

Upper West Gulf Coastal Plain Ecoregional Plan



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UWGCP Ecoregional Management Plan

Executive Summary

In 1996 The Nature Conservancy developed an ecoregional approach to conservation, outlined in *Conservation by Design: A Framework for Mission Success*, stating that biodiversity conservation requires working at larger scales and along ecological instead of geopolitical lines. Ecoregions, large units of land and water delineated by characteristic biotic and abiotic factors, provide a better geographic basis than states for organizing our conservation priorities and actions. Strategic planning on an ecoregional scale encourages review of many species and ecological communities at once, providing a structure for capturing genetic and ecological variability within species or communities.

The major products of an ecoregional plan include: 1) identification of a portfolio of sites that, if protected, collectively conserve the biodiversity of the ecoregion, 2) an implementation strategy to protect the sites, including strategies and conservation partners, and 3) identification of data gaps to improve the quality of future conservation decision-making and ensure ecoregional plan updates capture relevant and useful data. A critical element of the conservation portfolio sites is the data captured through the plan, which not only provides a science-based foundation for ecoregional planning but also provides a starting point for site conservation planning in the implementation phase.

The Upper West Gulf Coastal Plain (UWGCP) is an area of approximately 26,250,000 acres or 40,970 square miles, covering parts of Arkansas, Louisiana, Oklahoma, and Texas. The ecoregion extends south approximately from Little Rock, Arkansas to south of Shreveport, Louisiana, southwest to Houston and northwest to outside the Dallas/Fort Worth area. Physiographically the UWGCP is bordered by the Lower West Gulf Coastal Plain to the south, the Gulf Coast Prairies and Marshes to the southeast, the Crosstimbers and Southern Tallgrass Prairie to the West, the Ouachita Mountains to the north, and the Mississippi River Alluvial Plain to the East. The delineation between the Lower West Gulf Coastal Plain and the UWGCP is the northern limit of the natural range of longleaf pine.

Terrestrial systems in the UWGCP include both mesic bottomland and upland dry-mesic and hydric areas. Bottomlands are dominated by hardwood communities, primarily oak species, and more deeply flooded areas frequently have cypress and cypress-tupelo swamp vegetation. Upland areas have shortleaf and loblolly pines, mixed pine-hardwood communities, glades, and woodlands. Prairies occur on blackland sites, depending on fire history and soil depth. Barrens and woodlands occur on saline soil flats. Ancient volcanic intrusions form bauxite deposits that are home to globally rare and endemic nepheline syenite communities. Aquatic systems are low-slope, medium- to high-order streams and riverine systems. Streams are sheet-, surface- and groundwater fed. Slower, larger rivers that originate in other ecoregions flow through the UWGCP and are home to diverse mussel and fish communities. Rivers are the predominant aquatic system in the UWGCP, and contain a diverse assembly of mussels and fish. Substrates range from gravel, sand-gravel, to mud and silt. Natural lakes are few, and are remnants of river reaches; the most prominent is Caddo Lake on the Texas/Louisiana border. It is the remnant of a

pre-settlement “Great Raft,” an expansive natural logjam on the Red River that created a series of wetlands and lake areas that covered thousands of acres.

The UWGCP is home to 15 endemic species and 59 species with limited ranges. Six federally listed endangered species and two listed threatened species occur in the ecoregion. Many of the endemic species are crayfishes and mussels. There are 13 terrestrial community groups endemic to the ecoregion, and several endemic community associations.

Fire is the most pervasive natural terrestrial process in the UWGCP. Almost all terrestrial communities in the ecoregion benefit from seasonal burning; many plant species require burning to germinate. Fire also helps prevent invasive species from overrunning endemic natural areas. Wind action is another major natural process in the ecoregion. Tornadoes are frequent and high winds are regular occurrences. Seasonal and ephemeral flooding is similarly a common natural aquatic process for river systems in the UWGCP.

Though the UWGCP is 51% forested, most of that area is under commercial management. Additional uses include grazing and agriculture. Habitat fragmentation caused by urban growth and suburban sprawl occur throughout the region. Following the national trend, urban and suburban land uses are increasing though not as intensely as in other ecoregions (US Dept of Census, 2000).

In this iteration of the ecoregional plan, the portfolio conservation areas cover a total of 4,193,851 acres, or 16% of the ecoregion. Currently 1,697,294 acres or 40% of those portfolio conservation areas are being managed for biodiversity. Of the portfolio conservation areas that are managed for biodiversity, 1,447,496 acres or 85 % are federally owned; 234,095 acres or 14% are state or locally owned; and 15,704 acres or 1% are privately owned.

Terrestrial ecosystems in the UWGCP are stressed by habitat destruction or conversion, habitat fragmentation, and alteration of natural fire regimes. These stresses have improper forestry practices, development, conversion and agriculture, and fire suppression as their source. Aquatic systems are stressed by incompatible land use practices leading to sedimentation and runoff, and nonpoint source pollution. Fragmentation and loss most often occurs in the form of conversion. Conversion includes grazing and agriculture. Habitat alteration and incompatible land use include incompatible agricultural and commercial use as well as development. Invasive species include exotics such as lespedeza, cedars, and kudzu, and invasive fire-intolerant species in fire-suppressed landscapes.

The portfolio conservation areas depicted in this iteration of the UWGCP ecoregional plan are intended as a prioritization management tool for conservation action and resources. This plan also contains the supporting data for each portfolio conservation area, as well as an ecoregional management strategy applicable to the portfolio management areas. Portfolio management action areas are prioritized by biodiversity, threats, complementarity, and leverage. Results and data from this ecoregional planning process should be used to create working site conservation plans as part of the initial implementation phase of the plan.