern, little blue heron, yellow-crowned night-heron, wood stork, king rail, lesser yellowlegs, solitary sandpiper, spotted sandpiper, semipalmated sandpiper, least sandpiper, and the American woodcock.

The red-cockaded woodpecker is the highest priority species in the WGCP and occurs in open, over mature park-like pine savannahs such as the shortleaf pine savannahs that formerly occurred on most of the upland habitats. Other high priority species that nest in this habitat type include Bachman's sparrow and the brown-headed nuthatch. Le Conte's sparrow winters in this same habitat type. Several other priority species use pine forests and other upland communities including the northern bobwhite, eastern wood-pewee, and the red-headed woodpecker. Pine savannahs are a conservation priority because of all the species supported in these habitats.

Fish and Freshwater Mussels

One of the most significant threats to riverine ecosystems is fragmentation of natural habitats and alteration of the natural flow regime such as occurs when reservoirs are constructed. Because of the abundance of water resources in northeast Texas, this area has been a prime site for reservoir development and for commercial interests that require large quantities of water. In addition, the dramatic increase in human population in Texas will further increase water demands and continue to place intense pressure to build dams on rivers and large tributaries in the region. Target mussel species include the Triangle pigtoe, Louisiana pigtoe, Texas heelsplitter, Sandbank pocketbook, and the Southern Hickorynut. Focal fish species that are Threatened or Species of Concern include alligator gar, paddlefish, American eel, bluehead shiner, blackspot shiner, ironcolor shiner, Sabine shiner, silverband shiner, blue sucker, creek chubsucker, and the Western sand darter. Fisheries scientists are trying to obtain better distributional data for these species within priority conservation areas, and apply landscape-level modeling to predict occurrences outside sampled areas and predict responses to anthropogenic perturbations. Because of the voluntary agreement for instream flow releases from Lake of the Pines, the Big Cypress Bayou is a high priority for study of the effects of the prescribed releases on the aquatic community. Other priority river stretches for potential rapid bioassessment would be those that have state or federal properties on them. Life history information is incomplete and needs to be obtained for many of the focal fish and mussel species within the NETX CDN.

Other Species of Interest

The Sprague's pipit is a small grassland bird characterized by its high flight display and otherwise very secretive behavior. Currently it is designated a candidate species by the USFWS. Sprague's pipits are strongly tied to native prairie (land which has never been plowed) throughout their life cycle. Its breeding range includes portions of Minnesota, Montana, North Dakota, South Dakota, and Canada. The Sprague's pipit's wintering range includes the southern U.S. including Texas with the vast majority of the U.S. winter sightings in Texas. Threats to this species include: habitat loss and conversion, habitat fragmentation on the breeding grounds, energy development, roads, and inadequacy of existing regulatory mechanisms. Due to prairie habitat loss and fragmentation, only 15 to 18 percent of the historical breeding habitat in the United States remains in patches of

sufficient size for males to establish territories. On the wintering range, conversion of grassland to agriculture and other uses appears to be accelerating. Henslow's sparrow winters in weedy fields and cut-over forests with patches of bare ground; swallow-tailed kite is a bird of lowland forests and along rivers, lakes, and ponds and nests high in trees near forest edges; wood stork is a colonial waterbird likely to occur as a late summer migrant in bottomlands, lakes, and other wetlands; western sand darter is a fish found in clear to slightly turbid waters of medium to large rivers with sandy substrates; Rafinesque's big-eared bat roosts in cavity trees in bottomland hardwood forests and abandoned structures; southeastern Myotis bat roosts in cavity trees of bottomland hardwood forests and man-made structures; alligator snapping turtles occupy deep waters or rivers and oxbows; Texas garter snake is found primarily in wet or moist habitats; and the timber rattlesnake is found in floodplain forests and adjacent pine and deciduous woodlands.