Multi-Site Management Plan

For the

Upper West Gulf Coastal Plain

Final Draft

Produced for the U.S. Department of Defense
Legacy Resource Management Program
under Cooperative Agreement DACA87-00-H-0017
by The Nature Conservancy, Arkansas Field Office

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This iteration of the Upper West Gulf Coastal Plain Multi-Site Management Plan is based on TNC's UWGCP Ecoregional Plan, for June, 2002. This iteration should be considered the final draft plan, and is intended as a planning and implementation resource for DoD and natural resource management partners

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List of Appendices

UWGCP Multi-Site 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.

Also in 1996 DoD produced *Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers* in cooperation with TNC; it provided the foundation for multi-site adaptive conservation management. The Handbook recognized that managing for biodiversity contributes to military readiness and mission fulfillment in an economically efficient and legally compliant manner, as well as providing a base for public support and increasing the standard of living for military personnel.

DoD's Multi-Site Management plan provides TNC and DoD the management opportunity of plan integration, data sharing, project standardization, and consolidation of effort towards mission fulfillment. It establishes a lasting framework for the conservation and stewardship of biological diversity ecoregionally by working with DoD facilities and other Federal, state, and local partners, as well as corporate and private landowners and stakeholders.

This Multi-Site Management Plan will identify species and vegetation types of critical priority necessary to maintain biodiversity in the ecoregion and to identify specific actions, incorporate adaptive management for sustainable use, and protect or enhance viability of conservation sites within the ecoregion. Together with the ecoregional plan, the Multi-Site Management plan will advance the capacity to work with land management agencies within the ecoregion to reduce ecosystem stresses, fill data gaps, and demonstrate sustainable and adaptive natural resource management. This plan will provide a means to efficiently use conservation funds and resources regionally as well as reduce the management burden on military lands by working with other land and resource management entities.

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. Physiographcially the UWGCP is bordered by the Lower West Gulf Coast 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. DoD facilities in the UWGCP include Pine Bluff Arsenal, Naval Space Command Lewisville, AR., Camp Minden Training Site (Minden Plant), Barksdale Air Force Base, and Red River Army Depot/Lone Star Army Ammunition Plant.

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 Multi-Site Management 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.

Introduction

The mission of The Nature Conservancy is to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive (TNC, 2001). The Nature Conservancy has worked to fulfill this mission for over 50 years through land acquisition and management, creating partnerships and involving stakeholders and communities in the conservation process. As the threats to biodiversity and their corresponding immediacy increase, TNC has been growing and changing to better fulfill its mission; one key change has been the movement from opportunistic towards strategic conservation management. Strategic conservation is represented here in the ecoregional plan. *Conservation by Design* (TNC, 1996) defined the framework on which this ecoregional plan is based by planning for biodiversity at the landscape scale. Ecoregional plans are aligned with the mission of The Nature Conservancy.

Ecosystem management was recognized as a priority by DoD with the Ecosystem Management Policy Directive (Goodman, 1994), which states military installations use ecosystem management to 1) Restore and Maintain ecological associations that are of local and regional importance and compatible with existing geophysical components; 2) Restore and maintain biological diversity; 3) Restore and maintain ecological processes, structures, and functions; 4) Adapt to changing conditions; 5) Managed for viable populations, and 6) Maintain ecologically appropriate perspectives of time and space. These goals were echoed by Grumbine (1994) as a result of an extensive literature review on the goals of ecosystem management: 1) Maintain viable populations of all native species in place; 2) Represent within protected areas all native ecosystem types across their natural range and variation; 3) Maintain evolutionary and ecological processes; 4) Manage over relatively appropriate timespans; and 5) Accommodate human use and occupancy within these parameters. DoD Instruction 4715.3 states that INRMPS incorporate the principles of ecosystem management. DoD facilities involvement, along with other partners, reflect the effort to manage and represent viable populations across their natural range and variation.

TNC's ecoregional planning process meshes well with DoD's Multi-Site Management plan as it establishes a lasting framework for the conservation and stewardship of biological diversity ecoregionally by working with DoD facilities and other Federal, state, land holders, as well as corporate and private landowners and stakeholders. The Multi-Site Management Plan should also be seen as a management and policy tool for facility Natural Resource Managers to fulfill their directives by providing accurate, updated science-based ecosystem data. This Multi-Site Management Plan will identify species and vegetation types of critical priority necessary to maintain biodiversity in the ecoregion and to identify specific actions, incorporate adaptive management for sustainable use, and protect or enhance viability of conservation sites within the ecoregion. Together with the ecoregional plan, the Multi-Site Management Plan will greatly advance the capacity to work with land management agencies within the ecoregion to reduce ecosystem stresses, fill data gaps, and demonstrate sustainable and adaptive natural resource management. This plan will provide a means to efficiently use conservation funds regionally and the reduction of management burden on military lands by bringing other land management entities into the process.

An ecoregion is generally defined as relatively large areas containing geographically distinct assemblages of natural communities, where communities share a large majority of their species, dynamics, and environmental conditions, and the communities also function together as a conservation unit at large scales (Ricketts, et al. 1999). TNC based initial ecoregion design on the efforts of the U.S. Forest Service (Bailey, 1995) and further refined to sub-ecoregions (Keys, et al., 1995). The Upper West Gulf Coastal Plain (UWGCP) ecoregion boundary is based on Bailey, though the need to modify some boundaries became apparent during the planning process.

Ecoregional plans endeavor to set the groundwork for regional, state, local, and community based conservation through strategic, long-term priorities and strategies. An ecoregional plan should

- Prioritize TNC resources and management action
- Provide a scientific basis for community based conservation action by delineating geographic areas that should be managed for conservation and biodiversity,
- Provide a general conservation strategy for those sites.
- Clearly illustrate data gaps discovered during the planning and implementation process, and provide a roadmap for reconciling those gaps.

A complete ecoregional plan contains not only the sites, but tools for the conservation planners and implementers:

- Data to support those sites and priorities,
- Strategy to implement the plan,
- A mechanism to review, update and measure the success of a plan.

The portfolio conservation areas, supporting data, and the applicable management and conservation strategies are based on the best available science, and therefore provide a roadmap for the best use of TNC and partner resources. An ecoregional plan is also useful as a data bank and data gap analysis. As such, it is a living document that requires review and updates as necessary.

Note that while the goal of an ecoregional planning effort is to delineate the minimum or priority area necessary to conserve an ecoregion's biodiversity, different portfolio sites represent different goals and not all sites represent functional landscapes. Plan users should carefully review each site description and strategy to ensure plan success (Appendix 1).

Within ecoregions, portfolio conservation areas are designed to conserve biodiversity by managing viable native community, zoology and botany targets identified during the planning process. Protection of high quality sites that conserve multiple, unprotected or nontarget occurrences are preferred conservation strategies. To best fulfill the conservation goals of the plan, implementers need to restore and maintain ecosystem patterns and processes that species and communities need to survive (Turner, 2000).

This document represents the initial ecoregional conservation planning effort for the Upper West Gulf Coastal Plain. The plan will provide a portfolio of conservation areas, including priority or action areas, the data compiled and created during this planning effort, methodology, the data

gaps identified, and a strategies for plan implementation. It is hoped that conservation planners, site-based conservation staff, and TNC partners use this plan to effectively manage the biodiversity of the ecoregion. Successful use, however, will require a commitment of cooperation, resources and time, as well as the sharing of responsibility and effort.

Overview and General Description of The Upper West Gulf Coastal Plain

The Upper West Gulf Coastal Plain ecoregion is approximately 26,500,000 acres or 41,400 square miles and encompasses parts of four states, Arkansas, Oklahoma, Texas, and Louisiana. The UWGCP extends south approximately from Little Rock, Arkansas to Shreveport, Louisiana, southwest to Houston and Northwest to outside the Dallas/Fort Worth area. Physiographically it is bordered by the Lower West Gulf Coast 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 longleaf pine terrestrial community.

The ecoregion is a significant part of the world center of freshwater mussel and fish diversity found in the southeastern United States. Streams, rivers, and palustrine wetlands support assemblages of fishes and mussels including Federally listed and other globally critically rare species, as well as regional endemics. UWGCP segments of the upper Saline, lower Ouachita, and middle Sabine Rivers are particularly noteworthy. Examples of globally critcally rare aquatic species include *Arkansia wheeleri* (Ouachita rock-pocketbook, G1LE), *Potamilus amphicaenus* (Texas heelsplitter, G1), *Lampsilis abrupta* (Arkansas fatmucket, G2LE), and *Quadrula fragosa* (winged mapleleaf, G1LE). Plant species and terrestrial plant communities of the UWGCP are also significant components of regional diversity. Globally critically rare plants include *Lesquerella pallida* (White bladderpod, G1LE), *Leavenworthia texana* (Texas golden gladecress, G1), *Hibiscus dasycalyx* (Neches River rose mallow, G1), *Tomanthera auriculata* (G2), *Geocarpon minimum* (G2LT), and *Eriocaulon kornickianum* (small-headed pipewort, G2).

Local geology and soils provide small patch diversity supporting many globally significant plant commmunities. Blackland prairies, woodlands, and forests associated with calcareous substrates are examples of small patch communities of global importance, which are well represented on Army Corps of Engineers land in Arkansas. The upland matrix shortleaf pine/oak communities are much reduced in quality and extent, though examples remain at Barksdale AFB, Long Horn Army Ammunition Plant, and Pine bluff Arsenal. Fire is a key ecological process in these systems.

TNC is planning and implementing conservation in the UWGCP using an ecoregional approach. This project will greatly advance TNC's capacity to work with land managing entities to conserve biodiversity, identify and reduce ecosystem stresses, and demonstrate sustainable and adaptive nature resource management.

Physiographic and Geologic Features

Following is a general description of the physiographic and geologic features of the UWGCP. More detail on the physiographic and geologic features of each portfolio conservation area will be discussed at the site conservation level of planning.

The Upper West Gulf Coastal Plain is composed largely of clays, sands, marl, gravels, bedded gravels and clays, and marine sediments associated with the Cretaceous period, approximately 50 million years ago (Shepherd, 1984). Recent geologic formations include Quaternary age Pleistocene deposits and Holocene alluvial deposits (McInnis, 1995). Further south in the gulf coastal plain, Cretaceous deposits are overlain with Tertiary Pliocene and Claiborne Eocene deposits (Bernard & LeBlanc, 1965).

This late Cretaceous marine geology in the Upper West Gulf Coastal Plain is represented by the Trinity Group, Goodland Limestone, Kiamichi, Woodbine, Tokio, Brownstown, Ozan, Annona, Saratoga Chalk, and Nacatoch sand formations. Marginally marine depositional groups from the Tertiary period include the Midway and the Jackson group. Non-marine sands, silty sands, clays, gravels, and quartzite and lignite deposits from the tertiary period are represented in the Wilson and Claiborne, groups. (Bernard & LeBlanc, 1965).

Marine, marginally marine, and nonmarine deposits are found throughout the ecoregion in Arkansas, Louisiana, Oklahoma, and Texas (McFarland, 1998). Sands underlie large parts of the UWGCP, and alkaline Lafe soils are present as well (Shepherd, 1984). There are some igneous intrusions in the ecoregion as evidenced by the bauxite and nepheline syenite formations in south central Arkansas (McFarland, 1998).

The UWGCP is bordered by the Mississippi River Alluvial Plain to the east, the Ouachita Mountains to the North, the Crosstimbers and Southern Prairies to the West, and the Lower West Gulf Coastal Plain to the south. The division between the lower and upper west gulf coastal plains is the northern extent of the Southern Longleaf Pine community.

Topography ranges generally from flat to rolling hills, with occasional ravines and erosional bluffs. Elevation ranges from 850 to less than 10 feet above sea level. A series of depositional plains make up the ecoregion; the Willis plain is the highest, to 200 feet, then the Bentley from 200 –100, the Montgomery from 125 to 70, and the Beaumont from 100 to 10 feet above sea level. Most of the UWGCP lies between 150-300 feet above sea level (Bernard & LeBlanc, 1965).

The UWGCP has microtopographic natural hillocks or “pimple mounds,” approximately 3 feet high and 50 feet in diameter, and are most evident in Wrightsville soils. They are found on Tertiary and Quaternary deposits in Louisiana, Arkansas, Texas, Missouri, and Kansas, but have not been reported east of the Mississippi River. The pimple mounds support islands of upland vegetation on otherwise wetland forests or savannas. No single theory significantly explains the origin of these mounds (Bernard & LeBlanc, 1965).

All Quaternary gulf coastal plains are depositional. Each progressively older Pleistocene coastal plain passes under the deposits forming the next younger plain; each successively younger plain slopes seaward at progressively smaller rates, varying in different areas along the coast because of different initial depositional slopes and differential coastal warping (Bernard & LeBlanc, 1965).

Settlement Use History and Current Human Interaction/Demographics

It is believed that nomadic hunter-gatherers first occupied the Upper West Gulf Coastal Plain at the end of the last glacial advance, approximately 14,000 to 10,000 years ago. Approximately 2,500 years ago Native Americans began to transition from a gathering to an agricultural lifestyle (Peter, et. al., 1990). European visitors to the Upper West Gulf Coastal Plain in the early 1800s reported Native Americans were engaged in limited farming, as well as hunting and gathering. It is believed that the Caddo tribe augmented the natural fire process in the ecoregion to clear areas, enhance crops, and flush game. Though there was a European presence in the area since the 17th century, the 1820s are considered the real beginning of settlement in the ecoregion (Shepherd, 1984).

Most Native Americans were relocated from the Upper West Gulf Coastal Plain by the 1840s. Relocation coincided with increasing western settlement aided by Federal land grant programs (McInnis, 1995). Agriculture became one of the primary land uses in the UWGCP with the rise of several large plantations in the 30 years before the civil war, with cotton and corn the dominant crops (Peter, et. al., 1990). The civil war curbed large-scale agricultural development. After the civil war property was sold off in smaller tracts so that by 1900 numerous smaller farms and tenants occupied the area. Cattle grazing also became popular in the ecoregion after the civil war (McInnis, 1995).

Cotton farming grew as more lands were cleared from timber harvesting, to the point were cotton farming was attempted in nearly every terrestrial system in the ecoregion. Many of the smaller farms that were abandoned during the Great Depression in the 1920s and 1930s were purchased by the Federal Government and became elements of Kisatchie, Davy Crockett, and Sabine National Forests (Turner, 2001).

Timber production has been the other primary land use in the ecoregion. Railroad construction through the UWGCP in the early 1800 facilitated traffic and development into the ecoregion, expanding timber and agriculture markets. Lumber mills followed rail lines into the ecoregion. The timber industry reached its peak in the UWGCP in the 1880s, and by the 1920s most of the ecoregion had been logged and cut over at least once. By 1925 almost all virgin pine had been cut over. After a decrease in large-scale timber harvesting, the timber industry moved to managed plantation harvesting. Timber harvesting for both sawmill and pulpwood continues to be a major land use in the Upper West Gulf Coastal Plain.

Mineral extraction in the UWGCP began in the late 1800s and included coal, lignite, clays, sand, gravel and metals. Many of these resources continue to be extracted from the ecoregion. Oil and gas extraction began in the 1920s following the decrease of timber production (McInnis, 1995).

The Nepheline Syenite formations in the northern part of the ecoregion were mined extensively beginning in the 1930s for bauxite for the aluminum industry. In addition to creating a huge demand for aluminum, World War II was also responsible for the number of munitions plants, depots and military bases in the ecoregion (Shepherd, 1984). As munitions plants and depots were constructed in remote areas with plenty of surrounding land, they provide excellent conservation opportunities owing to their scale and use patterns.

Natural resource-based industries in the Upper West Gulf Coastal Plain have expanded this century to include recreation and tourism, though much of the local economy is still based on forestry, agriculture, and traditional resource extraction. Suburban sprawl and development of natural lands continues to increase (Shepherd, 1984; U.S. Dept. Census, 1998).

Generally land use in the UWGCP has resulted in disturbance of various types and levels throughout the ecoregion. Many areas of biodiversity have experienced some kind of past disturbance including clearing for timber, agriculture, grazing, or mineral extraction. However, some of these areas have been or are in the process of being returned to a level of pre-settlement state. Following the first round of timber extraction, many cleared areas were converted to pasture or cotton fields. Cleared areas that have failed to grow cotton may have been abandoned to return to a wooded state, and areas that were clearcut for the first time in the 1920s or 1930s are now showing older-growth forest; similarly, areas that have proven unsuccessful at hosting commercial forest are being restored to their natural state. Unfortunately suppression of the natural fire regime has resulted in stressed or ecologically incomplete landscapes (Foti and Zollner, pers. comm, 2001).

Climate

The climate of the UWGCP is considered transitional, between subtropical humid areas of the south and gulf, and the continental climates of the great plains and midwest. Generally south or southwesterly winds contribute to hot, humid summers and mild winters. Spring and fall are usually mild. Winter temperatures average In the winter temperatures range from an average of 50º – 63º F in the afternoons and 39º – 50º F in the early mornings; there are approximately 30 – 40 days of freezing temperatures in the winter. In warmer months the temperature varies less, with afternoon temperatures averaging between 85º – 95º F and morning temperatures averaging 68º – 75º F (NOAA, 2001a).

Precipitation occurs throughout the year, though most rainfall occurs in the spring and fall. Thunderstorms and extreme weather can occur throughout the year, though they are more prevalent in the spring and fall in the northern part of the ecoregion, and in the spring and summer in the southern part of the ecoregion. The UWGCP receives approximately 46 – 50 inches of precipitation a year with approximately 100 days receiving measurable rainfall (NOAA, 2001b).

Extreme weather includes convective thunderstorms, which may have historically been the source of lightning-ignited low-intensity fires. Tornadoes, straight-line winds, and hailstorms also occur and have historically affected natural communities as periodic disturbances. More common in the southern section of the ecoregion, hurricanes and tropical storms from the Gulf of Mexico also affect climatology and natural communities.

Systems

Terrestrial Systems

The UWGCP terrestrial community targets were chosen at the complex level (see attached Data Management Plan for a full description and methodology, Appendix 3). Summaries for each complex as it is represented in the UWGCP follow. Terrestrial system names have been generalized to conform to the Southern Resource Office's and Association for Biodiversity Information's database. Though complex names may be used across ecoregions, the composition of each complex as it occurs in the ecoregion is unique and endemic to the ecoregion. Further, community associations as they are described for this ecoregion that belong to a terrestrial community complex are endemic to the UWGCP; therefore even though some groups are noted for not containing localized endemic or rare species, the associations themselves may be rare or endemic. For a breakdown of complexes and descriptions in each association, see Appendix 5.

Gulf Coastal Plain Xeric Sandhill Forests and Woodlands (CEGR030510)

This "sandhills" ecological system occurs in isolated large patches across the region on uplands underlain by deep, coarse sandy soils. These sites are typified by low fertility and low moisture retention which contribute to open tree canopies, usually <60% canopy closure. Sparse understory vegetation and abundant patches of bare soil are typical. Vegetation indicators are species tolerant of droughty sites, especially bluejack oak (*Quercus incana*) and Arkansas oak (*Quercus arkansana*). This system may support the largest concentration of endemic vascular plant species in the coastal plain. In addition to these endemics and near endemics are a number of species essentially restricted to such habitats in the region. Elsewhere in the southeastern United States, including most of the adjacent ecoregion (Lower West Gulf Coastal Plain, 41), these sandhills sites are closely associated with longleaf pine.

Gulf Coastal Plain Upland Pine & Pine-Hardwood Forests (CEGR030550) & (CEGR030560)

This ecological system was the historical matrix type for the ecoregion, and was present on nearly all uplands except on the most edaphically limited sites (droughty sands, calcareous clays, and shallow soil barrens/rock outcrops). These sites are underlain by loamy to fine textured soils of variable depths. These are upland sites on ridge tops and adjacent sideslopes, with moderate fertility and moisture retention. Vegetation indicators are shortleaf pine (*Pinus echinata*) and to a lesser extent loblolly pine (*Pinus taeda*). Both may occur in combination with a host of dry to dry-mesic site hardwood species. There are no known herbaceous species restricted to the habitat, and overall this system may have supported relatively low levels of vascular plant species diversity. This system is not currently known to support any local endemic or globally rare plant species. This system has undergone major transformations since European settlement of the region.

Gulf Coastal Plain Mesic Acid Upland Hardwood Forests (CEGR031010)

This ecological system is found in limited upland areas (especially sideslopes and narrow ridgetops) which were topographically isolated from historically fire prone, pine dominated uplands. Soils can be quite variable ranging from coarse to loamy in surface texture, although all are acid in surface reactions. These areas have moderate to high fertility and moisture retention. Sites are often found along slopes above perennial streams in the region. Vegetation indicators are mesic hardwoods such as American beech (*Fagus grandifolia*), white oak (*Quercus alba*), and American holly (*Ilex opaca*), although scattered, large diameter pines are also often present. Spring blooming herbaceous species are typical in the understory of most examples.

Gulf Coastal Plain Hardwood and Pine-Hardwood Flatwoods Forests (CEGR033040)

These "flatwoods" are usually found on non-riverine, Pleistocene high terraces. Soils are fine textured and may be saturated for lengthy periods of the year. Saturation occurs not from overbank flooding, but typically whenever precipiation events occur and especially when evapotranspiration is low (primarily late fall through early spring). This ecological system occurs in a complex of ridge and swale topography. Ridges support loblolly pine, white oak, and other mesic species such as sweetleaf (*Symplocus tinctoria*), and viburnum (*Viburnum dentatum*). Swales are heavily oak dominated with species tolerant of some inundation such as willow oak (*Quercus phellos*) laurel oak (*Quercus laurifolia*) with sparse coverage of wetland herbs such as *Carex glaucescens.*

Southeastern Coastal Plain Upland Longleaf Pinelands (320 series)

This system is exceedingly rare in the ecoregion, and is not found naturally in Louisiana, Arkansas, or Oklahoma portions of the ecoregion. While longleaf pine (*Pinus palustris*) was the dominant vegetation type throughout most of the southeastern United States coastal plain, it reached limits of natural distribution in portions of eastern Texas in the Upper West Gulf. This type is found only in limited, relictual areas. The unifying feature of this system is the presence of longleaf pine. Other vegetation can be quite variable, and much like that of other ecological systems (notably pine and pine – hardwood forests, and xeric sandhills). Most known sites occur on loamy uplands but the type also occurred historically on some deep, xeric sandhills in the region.

Gulf Coastal Plain Circumneutral Upland Mesic Mixed Hardwood Forests (CEGR031020)

This system is analagous to "Mesic Acid Hardwood Forests" and is found in related topographic settings. However, this system is found on soils which exhibit somewhat higher surface soil pH reactions. Consequently, the vegetation may include chalk maple (*Acer leucoderme*), southern sugar maple (*Acer barbatum*), Carolina basswood (*Tilia americana* var. *caroliniana*), hop hornbeam (*Ostrya virginiana*) and other indicators with calciphilic tendencies. These indicators have essentially eastern distributions (as opposed to species typical of CEGR037530, which are more midwestern). A rich understory of herbaceous species may also be present.

Gulf Coastal Plain Open Ponds and Emergent Marshes (CEGR048010)

This ecological system includes upland ponds which retain water for long periods of year, at sufficient depth and duration to allow presence of truly aquatic species. In well developed examples, this system tends to develop zonal vegetation patterns with emergent vegetation zones forming around the periphery of deeper waters, which in turn tend to support various floating leaved and sumbersed aquatic vegetation such as floating hearts (*Nymphoides aquatica*, *Nymphaea odorata*), watershield (*Braseni schreberi*), coontail, (*Ceratophyllum spp*.), duck weed (*Lemna spp*.), duckmeat (*Spirodela spp*.). Emergent zone plants may include smart weed (*Polygonum spp*.), maidencane (*Panicum hemitomon*), plumegrass (*Saccharum* spp.) and a variety of other species. In most of the region, natural ponds are exceedingly rare and invariably occur as small patches on the landscape. Most "natural" examples form as a result of beaver activity or other natural impoundments of flowing waters. A wide variety of successional environments have been created which appear to be floristically similar to natural examples.

Gulf Coastal Plain Upland Depression Forested Ponds (CEGR034010)

This ecological system occurs in upland depressions on poorly drained, often fine textured soils. Much like swales in "flatwoods", these areas typically receive moisture from precipitation instead of overbank flooding. These areas retain water for shorter duration than do open ponds and emergent marshes and consequently develop woody vegetation layers. These areas can range in appearance from fairly open aspects with widely scattered trees to quite densely stocked with small diameter saplings and small trees. Typical woody species include willow oak (*Quercus phellos*), bottomland post oak (*Quercus similis*), pop ash (*Fraxinus caroliniana*), and mayhaws (*Crataegus spp*).

Gulf Coastal Plain Herbaceous Seepage Bogs (CEGR034710)

This small patch ecological system consists of herbaceous dominated seepage fed wetlands. This system may occur in settings similar to "Gulf Coast Baygalls and Bayheads", and differs primarily in lacking a substantial woody vegetation layer. It is unclear whether or not a key ecological process difference separates the two systems, although fire frequency is often presumed to be of importance. In some areas, herbaceous seepages may be rapidly encroached by vegetation in the absence of fire. In addition, most examples of this ecological system co-occur spatially with either the "shrubby" or densely wooded phase of Baygalls and Bayheads. These "muck bogs" of Texas, with a host of regionally rare species, and the local endemic Rough-stemmed Aster (*Aster puniceus* var. *scabricaulis*) are also found in this system.

Gulf Coastal Plain Carbonate Glades and Barrens (CEGR035010)

This system is found only on shallow carbonate soil exposures in the region. These areas are derived from chalky or glauconitic geology such as the Weches formation of eastern Texas. These areas are often sparsely vegetated, at least relative to surrounding areas. Overstory trees are often absent or represented by occasional stems of cedar (*Juniperus viginiana, Juniperus ashei*). This sytem provide habitat for at least 2 rare, locally endemic plant species; white bladderpod (*Lesquerella pallida*), and Texas glade cress (*Leavenworthia texana*).

Gulf Coastal Plain Acidic Glades and Barrens (CEGR035010)

This system is exceedingly rare in the ecoregion, found only in association with the Catahoula geologic formation in eastern Texas. These areas support exposed sandstone or mudstone with sparse vegetation, surrounded by slightly deeper soils with prairie-like vegetation, and pockets or "mottes" of post oak (*Quercus stellata*). This system provides habitat for at least one rare, locally endemic plant; branched gayfeather (*Liatris cymosa*).

Gulf Coastal Plain Salt Glades and Barrens (CEGR035030)

This system occurs in association with the inland salt domes. Soils are highly saline (Natraqualfs) with predominately silty textures. Subsoils are often essentially cemented into an impervious hardpan by calcium. This condition contributes to alternate phases of extremely dry and extremely wet conditions (sometimes described as "xerohydric"). As with most glades and barrens, these areas are locally variable or zonal in appearance. An interior zone with patchy vegetation and abundant bare soil openings or "slicks" is usually present. Vegetation in this zone consists of mostly low growing forbs, many of them annuals, and many with "weedy" habits. Low, wet, shrubby zones may be present in some areas, while on the edges of sites, where the soil is deeper. This community may grade into hardwood or pine - hardwood forest, depending on the specific location. This system provides habitat for at least one rare, locally endemic plant; Geocarpon (*Geocarpon minimum*).

Gulf Coastal Plain Nepheline Syenite Glades and Barrens (CGER035040)

This small patch ecological system is only present on distinctive, massive outcrops of igneous substrate (nepheline syenite) in Saline and Pulaski counties, Arkansas. Vegetation in these areas exhibits some degree of zonality. The outcrops themselves are relatively extreme environments for plant growth due to mild alkalinity, exfoliation of rock surfaces, and surface moisture and temperature fluctuations. They are sparsely vegetated with low-growing forbs, mosses, and lichens. Around the periphery on somewhat deeper, better developed soils vegetation cover is greater. Perennial grass cover and a diverse herbaeous layer is typical, along with a scattered, often stunted canopy of trees. This system provides habitat for at least one rare, locally endemic plant; small-headed pipewort (*Eriocaulon kornickianum*).

Gulf Coastal Plain Baygalls and Bayheads (CEGR036010)

This ecological system consists of densely wooded, seepage fed wetlands and adjacent (often shrubby) seepage slopes. These wetlands may occur in depressions, poorly developed upland drainages, toe-slopes, and small headwaters stream bottoms. These environments are prone to long duration standing water, and tend to occur on highly acidic, nutrient-poor soils. In most cases, these wetlands are embedded in uplands with deep sandy soils. When these communities are associated with streams, they tend to be low gradient, with narrow, often braided channels and diffuse drainage patterns. Due to excessive wetness, these habitats are normally protected from fire except those which occur during droughty periods.

Southeastern Coastal Plain Small Stream Forests (365 series)

This ecological system occurs in fairly small, mostly linear patches across the ecoregion, wherever small to intermediate sized perennial streams bisect the landscape. These areas have minor floodplains and valleys associated with well-developed channels. Flooding is infrequent and of shorter duration than larger rivers although available soil moisture and nutrient availability is usually high. Small areas of groundwater seepage supporting obligate wetland plants may occur, but overall, vegetation will closely resemble that of pine and pine-hardwood forests (CEGR030560). Characteristic trees include white oak (*Quercus alba*), sweetgum (*Liquidambar styraciflua*), and loblolly pine (*Pinus taeda*). Well developed examples may exhibit a great degree of similarity to mesic acid upland hardwood forests (CEGR031010) with species such American holly (*Ilex opaca*), American beech (*Fagus grandifolia*), and others**.**

Gulf Coastal Plain Patch Prairies (CEGR037520)

This system is characterized by naturally herb-dominated vegetation occurring over deep soils (as opposed to "glades and barrens"), with almost exclusively circumneutral surface soil pH. This system tends to occur in a matrix of acid soils, and forested vegetation although in some instances examples may co-occur spatially with other circumneutral communities locally (see CEGR037530, CEGR037540). Distinguished from related prairies to west (see CEGR051010) which occur in much larger patches across the landscape (at least historically), maintenance by somewhat more extreme disturbance regimes, and consequently support more typically midwestern species composition. The largest examples of this system are found in southwestern Arkansas and known as blackland prairies. They include much more isolated and smaller patches present primarily on the Fleming formation of Texas and Louisiana. Nearly all examples are naturally isolated from one another due to large intervening areas of unsuitable habitat.

Gulf Coastal Plain Circumneutral/Calcareous Praire-Associated Upland and Slope Forests and Woodlands (CEGR037530)

This system consists of forests or woodlands on circumneutral, deep upland soils adjoining calcareous prairies characterized by a more extreme, basic pH than "Gulf Coastal Plain Circumneutral Upland Mesic Mixed Hardwood Forests." Such a characterization results in species composition more typical of Midwestern Prairie regions and less so of eastern deciduous forests. This system is also assumed to be more fire prone due to proximity to prairies. Edaphic and fire factors maintain fairly open canopies (typically < 60%). Typical woody species include; durand oak (*Quercus sinuata* var. *sinuata*), shumard oak, chinkapin oak, and hawthorn (*Crataegus spp*.).

Gulf Coastal Plain Patch Circumneutral/Calcareous Praire-Associated Riparian Woodlands and Forests (CEGR037540)

This system consists of small stream/riparian influenced forests and woodlands on circumneutral soils. In all cases, these forests or woodlands adjoin calcareous prairies and/or calcareous forest (Compare with group small stream acid forests). These areas were likely subjected to frequent fires originating in adjacent calcareous prairies, thus in natural condition may have been more open and woodland in structure than closed forest. Vegetation indicators, such as hackberry (*Celtis laevigata*), shumard oak (*Quercus shumardii*), chinkapin oak (*Quercus muehlenbergii*),

osage orange (*Maclura pomifera*), and soapberry (*Sapindus saponaria* var. *drummondii*) are indicative of calacareous conditions.

Gulf Coastal Plain Backswamp/Slough Floodplain Forests (CEGR038510)

This system type may occur in floodplain depressions of major rivers throughout the ecoregion, and the entire southeastern Coastal Plain. These areas tend to occur in oxbows and/or abandoned river channels where they receive overbank flooding. Soils are most often fine-textured and are very poorly drained (often flooded for long periods of the year). Soil color is usually gray as a result of continual anoxia. Characteristic vegetation of this system includes trees that are tolerant of inundation, such as water elm (*Planera aquatica*), baldcypress (*Taxodium distichum*), and water tupelo (*Nyssa aquatica*). Herbaceous ground cover and shrub layers tend to be sparse or patchy.

Gulf Coastal Plain Bottomland Hardwood Forests (CEGR038520)

Bottomland hardwood forests are found within the active floodplains of large and small rivers of the ecoregion. Regular flooding occurs in the winter and spring. Local microtopography and location within the floodplain greatly influence the amount and duration of standing water as well as the amount of scour and alluvial deposition. Soils are locally variable as well. Deciduous hardwood species, often attaining large sizes, characterize forests in this system, with oak species being most characteristic. Characteristic species include water oak (*Quercus nigra*), willow oak (*Quercus phellos*), laurel oak (*Quercus laurifolia*), swamp chestnut oak (*Quercus michauxii*), and overcup oak (*Quercus lyrata*) are commonly encountered.

Cross Timbers Upland Oak Forests and Woodlands (CEGR051010)

This system is dominated by upland oak vegetation found in the post oak savanna and cross timbers natural regions, largely outside the native range of pine (excluding the "Lost Pines" area of Bastrop, TX). This system is the presumed historical matrix vegetation type along the western boundary of the ecoregion grading into the cross timbers ecoregion. Characteristic trees are post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*). This system is broadly defined across site types, and could occur on nearly any upland soils except those which support prairies or other similar vegetation.

Crosstimbers Tallgrass Clay Prairies (CEGR052010)

This system represents upland prairies found in the post oak savanna and cross timbers natural regions. As opposed to "patch prairies" listed previously, these prairies occupy large portions of the landscape (at least historically), and are typified by species composition more midwestern. In this ecoregion, cross timbers prairies are present only in a narrow strip in eastern Texas often called the "Post Oak Savanna" natural region.

Aquatic Systems

Though all aquatic systems in upper west gulf coastal plain do not drain into the Mississippi River basin, all are zoogeographically classified in the Mississippi province (Moyle and Cech, 1998), and as such, contain the richest assemblage of fish and mussel species in the Nearctic region. Further, the lower Mississippi River basin is considered a glacial age species refuge, allowing for historic reoccupation and evolution throughout the range. Aquatic systems represented in the UWGCP include lacustrine systems as natural lakes, riverine systems as high-order/big rivers, and low-order/small streams, and seeps, and palustrine systems as sloughs and swamps. The majority of aquatic systems in the UWGCP are fluvial, with some natural lakes. Man-made lakes and impoundments are not included in this summary.

Low-order/small streams and rivers

Small streams originate in the ecoregion through surface and sheetflow-fed seeps and through sheetflow, groundflow, and surface flow drainage from adjacent ecoregions. Often lower-order reaches of streams and rivers originate in adjacent ecoregions (e.g., Ouachita Highlands). Substrates can be composed of sand, gravel, or cobble; and some form from decay of bedrock uplifts at ecoregional boundaries. Some low-order prairie stream systems have predominant clayey or finer substrates. Pool/riffle systems are a common feature of these systems. Water is commonly clear and cool with medium gradients. These systems will flow into higher-order/big rivers directly and contribute to slough/swamp systems as well. Riverine systems contain the lowland fish faunal group, and offer the most diverse fish communities in the ecoregion. These systems provide critical habitat for mussel communities and beds, many of which are species targets. Fish target species found in low-order streams include suckers, chubs, shiners (e.g., taillight and blacknose shiners), redhorses, and all target darters (Robison, 1988, Smith, 1992).

High-order/large rivers

Small and medium streams feed into high-order larger rivers in the ecoregion, which in turn contribute to slough/swamp systems. Larger rivers are part of the Red, Mississippi, Sabine, or Trinity drainage systems. Transitioning from streams, Gravel and cobble begin to include sand and mud stubstrates. Large rivers in the UWGCP also contain significant mussel communities. Sandbars on the main channels of large rivers, (.e.g., the Red River) are habitat for the alligator snapper and the endangered Least Interior Tern. Large river fish include some chubs and shiners, alligator gar, shovelnose sturgeon, and the paddlefish. Ecolgical processes in most, if not all large-order rivers in the UWGCP have been affected by locks, dams, dredging, or channelization.

Sloughs and Swamps

Sloughs and swamps occur throughout the ecoregion, in connection with both higher- and lower-order riverine systems. Wetlands occur with varying levels of saturation in the UWGCP, though the typical targeted aquatic system considered here is a permanently-flooded cypress-tupelo swamp or shrub swamp. Attributes for consideration of terrestrial management of these systems is described and through terrestrial community planning. Fish communities are similar to those found in large-river and natural lake communities.

Natural Lakes

Most natural lakes in the UWGCP originated through riverine action, either as higher-order cut-offs or meanders (i.e., oxbow lakes), however some formed from riverine systems that were nautrally jammed from presettlement events. Caddo Lake is the largest natural lake in the ecoregion and is the remainder of the "Great Raft," a series of large log jams, lakes, and sloughs formed on the Red River. US Army Corps of Engineers cleared the Great Raft in the mid-1800s in an effort to open the Red River to navigation (McInnis, 1995). Natural lakes in the ecoregion are generally shallow with mud, sand or finer substrates. Common fish species include most gamefish; target species found at natural lakes include the alligator snapping turtle and the alligator gar. The dominant community complex surrounding natural lakes is the gulf coastal plain Plain Backswamp/Slough Floodplain Forest.

Stresses and Sources of Stress in the UWGCP

UWGCP technical expert teams participated in a Stresses and Sources of Stress assessment to determine and prioritize stresses on the ecological systems and portfolio conservation sites and to address their sources through implementation strategies. Stresses on systems and portfolio sites directly impact the ecoregional plan implementation and site conservation action plans. Results from this analysis were used along with priority ranking criteria to determine the ecoregion's action sites.

In order based on count, the three leading stresses for sites in the UWGCP are:
- habitat destruction or conversion;
- habitat fragmentation; and
- alteration of natural fire regimes.

Other stresses include:
- Altered composition/structure
- Altered hydrologic regime (flow, quantity, etc.)
- Excessive herbivory/Habitat disturbance
- Nutrient loading
- Poor water quality (pollution, turbidity, etc.)
- Soil erosion
- Sedimentation
- Toxins/contaminants

The top three sources of stress by count are fire suppression, agriculture, and forestry/improper silvicultural practices. The top three combinations of stress and sources of stress are: fires suppression and alteration of natural fire regimes; forestry –improper silvicultural practices and altered composition/structure; and forestry—conversion and habitat destruction/conversion. Additional stressors in the UWGCP include:
- Biological (exotic species, disease, woody suppression)
- Commercial development
- Dams/reservoirs
- Dredging/diversions
- Forestry/conversion
- Improper management (e.g., managed for incompatible species)
- Industrialized livestock production
- Livestock grazing
- Recreation (includes off-road vehicle use, road/trail construction, trampling/overuse)
- Residential development
- Resource extraction – mining
- Resource extraction – oil and gas exploration and development
- Roads/construction
- Water pollution: non-point source
- Water pollution: point-source

Prioritizing Sites

Expert technical team members completed an action site evaluation matrix to arrive at the ecoregional action sites (included on data CD). The Number and Diversity of Targets field was derived from the data supporting the portfolio; Complementarity and Leverage fields were derived from data but were subject to adjustment by evaluation participants. Urgency/Degree of Threat and Feasibility/Opportunity to Abate Treat fields were similarly subject to change upon review; Biodiversity Health of Targets was the only completely subjective field to be completed by evaluation participants.

After the first round of action site review, there were 12 action sites in the UWGCP. An additional 18 sites scored highly enough to be considered secondary action sites.

Action Sites	Secondary Action Sites
Lorance Creek / Big Lake	Terre Noire
Nepheline Syenite Glades	Little Missouri and Lower Antoine Rivers
Pine Bluff Arsenal	Ross Foundation
Little River from Glover River to Millwood Lake	Nacatoch Ravines
Poison Springs	Palmetto Flats
Miller County Sandhills	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
Bayou Bartholomew	Sulfur River Wildlife Management Area
Caddo Lake Complex	Bayou Dorcheat
Tonkawa Sandhills/Naconiche Creek	Daingerfield State Park
Northern Sabine National Forest	Caney District, Corney Unit - Kisatchie National Forest
Davy Crockett National Forest	Caney District, Caney Unit - Kisatchie National Forest
Lower Trinity River	Bodcau
	Mill Creek Ranch
	Barksdale & Ammo Plant
	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou
	Burkitt Foundation, Gus Engling Wildlife Management Area
	Camp Bette Perot
	Upper Neches River

The Action Site evaluation matrix was reviewed and adjusted at the implementation meeting. This review stemmed from an effort to move away from the yes/maybe/no categorization towards a level of prioritization to reflect the concept that all sites are action sites yet recognize some priority should be given to sites with the highest combination of diversity, health, and threats. Complementarity prioritization was performed according to Geography of Hope (TNC, 2000) as modified by participants who had performed similar prioritization evaluations for the Lower West Gulf Coastal Plain (Turner, 2001).

Sites where conservation will achieve the highest level of Complementarity

- Pine Bluff Arsenal
- Little River from Glover R. to Millwood Lake
- Nacatoch Ravines

- Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
- Bodcau
- Caddo Lake Complex
- Barksdale and Ammo Plant
- Camp Bette Perot
- Davy Crockett National Forest

Sites where conservation will achieve the next highest level of Complementarity:
- Nepheline Syenite Glades
- Palmetto Flats
- Bayou Bartholomew
- Red River Macrosite
- Upper Sabine River Complex
- Tonkawa Sandhills/Naconiche Creek
- Mud Creek
- Northern Sabine National Forest

Prioritization of sites should not exclude conservation action at other sites identified in this planning process; especially when connectivity, functional landscapes and multi-site threats and strategies are considered. Note that most multi-site strategies will be most effective when implemented initially at sites with higher complementarity then at remaining applicable sites.

Conservation Goals and Rollout Data

Following is the rollout data for the UWGCP ecoregional plan first iteration; attached to this plan are more detailed reports of the rollout data, including a viable target occurrences captured by conservation areas, occurrence goal fulfillment status, and target breakdown by Global rank and type. Attached maps also show viable target occurrences on DoD facilities.

Rollout Information

Planning teams identified 78 portfolio conservation areas necessary to preserve the biodiversity in the UWGCP. Of the 130 targets, 20% or 26 met their established goals; 54% of the targets that met their goals did so by inclusion of expert recommendation/non-heritage occurrences. Of the 26 targets that met their goals, 35% were communities, 23% were plants, and 42% were animals.

72% made progress some progress towards their goals, that is, a portion of the occurrences necessary to complete a goal were met. The remaining 36, or 28% are not represented in the portfolio. Of the unrepresented targets, 6% were terrestrial communities; 55% were zoology targets, and 39% were botany targets.

Of the species that met their conservation goals 4% are ranked as G1. 12% are listed endangered or threatened, and 8% are ranked as G2. 7% of all G1 and G2 targets met their goals. 16% of the zoology targets, 30% of the community targets, and 17% of the plant targets met their goals.

The total approximate acreage of the portfolio conservation areas is 4,193,851. These sites compose approximately 16% of the ecoregion. It should be noted that this is a dynamic plan, influenced by the addition of new or missing data; and implementation at the site level; therefore this percentage or acreage should be considered an approximate minimum necessary to conserve biodiversity in the UWGCP.

Many, though not all conservation areas in the UWGCP contain areas that are already managed for conservation or protected by a state, federal, TNC, or other privately entity. However, rarely do these management areas encompass the entirety or even a majority of the individual portfolio sites. There are approximately 1,697,295 acres or 40% already under some kind of conservation or wildlife management within the ecoregion. 48 of the 78 have some protection component, while only 4 sites can be considered 100% protected. An additional 12 sites could be considered more than 50% protected. Of the areas in the portfolio conservation sites that are already managed for biodiversity, 1,447,496 acres or 85% is under federal management; 234,095 acres or 14% is under some form of state management; 15,704 acres or 1% is under TNC or other private conservation management. Table 1 provides a breakdown of protected areas within the portfolio.

Table 1: Basic Conservation Portfolio Breakdown	
Total square miles protected in the UWGCP portfolio	2,652
Total acres protected in the UWGCP portfolio	1,697,294
Total square miles of existing conservation areas	6,553

Total acres of existing conservation areas	4,193,851
Total square miles of landscape scale (> 20,000 acres) in UWGCP Total acres of landscape scale conservation areas in UWGCP	6,144 3,932,196
Total square miles of federally managed lands in portfolio Total acres of federally managed lands in portfolio	2,262 1,447,496
Total square miles of state managed lands in portfolio Total acres of state managed lands in portfolio	366 234,095
Total square miles managed by TNC in UWGCP portfolio Total acres managed by TNC in UWGCP portfolio	25 15,704

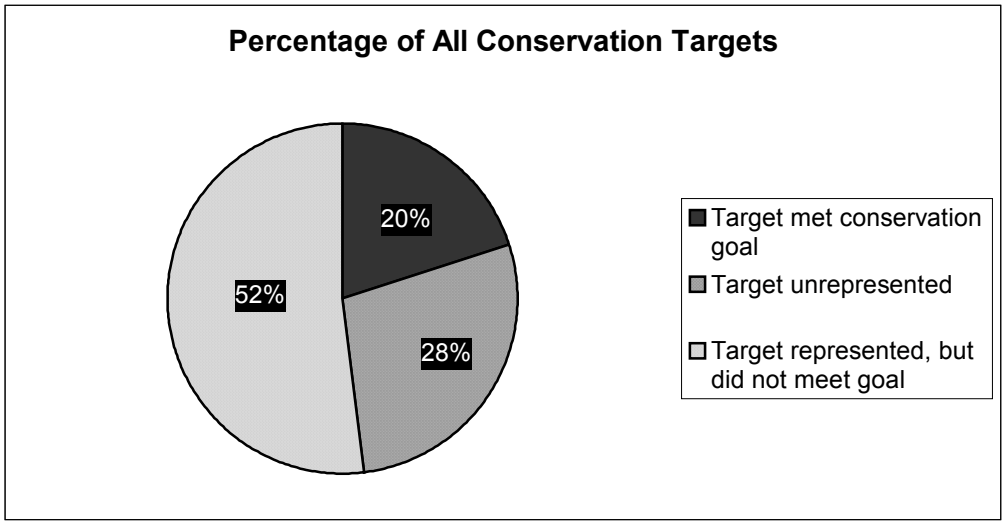
Table 2 provides a breakdown of species conservation targets by G-rank:

Target Type	G1	G2	G3	G4	G5	NA	Total
Animals	13	13	15	18	8	0	67
Plants	3	10	18	4	1	0	36
Terrestrial Communities	0	0	0	0	0	27	27
Total	16	26	33	22	9	27	130

Table 3 provides a geographic distribution of conservation targets:

Geographic Distribution	Terrestrial Communities	Animals	Plants	Total	Percentage of all targets
Endemic	13	9	6	28	22%
Limited	10	38	21	69	53%
Peripheral	1	2	0	3	2%
Widespread	3	18	9	30	23%
Disjunct	0	0	0	0	0%
Total	27	67	36	130	100%

Figure 1 illustrates the percentage of all conservation targets that met their goal, percentage of targets that did not meet their goal, and percentage of unrepresented targets in the portfolio.



Terrestrial Communities

The community team determined a total of 27 community targets; of those they found 13 endemic community targets, and 10 limited targets. Nine of the 27 community targets, or 30% met their goals. Three of the group targets are considered matrix communities, representing 2.3% of all targets for the UWGCP. 11 are considered large patch, and 13 are considered small patch communities. 33% of all terrestrial communities met their goal. 25 out of 27 terrestrial ecological systems are represented in the community targets. The community team set conservation goals based on groups due in part to significant data gaps for accurate association-level or alliance goal setting across the ecoregion; as such a transition to association-level management will be possible when the level and quality of data across the ecoregion is standardized.

Table 4 illustrates community targets met:

Spatial Pattern	Goals met / Total targets	Percent of targets meeting goals
Matrix	0 / 3	0%
Large Patch	4 / 11	36%
Small Patch	5 / 13	38%
Total	8 / 27	30%

Zoology and Botany Targets

Botany team determined that there were 36 plant targets. The botany team found 6 endemic targets, and 21 limited targets. 6 out of 36 or 17% of the plant targets met their goals.

Zoology team members determined that there were 67 animal targets. The zoology team found 9 endemic animal targets and 38 limited targets. 11 of the 67 animal targets, or 16% met their goal.

Table 5 lists the zoology targets met by taxonomic group:

Taxonomic Group	Goals met / Total targets	Percent of targets meeting goals
Amphibians	1 / 3	33%
Birds	2 / 6	33%
Fishes	4 / 15	27%
Mammals	0 / 5	0%
Reptiles	2 / 2	100%
Crustaceans	0 / 13	0%
Insects	0 / 5	0%
Mollusks	2 / 18	11%
Total	11 / 67	16%

Aquatic Communities

62 sites, or 79% of the sites are considered aquatic sites or contain significant aquatic elements. 16 or 21% of the sites are primarily terrestrial sites. All aquatic sites should be considered as having a 10-acre buffer component. Since many terrestrial and aquatic sites are interdependent, many terrestrial sites and aquatic have been merged, making site conservation management efforts more efficient, coordinated, and holistic.

Ecoregional Plan Implementation

This section is provided to summarize the results of the UWGCP ecoregional plan implementation meeting and provide a starting point for implementation strategies throughout the ecoregion. These implementation strategies are designed to fulfill the mission of The Nature Conservancy of ensuring the survivability of biodiversity within the ecoregion by protecting the lands and waters the elements of biodiversity need to survive. Initial implementation will address multi-site strategies and multi-site threat abatement at action and other portfolio sites within the ecoregion.

Multi-Site Strategies

Multi-site strategies were developed to enable implementation of the ecoregional plan through clear, prioritized, cohesive measurable action. Participants in the multi-site strategy were asked to review literature and guidance pertaining to multi-site strategies, including relevant *Geography of Hope* chapters, implementation sections from other ecoregional plans, and the results of multi-site strategy meetings from other ecoregions. Initial activities were to review the major systems in the ecoregion, then review stresses and threats to determine multi-site stresses and their sources. The stresses/sources of stress assessment relied on the Geography of Hope definitions of a stress, source of stress, and threats[1]. For the purposes of this chapter and activity these definitions have been truncated: "stress" is defined as an ecological or biological element, i.e., sediments; "sources" are defined as anthropogenic, i.e., fragmentation or development; "threats" can be any combination of sources or stresses.

Ecoregional planning is translated to implementation through conservation action at individual sites and through implementation of multi-site strategies. Note that many multi-site strategies also address or link several threats. Multi-Site Strategies were developed through an iterative process of review and expert input/workshops. Major terrestrial and aquatic systems in the ecoregion were reviewed, then multi-site threats and top sources of stresses were developed and listed. Experts then identified multi-site strategies and developed each under a specific threat. Action items were identified for each strategy, and objectives were developed for each action item.

The following are system threats identified in the implementation experts meeting. Terminology was structured from the initial Geography of Hope based stresses/sources of stress analyses.

Terrestrial system threats:

- Conversion: Silviculture, Agriculture
- Agricultural conversion (present/historic)
- Incompatible Forestry
- Altered Fire Regime
- Conversion/destruction from commercial and residential development
- Roads and right-of-way construction

Aquatics system threats:

[1] *Stress*: something that impairs or degrades the size, condition, or landscape context of a conservation target, resulting in reduced viability; *Source*: a human or biological factor that infringes upon a conservation target that results in stress; *Threat*: the combined concept of stresses to a target and the sources of that stress to that target.

- Hydrologic alteration: dams/reservoirs, dredging, channelization, levees, Thermal pollution/alteration.
- Agriculture,
- Silviculture/incompatible forestry,
- Roads and right-of-way construction
- Extraction/mining, (mineral as well as water extraction)
- Non-point Source and Point-Source discharge
- Invasive species

The implementation team decided on the following as the top sources of stress:

Fire Suppression/Altered Fire Regime
Agriculture
Roads/Construction of Roads
Dams/Reservoirs
Residential and Commercial Development
Invasive Species

Forestry

The goal of the forestry multi-site strategy is to manage all applicable viable portfolio sites under a compatible program towards a targeted structure/composition within a functional landscape relative to TNC's portfolio conservation areas. The Forestry multi-site strategy addresses the following stresses:

- Altered composition/structure
- Habitat destruction/conversion
- Habitat fragmentation
- Nutrient loading
- Sedimentation

Compatible Forestry Strategy

The most efficient method of addressing these stresses is a compatible forestry strategy implemented across the ecoregion in conjunction with other compatible forest strategies in adjacent ecoregions. The concept behind the compatible forest initiative is that by becoming an active partner in forestry management, TNC can provide meaningful input to all partners, and build defensible data for targeted audiences demonstrating the economic and conservation feasibility of compatible forestry. TNC has identified three groups of forestry professionals to for initiative coordination: industrial foresters, public lands foresters, and private non-industrial forest landowners (PNIFLOs). It was determined that each group represents sectors of ownership for applicable portfolio conservation areas (PCAs), and successful implementation of the multi-site strategy requires a customized approach to each group. As the initiative matures, the program manager should consider compatible forestry demonstration areas for each of the three groups. Clearly defined demonstration area projects and monitoring will provide practical data targeted to group members, thus enabling buy-in to the concept, and therefore build capacity for outreach within each group.

The short-term objectives of the compatible forestry strategy initiative are

- Identify appropriate landholders within eligible PCAs
- ID appropriate national level programs at state-level implementation (e.g., forest legacy) to foster working cooperation.
- Develop relations with extension services

Further, as the initiative will be working on multiple levels with multiple entities, TNC resources should address the following program needs:

- Design and monitor demonstration areas to produce data useful to partners
- Support or introduce tax incentives and other opportunistic regulatory incentives to make the initiative more attractive
- Actively incorporate the initiative into public lands management and planning, especially through forestry plan revisions (USFS)
- Develop or partner with existing economic compatibility study to demonstrate effectiveness and connectivity in an effort to build a national and even
- Assist landowners, particularly PNIFLOs, in classifying their lands through SFI

The compatible forestry initiative should create working demonstration areas in each landowner group to build capacity towards the long-term goal of the initiative, which is to implement compatible forestry with all applicable landowners within portfolio conservation areas. In order to accomplish this goal, the initiative requires action on several levels to many audiences. An immediate need is to design and begin gathering useful data so that partner buy-in and cooperation is established; partners must be presented with data that shows in their terms that compatible forestry is economically as well as environmentally feasible. This assessment should include an appropriate risk analysis. External relations activities should address tax incentives, and identify and actively support other regulatory measures designed to make compatible forestry more attractive to partners.

Critical to the compatible forestry initiative and the demonstration activities in particular is quality information and data dissemination. As targeted towards PNIFLOs, information dissemination should include:

- Success stories
- Workshops
- Consultant/professional organization education
- Mitigation funds tie-in

Further, the initiative should make use of existing systems to disseminate data and promote the initiative. Initiative managers should also investigate the applicability of mitigation funds coordination.

Certification through professional organizations such as American Forest and Paper Association's Sustainable Forestry Initiative (SFI) and Forest Stewardship Council's (FSC) certification towards ISO 9000 standards, and any American Forestry Association standards should be addressed. Professional organizations should be provided the opportunity to use TNC's Compatible Forestry Initiative as a vehicle for their SFI and ISO 9000 certification programs. An opportunity also exists for TNC to review partners and certification standards, and pursue adjustment of those standards if necessary. The initiative will be most efficient if it is able

to reach the entirety of its intended audience; an effort should be made to identify and involve nonparticipating entities as well as non-certified landowners.

The scope of Compatible Forestry Initiative objectives may be best explored through each group's specific need. An overarching need is to identify lead staff within TNC and initiate compatible forestry action; if a full-time manager is to be used, then a job description and terms of reference should be created from this text; further, interim measures should be identified and initiated.

PNIFLOs

- ID owners/partners in PCAs. Some already identified are Winrock, Ross Foundation.
- Develop landowner incentives: private lands strategy
  --tax credits for practices, PNI certification process
  --state forestry and consultant training
- Involvement in state forestry councils/committees
- Develop relations with extension service
- Demonstration sites, field reps
- Identify "niche" partners, markets
- Involvement in government programs

Industrial Forestry Interests

- Develop regional support structure
- Identify certification and professional organization contacts.
- Determine / develop regional and national support and organizational implications
- Explore FWI levels of expertise model and public forest model for long-term organization structure
- Develop and perfect forestry management model in this ecoregion that can be exported to other ecoregions

Public Lands

- Review agency operations guidelines
- Build "unified front" towards agency credibility
- Initiate public lands liaison activities; include state forestry commissions and farm bureaus as well as federal partners
- Align and coordinate with regional FWS offices and management plan
- Assist public lands in filling their data gaps, especially inventory
- Align Compatible Forestry Initiative with USFS forest management plans; incorporate Compatible Forestry Initiative into USFS forest management plans
- Coordinate and initiate government-relations interaction for forest management plan alignment and generation of necessary MOUs
- Review and develop strategy and policy that addresses inholdings
- Gain input to / align with State/federal acquisitions policy and strategies—relates directly to inholdings

Agriculture

The goal of the agriculture multi-site strategy is threefold: successfully prevent excessive sediments and contaminants from entering targeted aquatic communities; successfully prevent incompatible agricultural practices or conversion, and to restore or reforest agricultural lands where applicable. It was generally agreed that agricultural activities have the greatest impacts on bottomland hardwood forest and aquatic systems; though it was also noted that agriculture-related stresses related to upland systems warranted review. The agriculture multi-site strategy addresses the following threats:

- Habitat destruction/conversion
- Habitat fragmentation
- Nutrient loading
- Sedimentation
- Altered Hydrologic Regime
- Non-point source pollution (i.e., FIFRA-related runoff)

The agriculture multi-site strategy addresses stresses emanating from three general types of agriculture. Each general type may require specific or custom approaches:

- Combined Animal Feeding Operation (CAFOs)
- Row Crops
- Pasture

Strategic action can be considered in terms of restoration and prevention activities. Prevention activities concern runoff prevention. Both restoration and prevention activities invite cross-cutting partnerships with neotropical and game migrants, invasive species, fragmentation abatement, and compatible forestry incentives.

Multi-site strategies involving prevention action include:

- Identifying runoff areas in targeted watersheds
- Developing a sediment budget for targeted watersheds
- Develop TNC's roll as a source of credible information to relevant state and federal government sources; e.g., federal EPA, state DEQs, Soil and water agencies, and farm bureaus.
- Use roll as credible information source to initiate conversion disincentives at local, state, and federal regulatory and government levels.
- Link external relations and outreach activities with Compatible Forestry Initiative incentives

Multi-site strategies for agricultural restoration areas

- Identifying and partnering with existing programs, including but not limited to WRP, CRP, FWS, LWCF, Gulf Wings, DU, RC&D, NRCS
- Identifying restoration areas and best management practices (BMPs) for partnership involvement
- Promoting or supporting funds acquisition for FWS to restore agricultural lands
- Pursuing carbon sequestration on restoration/reforestation areas with conservation-centered carbon sequestration guidelines:

Action Items:

- Direct state and federal incentive programs towards PCA success; assess and ID strategic reforestation through existing programs.
- Pursue and direct disincentives to address conversion
- Actively participate in carbon sequestration implementation as well as rules and regulations.
- --coordinate runoff prevention items program w/ NRCS, state agencies

Fire

The Goal of the fire multi-site strategy is to restore the range of appropriate fire regimes where fire is a natural process at portfolio areas. The major stress addressed is alteration or removal of a natural fire regime, or inadequate or incorrect application of a prescribed fire practice. The greatest barrier to threat abatement is a misunderstanding on many levels of alteration of natural fire regime, as evident through the following sources:

- Lack of historic background or data of natural fire regimes
- Risk and liability issues/fear of loss of life, property, and wildland aesthetics
- Continuation of suppression-oriented management and policy

Restoration of a natural fire regime will occur in the public and private arenas. The multi-site fire restoration strategy should initiate fire restoration demonstration sites in both arenas; to do so, TNC must continue to build capacity for fire restoration, promote fire policy towards ecological restoration, educate policy makes as well as landowners and land managers. Additional external relations should promote contract burns for private landowners and investigate costshare efforts for burning. The multi-site strategy for this ecoregion will mirror the strategy and action of the national TNC fire restoration strategy, including adoption of modified measures of success:

- ID appropriate federal, state and local fire managers and ensure their education on the role of fire in maintaining biodiversity at those sites
- Restore fire to 25% of applicable portfolio conservation areas considered moderately to severely altered
- Participate in fire restoration demonstration projects at appropriate sites according to national plan.
- Promote fire restoration literature as an education tool for land managers and land owners.
- Incorporate standardized fire restoration and adaptive management protocols to appropriate portfolio conservation areas.

Roads and R-O-Ws/Road Construction

The goal of the roads/right of way (ROW) multi-site strategy is to prevent stresses caused by road/ROW construction by reducing road/ROW construction in targeted areas, and ensure roads/ROWs that are built and maintained in targeted areas are done so with the least impact possible. Stresses from road/ROW construction include:

- Habitat destruction
- Habitat fragmentation
- Sedimentation
- Altered Hydrologic Regime

- Non-point source pollution

Note that ROWs include all rights of way for transportation, utilities, and mineral extraction activities. The roads/ROW multi-site strategy is focuses on preventing additional road/ROW building in portfolio sites or applicable adjacent areas, and ensuring that roads/ROWs that are constructed with those areas minimally impact conservation targets. Much of the road/ROW strategy uses education and external affairs activities.
Prevention and minimal impact assurance will use

- Promotion and discussion of the ecoregional plan to identified partners, including
  - federal and state highway authorities,
  - state and local planning authorities,
  - heritage programs,
  - utilities entities
  - mineral extraction companies.
- Coordination with the compatible forestry initiative towards instituting best management practices (BMPs) when roadbuilding for forestry activities
- Use of access restrictions, where appropriate
- Establishment of TNC as reliable, science-based environmental data source to above audiences

There is opportunity for crossover of management responsibility here to the compatible forestry multi-site strategy and the fire multi-site strategy. Fire implementers will incorporate the roads/ROW strategy when working with stakeholders to educate and develop procedures for burning around utility and extraction ROWs. Compatible forestry initiative implementers will incorporate compatible road building and maintenance BMPS when working with public, private, and forest partners. There is further opportunity for crossover with the freshwater aquatics multi-site strategy in working with road/ROW stream crossings to ensure their accessibility in ephemeral, high-order, or headwater streams.

An immediate need for implementation of this multi-site strategy was realized in the planning for the I-69 corridor, which will run through the ecoregion. Strategy implementers will attempt to ensure I-69 impacts UWGCP portfolio sites minimally if at all, through preventative planning. Implementers will share the ecoregional plan's areas of significant biodiversity with all levels of appropriate planning entities and agencies.

Road Construction/ROW Action Items:

- Develop federal partnerships—esp. SENRLG
- Develop TNC's information lobbying capacity at the division and state level to all relevant partners. Develop MOUs for early preventative planning.
- Share PCAs with state heritage and DOTs,

Dams/Reservoirs

The goal of the Dams/Reservoirs multi-site strategy is to ensure no new dams, reservoirs, or impoundments are constructed in the ecoregion, and to promote a conservation regime at existing altered systems. The threats addressed through this multi-site strategy are:

- Altered Hydrologic Regime
- Habitat destruction/conversion
- Habitat fragmentation
- Thermal pollution

Prevention and compatible use of existing structure are again the two directions of action for this multi-site strategy. As a preventative measure, again a major element of this strategy is the establishment of TNC as a data source, and the use or preventative planning through promotion/sharing of the areas of significant biodiversity to all appropriate entities, including

- Levee boards,
- River and water authorities
- Drainage districts
- Regional planning groups

Plan implementers should first prioritize areas where new construction will be most damaging—i.e., where a new dam or reservoir would constitute a "killer threat." MOUs could be created for eligible priority areas to be purchased and transferred to federal entities to discourage new construction, currently a provision in federal regulations. A crossover to agricultural BLM action items exists here, in that BLH areas to be acquired and transferred to federal entities should be prioritized in an effort to discourage new reservoir sites. External relations should build cooperation with FWS towards this action item.

As an external relations activity, promotion of the economic benefits of alternative water use regimes should be initiated.

Additional crossover activity exists with the Roads/ROW Construction Multi-Site Strategy, in the promotion of TNC Areas of Significant Biodiversity and availability of TNC as an impartial reliable science-based information source. Preventative planning can be occur through involvement with the Southeast Natural Resource Leaders Group (SENRLG).

Working with existing structures should involve the identification of impoundments affecting priority areas of significant biodiversity, determining natural range and variation of instream flow, and finally working with impoundment authorities towards a flow restoration program.

Action items under the dams and reservoirs multi-site strategy include:

- Work with water/reservoir authority to restore natural range and variation of instream flows
- ID and manage for conservation areas slated for impoundment; prioritize PCAs for this planning.
- Investigate and determine water policy for each state; develop information lobbying capacity here as well.

Residential/Commercial Development

The goal of the residential/commercial development multi-site strategy is to promote sustainable development throughout the ecoregion. The threats addressed by this strategy are:

- Habitat destruction/conversion

- Habitat fragmentation
- Sedimentation
- Non-point source pollution
- Point-source pollution (sewage)

The success of this multi-site strategy lies primarily in preventative measures. As such, a number of partnership opportunities are available towards implementation.

- Tax incentives
- Forest Legacy Programs
- Zoning board influence
- Wildlife exemptions
- External relations and highest/best use category avoidance
- Local land trust development

Crossover exists in this strategy again with the external relations work done under the sustainable forestry strategy towards state-level development of forest legacy programs. Crossover also exists in preventative planning for Roads/ROWs that provide development access to priority areas. External relations are primarily focused on local, county and regional outreach: reclassification of property tax/assessment and zoning use of highest/best use formats; revising state, county or local tax incentives away from sprawl and towards urban redevelopment; property tax wildlife exemptions; and work with state agencies towards focused wildlife exemption incentives. Opportunities with local land trusts, in fostering or partnering, exist; assistance may also be available from state DEQ outreach offices, such as the Arkansas Watershed Advisory Group. In certain areas, it may be beneficial to promote TNC-friendly individuals towards zoning board seats.

Action items include

- Develop state forest legacy programs towards PCAs
- Address tax incentives/disincentives and additional opportunities for informational lobbying
- Identify existing local land trusts and watershed groups as well as areas where local land trusts or watershed groups would be beneficial.
- Identify areas where TNC members or partners can provide tangible benefits by sitting on zoning boards to tax boards.

Invasive Species

The goal of the invasive species multi-site strategy is prevent damage or conversion to native species and communities by minimizing invasive species' spread and exposure. Invasive species strategy addresses the following threats:

- Altered composition/structure
- Excessive Herbivory
- Altered Hydrologic Regime
- Altered Fire Regime

Multi-site management of invasive species will again take the form of both a preventative and active stewardship strategy. The species and their corresponding damage or potential damage from invasive species needs to be identified at areas of significant biodiversity; buffer areas may be required as well. The invasive species workgroup will identify these species and prioritize the conservation areas for action. At sites invasive species control measures will be instituted if the have not already. There exists an opportunity for strategic crossover again between the invasives and the fire restoration multi-site strategy. Preventative actions may also include external relations towards providing information to state agriculture, wildlife, and trade authorities on preventing certain invasive species from entering a state, and focused education of industry and wildlife professionals towards the use, release, or control of invasive species.

Action Items:

- Identify "bad exotics" – i.e., those altering community structure
- Identify portfolio conservation areas at risk from identified invasive species
- Determine distribution of invasives concerned
- Establish partners towards removal/prevention of invasives at PCAs
- Work with other multi-site strategies that address invasives

Data Gaps

Identification and conclusion of data gaps were determined to be a multi-site strategy by the implementation group as the lack of data in certain areas was seen as an impediment for action items under other strategies. The goal of the data gaps multi-site strategy is to identify and fill data gaps preventing the full or accurate execution of other multi-site strategies. The following data gaps were raised during the implementation meeting:

- Aquatic community type and flow requirements for small and large rivers
- Determine role of ground water and aquifer action in surface water related action items: specifically as it relates to agriculture and forestry to include withdrawal as well as point source/non-point source contribution factors. Determine effects of groundwater depletion on terrestrial and aquatic communities
- Identify invasives to be managed, determine extent and potential damage, distribution.
- Identify industrial forestry landholders in portfolio conservation areas
- Identify agricultural uplands composition, location, historic context; determine multi-site strategic implications, if any.
- Determine composition, saturation, application, structure, longevity of FIFRA–related runoff (i.e., any chemical regulated by FIFRA) and its effects on targeted species and communities. Determine Best Management Practices as necessary.
- Identify and fill data gaps that TNC's partners may have on sensitive areas as well as potential mitigation areas (i.e., provide federal, state and local transportation authorities science based data on TNC-identified areas of significant biodiversity towards prevention of fragmentation as well as reception of mitigation efforts).
- Inventory targets not meeting goals from ecoregional plan– primarily crayfish, mussels, and xeric sandhill plants. CBC staff and multi-site strategy leads should review plan and determine applicable targets.

- Determine extent of migratory bird data gaps and partner with relevant agencies/entities to address. Continue partnership with Lower Mississippi River Valley Joint Venture Group (LMRVJVG) Habitat evaluation/Landscape Analysis
- Fill data gaps ecoregion-wide that were identified in the planning process, including targets and viability. Seek additional funding or partnerships as necessary. Though important, this data gap should not prevent multi-site strategies from moving towards implementation.
- Identify additional partners towards multi-site strategy implementation including academic and local county, state, regional, and federal partners.
- As measures of success at portfolio sites will incorporate biodiversity health, threat abatement, and program capacity, determine data gaps for each three areas per site that are not filled by a multi-site strategy and work towards their conclusion.

Multi-Site Strategies Reference and Comparison Table

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Multi-Site Strategy
Compatible Forestry Initiative</td><td>Goal:
Manage all applicable viable portfolio sites through compatible forestry towards a targeted structure/composition within a functional landscape
Establish TNC credibility as a forestry stakeholder / player through data, meaningful forest product, and conservation results</td><td>Short-Term Objective:
Begin initiative; identify partners, choose demonstration sites and begin management actions; design monitoring protocol for results meaningful to partners.</td><td>Long-Term Objective:
Use demonstration sites in PNFLO, industrial, public lands to show compatible forestry is economically and ecologically feasible.</td></tr>
<tr><td>Threats addressed:
• Altered composition/structure
• Habitat destruction/conversion
• Habitat fragmentation
• Nutrient loading
• Sedimentation

Overall Action Items:
• Certification
• Compatible forestry
• Public lands management (fire, roads, forestry practices, liaison (MOUs),
• Demonstration sites</td><td>Year 1 Action Items:
• ID and categorize landholders in PCAs
• ID appropriate national level programs at state-level implementation and state-level program eligibility (i.e., forest legacy); initiate activities towards making compatible forestry economically attractive to private and industrial partners
• Develop relations with extension services
• ID criteria and monitoring protocol for meaningful data gathering and economic assessment input; initialize monitoring at demo site
• Begin development of compatible forestry initiative at 1 PCA; write business plan
• Initialize focused/useful economic assessment</td><td>Year 3 Action Items
• Attain functional compatible forestry initiative site representing each landowner group; public, industrial, PNIFLOs
• Implement tax/government incentives so that compatible forestry is more attractive to landowners
• Provide results of national-level cooperation in initiative
• Develop relationships with regional partners
• Have compiled initial 2 years of monitoring data towards economic assessment</td></tr>
</table>

Multi-Site Strategy: **Compatible Agriculture**	Goal Prevent soils and contaminants from entering water system. Prevent incompatible conversion. Pursue restoration/reforestation of agricultural lands.	Short-Term Objective • Develop specific agriculture action strategies (see below) and link initiative with compatible forest and aquatic strategies. • Establish compatible agriculture as desirable agricultural management option to identified partners; grow support for TNC as an agriculture partner/friend.	Long-Term Objective • Establish TNC as credible carbon sequestration entity for BLH restoration/ reforestation • Lead carbon sequestration efforts for conservation • Establish TNC as agricultural runoff / conversion solution source	Overall Action Items • Direct state and federal incentive programs towards PCA success; • Assess and ID strategic reforestation through existing programs. • Pursue and direct disincentives to address conversion and fragmentation • Actively participate in carbon sequestration implementation as well as regulations and standards-making.
	Threats Addressed • Habitat destruction/conversion • Habitat fragmentation • Nutrient loading • Sedimentation • Altered Hydrologic Regime • Non-point source pollution (FIFRA-related runoff)	Year 1 Action Items • Develop runoff prevention strategy; ID runoff prevention areas • Develop bottomland hardwood (BLH) restoration and reforestation (R&R) strategy; identify agencies and partners • Develop link to compatible forestry • Develop feasible carbon sequestration action plan and biodiversity parameters/ considerations • Ensure exported biodiversity specifications used in carbon sequestration policy • ID external affairs functions: strategic watershed review • Determine sediment budget and link information with appropriate partners, agencies • Export runoff prevention and BLH R&R strategies to appropriate partners, stakeholders • ID of preventative and R&R watersheds with sediment and nutrient budget and restoration characterization goals • ID of partners and business plan for approach	Year 3 Action Items • Show positive ecological influence in carbon sequestration guidelines • Establish working agreements or MOUs with local, state and federal agencies involved with BLH R&R efforts • Develop BLH R&R pilot sites in Identified areas with carbon sequestration elements. • Successful reduction in sedimentation and nutrification by amount determined in year 1 at target sites. • Have developed conversion strategy with active partnerships	

Multi-Site Strategy **Fire Restoration Program**	Goal Restore range of appropriate fire regimes where fire is a natural process to all applicable areas	Short-Term Objective • Build capacity for fire restoration • Reduce number of moderately to severely altered sites • Begin education and policy actions • Initiate cooperative programs	Long-Term Objective • Eliminate site status of moderately to severely altered • Show progress in education and policy arenas through MOUs, education attendance; show cooperative burn partners	Overall Action Items • Promote fire policy towards ecological restoration • Educate policy makers, landowners, land managers • Promote contract burns • Promote costshare efforts
	Threats Addressed • Alteration or removal of natural fire regime (habitat alteration) • Inadequate or incorrect application of a prescribed fire practice	Year 1 Action Items • Restore fire regime to 25% applicable portfolio sites considered moderately to severely altered • Enroll at least 3 participants from each private, public landowner representation in cooperative burning or education programs s	Year 3 Action Items • Restore fire to 50% of applicable portfolio sites considered moderately to severely altered; • by 5th year, to 100% of same. • Show MOUs or contracts	

Multi-Site Strategy **Roads/R-O-W Construction**	Goal Reduce road/ROW-based stresses through reduction in targeted areas, ensure road/ROWs that are built are maintained compatibly	Short-Term Objective Develop TNC's role as science-based info provider to targeted sources; ensure PCAs not damaged by Road/ROW construction	Long-Term Objective Divert any new road/ROW from PCAs; ensure existing roads/ROWs in PCAs are maintained compatibly	Overall Action Items • Develop TNC's role in I-69 planning and mitigation • Develop relationship with state DOTs • Comment on any proposed roads/ROWs affecting PCAs • Work with compatible forestry initiative to ensure logging roads and public roads in state/national forests are constructed maintained compatibly • Work with fire initiative to determine BMPs for prescribed burning around utility / extraction ROWs
	Threats Addressed • Habitat destruction • Habitat fragmentation • Sedimentation • Altered hydrologic regime • Nonpoint source pollution	Year 1 Action Items • Develop presence as science-based resource/partner to state DOTs and federal partners • Ensure TNC listed as concerned party for all ROW/road EISs near PCAs • Participate in federal joint preventive planning/mitigation effort • Establish MOUs w/ state DOTs towards receipt of mitigation consideration for other new roads/ROWs • Review procedure and enforcement of ecologically compatible BMPs concerning runoff by state; determine additional action as necessary • ID all stream crossing that inhibit fish movement	Year 3 Action Items • Management agreements with owners of all ROWs in PCAs • Establish TNC science to state DOTs, MOUs for recognition of PCAs • Crossover action with compatible forestry • In appropriate PCAs, ensure accessibility for large wide-ranging targets in preparation of reintroduction • Identify existing stream crossings that inhibit fish migration and retrofit • Work with DOT, federal partners to ensure new stream crossings are compatible	

Multi-Site Strategy **Dams / Reservoirs**	Goal Promote conservation regime in altered systems affecting PCAs Ensure no new impoundments	Short-Term Objective Bring ecological management regime to existing impoundments	Long-Term Objective Bring all existing PCA-related impoundments under ecological management Prevent any new impoundments to	Overall Action Items ID PCAs where new impoundments would be "killer threats" ID PCAs where current impoundments cause thermal pollution and flow issues Develop and execute MOUs for PCA-related impoundments;
	Threats Addressed • Altered hydrologic regime • Habitat destruction • Habitat fragmentation • Thermal pollution	Year 1 Action Items • Identify impoundments that could affect PCAs • Identify areas where impoundments are being considered that could affect PCAs • Develop ecological management MOUs for half of existing impoundments • Continue Development of TNC's role as science source and mediator in impoundment issues •	Year 3 Action Items • All ecological management MOUs developed • Use monitoring from ecologically-managed impoundments to promote further activity as necessary • Continue TNC's role as science-based info source/mediator; promote alternative water management regimes	

Multi-Site Strategy: **Residential/ Commercial development**	Goal Promote sustainable development throughout the ecoregion. Prevent development from threatening PCAs	Short-Term Objective Establish sustainable development as a priority for TNC; establish TNC as credible partner in topic	Long-Term Objective Show measurable influence in planning, education fields concerning sustainable development	Overall Action Items • Develop state forest legacy programs towards PCAs • Address tax incentives/disincentives an additional opportunities for local lobbying • Identify existing local land trusts and watershed groups; also areas where such entities would be beneficial. • Identify zoning board presence opportunities
	Threats Addressed • Habitat destruction/conversion • Habitat fragmentation • Sedimentation • Non-point source pollution • Point-source pollution (sewage)	Year 1 Action Items • Identify potential partners at all scales • Identify tax and zoning opportunities • Show influence to state forest legacy programs in AR, TX, OK, LA through compatible/sustainable measures • Identify tax incentive/disincentive opportunities and contacts in states; develop state/local/regional incentive/disincentive strategy • Identify existing local land trusts and watershed groups near/in all PCAs; begin/strengthen relationships • Assist in establishing new land trusts/watershed alliances where needed • Begin marketing watershed advisory group model to TX, OK, LA	Year 3 Action Items • Establish partnerships with land trusts and watershed alliances at related to half of all PCAs • Reduce tax unsustainable incentives; enhance sustainable development incentives; show progress towards eliminating "highest/best use" concept • Export watershed advisory group to other state governments; establish 1 additional state watershed advisory group or equivalent • Assist in placing partners or representatives on local zoning boards; establish influence on zoning boards in areas where PCAs are most at risk of incompatible development. • Involve national external affairs to raise awareness of issue and begin partnership/education at higher level.	

Multi-Site Strategy **Invasive Species**	Goal Prevent damage or conversion to native species and communities by minimizing invasives' spread and eliminating invasives at PCAs	Short-Term Objective Identify and begin elimination of invasives at all PCAs	Long-Term Objective Develop partnerships/programs to ensure exposure to invasives is minimized at all PCAs.	Overall Action Items • Identify "bad exotics" • Identify PCAs at risk • Determine distribution, extent of damage from exotics • Establish partners towards removal/prevention of invasives at PCAs • Work with other multi-site strategies that address issue
	Threats Addressed • Altered composition/structure • Excessive herbivory • Altered hydrologic regime • Altered fire regime	Year 1 Action Items Identify type and extent of invasives and damage at PCAs Initialize activity at all PCAs not already active in invasives control Establish ecological methods as preferred control where necessary Identify and propagate local partnerships in invasives control (e.g., LA's hogs)	Year 3 Action Items Positively influence state governments in invasive species control measures (e.g., TX parks and wildlife) Secure funding from state agencies towards control	
Multi-site Strategy **Data Gaps**	Goal Identify and conclude data gaps	Short-Term Objective Address data gaps identified in this iteration of ecoregional plan for UWGCP	Long-Term Objective Show significant progress, if not conclusion, to all data gaps listed in this iteration of plan	Overall Action Items See list in section in ecoregional plan

	Threats Addressed Conservation inaction at PCAs where data gaps occur	Year 1 Action Items • Fully describe aquatic communities • Identify invasives to be managed • Identify industrial forestry landowners, PNIFLOs in PCAs • Characterize uplands agriculture • Characterize/complete data gaps on sensitive areas for partners; include potential mitigation areas • Inventory targets not meeting goals from ecoregional plan; primarily crayfish, mussels, xeric sandhill plants • Characterize target crayfish habitat and life ecology • Determine level/extent migratory bird gaps and partner with relevant agencies • Fill data gaps relating to target • Identify partners on all levels as called for in above multi-site strategies	Year 3 Action Items • Determine role of groundwater and aquifer action in surface water related action items, specifically related to agriculture and forestry • Determine effects of GW depletion on terrestrial and aquatic communities • Determine composition, saturation, application, structure, longevity of FIFRA related runoff and BMPs	

DoD Multi-Site Considerations

Findings

The initial mission requirements of many DoD facilities in the area, particularly ammunition plants and depots, placed them in remote areas near natural bodies of water. As the ecoregion's economic products changed or expanded and local populations grew, DoD facilities in the ecoregion became strongholds for biodiversity. During the course of ecoregional planning for The Nature Conservancy, almost every DoD facility in the ecoregion was realized as an area of significant biodiversity and thus included as an ecoregional portfolio site[2].

Further, each facility reported in its INRMP outstanding or unique natural feature. Further, many elements important to facility natural resource programs have counterparts in other bases. For example, Pine Bluff Arsenal (PBA) notes a healthy and diverse bat population; the supporting natural communities, conservation elements, and physiography also occur on Camp Minden Training Site[3] (CMTS) and Barksdale Airforce Base (BAFB). Also, all three bases contain some of the last, best examples of unfragmented woodland communities.

Management Considerations and Recommendations

Applicability

This Multi-Site Management Plan will assist base Natural Resource Managers (NRMs) in planning at their own facilities through use of an ecosystem perspective, as well as availability of ecosystem data and partners. The ecosystem data and partners identified also open the plan up to coordination with bases outside the ecoregion that may share similar natural communities or targets; for example, bases in the Eastern Gulf Coastal Plain and the Gulf Coast Prairies and Marshes have Red Cockaded Woodpecker as an element target, and all also incorporated prescribed fire into their base management regimes.

Strength of INRMPS

As stated, the INRMPS reviewed from PBA, BAFB, and CMTS are well-written, comprehensive, and based on sound science and management. In assembling this Multi-Site Management Plan it has become clear that facilities' most versatile, powerful tool to implement conservation action and secure additional funds for natural area management and programs is the

[2] The major facility not specified as an ecoregional portfolio site was the Red River/Lonestar facility because additional data in the form of a base INRMP or Natural Area assessments and surveys were unavailable for review towards this Multi-Site Management Plan. On preliminary assessment, the site contains several potential natural areas and may contain ecoregional target occurrences as well. RRAD/LSAP could be considered an area of significant biodiversity once essential data is collected. As this plan is designed for adaptive management, RRAD/LSAP could be determined to be an area of significant biodiversity and receive applicable management consideration once appropriate data and documentation is received.

[3] CMTS was previously known as the Louisiana Army Ammunition Plant (LAAP). Much of the Natural Resource data on the site is referenced under the previous name.

base INRMP. Facilities Resource Managers and their teams may benefit from reviewing each other's INRMPs towards common management goals and management styles. Natural Resource managers can further utilize other facilities INRMPS in coordination with this plan to initiate or modify similar or reciprocal ecoregional programs at their own facilities.

Base INRMPS for PBA, BAFB, and CMTS are attached to this plan as data support towards this goal. Additional contact and coordination between facility Natural Resource offices is also encouraged[4]. Areas of similarity and program comparison include prescribed fire, game management, natural element monitoring, and public/base outreach interaction.

INRMPs offer great opportunity to create leverage for funding or initiating natural resource programs at bases; coordination and review of other base INRMPs within an ecoregion expand that leverage further.

It is recommended that when facilities update or modify their INRMPs they incorporate the ecoregional aspects of this Multi-Site Management Plan, drawing on its ecosystem approach and ecosystem-level of data. This plan can further be used as an adaptive management tool through data support and ecosystem perspective, as the plan reflects current base natural resource targets as well as ecoregion-wide status and assessments.

Multi-Site Management Plan as Data and Management Solution Conduit

As critical components of ecoregional biodiversity, the opportunity exists to coordinate efforts not only between nongovernmental entities, but between active DoD facilities as well. Many base Natural Resource Managers (NRMs) have formed productive and lasting partnerships with TNC, and though most NRMs know their counterparts at other bases, they have not had the opportunity to share data findings, or management challenges and solutions.

A management partner opportunity also exists to use this Multi-Site Management Plan towards partnership enrichment among and between governmental landowners within the ecoregion. TNC has partnerships with the USACE, USFWS, USFS, and state Game and Fish agencies, this Multi-Site Management Plan and the supporting INRMPs can be further used to form new and strengthen existing partnerships between the governmental agencies mentioned. The TNC version of this ecoregional plan will be made available to federal and state partners towards this end.

Management Models

Two management models are used with success in UWGCP DoD facilities. It is recommended that other bases in the ecoregion, as well as bases throughout the DoD's operating range adopt one of these management models if not currently utilized. Both models work well at facilities that are undergoing mission change, increases in use or training pressure. Critical to both models

[4] Options to make such access formalized and accessible are being considered by TNC and DoD as one of the implementation measures to this plan.

is the identification of natural areas and components within the areas targeted for conservation management.

Both models provide clear direction towards conservation management, and leverage for funding Natural Resource action on base.

Tiered Land Classification Model

The Tiered Land Classification Model is used by TNC's Louisiana Field Office staff on TNC originated INRMPs. This model classifies land areas by category and assigns incremental levels of management accordingly (Weber, 2002). A summary of this system follows:

Classification	Description	Management Parameters
Type 4: Natural Areas	Exemplary Natural Areas or sites that are restorable with minimal effort, i.e., nearly undisturbed areas that most closely resemble presettlement natural ecology.	No new infrastructure; resource extraction only during restoration phase; restricted access; ecological management only.
Type 3: Demonstration Areas	Military training, moderately disturbed areas that retain most of the components of the estimated presettlement natural community, restorable.	Restore/maintain natural ecological conditions while accommodating moderate/sustainable use or resource extraction.
Type 2: Intensive Management Areas	Areas not considered ecologically restorable without significant effort; many elements of presettlement natural community absent	Timber and mineral production/extraction; military training/bivouac sites
Type 1: Permanently Converted/Restricted Areas	Permanently cleared, developed, mowed areas.	Natural Resource Management not applicable; however opportunities to showcase natural elements (e.g., native plant garden) exist.

This system allows NRMs to focus on prioritized conservation action, and to provide clear detailed program parameters to staff as well as funding requirements to base authorities. For example, proper management of a Tier 4 natural area may involve use of a prescribed fire program and buffer areas composed of Tier 3 and Tier 2 areas, which could afford revenue creating compatible land management efforts.

Detailed System Model

Facilities with detailed Natural Area Assessments and changing missions may want to consider the detailed systems model used at PBA. This system manages for individual conservation targets as well as natural systems based on the specific identified natural areas. This model is highly useful for managing a suite of species or specific areas towards restoration. Suite or guild management and restoration management lead to comprehensive ecosystem management while providing the NRM freedom to prioritize conservation action and leverage funding for resource programs. For example, PBA's crayfish management recommendations encompass action on aquatic and terrestrial areas. In another example, management recommendations for breeding and migratory birds are directly involve management of PBA's upland pine matrix community; providing a variety of program opportunities. This in turn provides data and leverage for PBA's Pine Savannah restoration project, which incorporates a prescribed fire program.

Measures of Success

The final draft of this plan will include the results of the UWGCP implementation meeting as well as the comments/review results of the base NRMs. As such measures of success at the ecosystem level can be used by NRMs towards fulfillment and leverage of their own programs.

Naval Space Command, Lewisville, Arkansas

NSC Lewisville was visited and the INRMP reviewed in preparation for this Multi-Site Management Plan. Active participation in this Multi-Site Management Plan was not pursued at NSC Lewisville, though they are not discouraged from implementing any findings or participating in any ecoregional activities. NSC Lewisville's INRMP was very good and staff interested in biodiversity conservation, however the size and mission of the facility preclude it from any regional-scale conservation activity.

Ecoregional Boundary and Management Decisions

The management regime of certain areas of the UWGCP will be changed due to various Terrestrial community requirements, which are described below.

Bayou Bartholomew. Previously the Bayou Bartholomew watershed was divided by the ecoregional boundary between the UWGCP and the Mississippi River Alluvial Plain (MSRAP). Until this boundary is officially changed, UWGCP will be considering the entire Bayou Bartholomew watershed as defined by EPA Hydrologic Unit Catalog number 8040205 under its management strategy. UWGCP conservation planning in this watershed will be coordinated with management efforts in MSRAP.

Longleaf Pine. An 420-square-mile piece of longleaf pine community in Bienville Parish, Louisiana, was previously included in the UWGCP. This area contains viable longleaf pine, xeric woodland, baygalls and bayhead communities, and Louisiana Pine Snake, Yellow Brachycercus mayfly, Red-Cockaded Woodpecker, Soxman's milk-vetch, and Mohlenbrock's Umbrella-sedge occurrences. As the defining physiographic feature between upper and lower gulf coastal plains, it was determined that this longleaf pine community should be managed under the Lower West Gulf Coastal Plain's conservation strategies.

Red River West. The Red River and its drainage within HUCs 11140101, 11140103, 11140102, and 11140105 will not be managed under this ecoregional plan. This area of the Red River is more closely aligned with the higher stream reaches upriver and the communities are more aligned with the neighboring ecoregion. Aquatic occurrences in this reach are more representative of upstream communities and are not typical of the Red River in the UWGCP (See Appendix 2: Maps).

In an effort to promote management consistency across ecoregional lines, and recognizing that some communities and portfolio conservation areas are shared by ecoregions, UWGCP planners have made an effort to delineate those areas and work with surrounding ecoregions to jointly form and implement conservation strategies. Those areas include:

WGCP	UWGCP
Central Sabine National Forest	Davy Crockett National Forest (RCW cluster)
Weches Glades	Sabine National Forest (RCW cluster)
Angelina River Bottoms, West	Jackson/Bienville Wildlife Management Area
Long King Creek	Lower Trinity River Complex

Conservation Goals: Methodology Issues

Use of EOs. Expert teams used lists of state tracked, State ranked, federally listed, and globally ranked species to create target lists, the results of which were used to query state heritage data for element occurrences (EOs). The ecoregional planning conceptual process required the results of these EO requests to be analyzed for viability, and expert teams would then use viable EOs as the foundation from which to build conservation portfolio sites. Please see Appendix 3, Data Management Plan/Methodology for a detailed explanation of the process. Please see Appendix 10 for a list of expert teams.

Significant EO-related data gaps related to state heritage program data were recognized during the viability process. Common data gaps encountered included data missing on individual elements or occurrences, tracking inconsistencies between participating states, or the obsolescence of EOs (i.e., last observation over 20 years). Please see Appendix 4, Data Gaps and implications section for a full discussion.

Overall all planning teams attempted to set quantitative conservation goals. Target goals that defaulted to "all viable" were then given a minimum amount of 5 for nonendemic and 10 for endemic elements. In the rollout data, any conservation targets retaining an "all viable" goal were changed to the actual number of viable goals found.

When creating the portfolio conservation areas for the UWGCP, EOs were used as a threshold for consideration and as a measurement of the site. The primary selection factor for portfolio conservation areas was the ability to capture an ecological function, not simply a cluster of viable EOs. However, monitoring of the EOs at these ecologically functional sites will provide a measure of success for plan and site conservation implementation.

Due to the age and accuracy of heritage EO data, approximately 800 proto-EOs were generated based on technical team experience at a certain portfolio conservation area or citing from relevant literature. Initial proto-EOs were created for obsolete EOs where technical experts could vouch for their viability. Additional proto-EOs were built throughout the site selection process as the question "what other elements occur at this site?" was posed. Proto-EOs were generated during the initial site selection meeting and refined during both portfolio conservation area reviews following that session.

Species distribution during target selection, and goal setting was derived from initial state heritage EO reports or ABI Natureserve data. Some distribution data was weighted according to an occurrence's global rank, as distribution data may not accurately reflect the abundance of a species; for example, though Red Cockaded Woodpeckers are considered widespread in distribution, they are either very rare and local throughout its range, or found locally (G3). Further, the Woodpecker is federally listed as endangered, yet its distribution is ranked as widespread.

Many of the portfolio sites, if properly managed, will provide habitat for species currently extirpated at those sites and possibly in the region. Such management occurs at the site

conservation plan level, but effort should be made in future iterations of this plan to identify, discuss, and manage for those extirpated elements. Further, some sites or parts of sites were created as "placeholder" sites if: insufficient data for habitats or species existed; an element occurrence was non-viable or unverified, yet experts knew of adjacent viable habitat for that element not yet recorded; or if habitat or type locality indicated restoration possibilities for elements. The identity and extent of permanence of these sites will become evident during each site conservation planning event.

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List of Appendices

Appendix 1

Rollout Reports

Viable Conservation Target Occurrences - Goals (Summary)

Conservation Target Portfolio Occurrences by Taxa Type

Viable Target Occurrences captured by Conservation Areas

Viable Target Occurrences

Conservation Targets and Conservation Areas – Unknown Viability

Target Occurrences: Unknown Viability and Goals

Stresses and Sources of Stress by Site

UWGCP Viable Conservation Target Occurrences - Progress Toward Goals

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
ICMAL15180	*Fallicambarus petilicarpus*	CRAYFISH	G1	10			
ICMAL15190	*Fallicambarus gilpini*	CRAYFISH	G1	10			
ICMAL16010	*Bouchardina robisoni*	CRAYFISH	G1	5			
IMBIV07010	*Arkansia wheeleri*	OUACHITA ROCK-POCKETBOOK	G1	5	2	3	1
IMBIV24020	*Leptodea leptodon*	SCALESHELL MUSSEL	G1	5		1	
IMBIV37020	*Potamilus amphichaenus*	TEXAS HEELSPLITTER	G1	5	1		1
IMBIV39050	*Quadrula fragosa*	WINGED MAPLELEAF	G1	5	2		2
PDBRA1N1W0	*Lesquerella pallida*	WHITE BLADDERPOD	G1	5	5	1	1
PDMAL0H0E0	*Hibiscus dasycalyx*	NECHES RIVER MALLOW	G1	5	3	1	2
ICMAL15040	*Fallicambarus strawni*	CRAYFISH	G1G2	10			
IILEYC0310	*Papaipema eryngii*	RATTLESNAKE-MASTER BORER MOTH	G1G2	5	1		1
IMBIV31010	*Obovaria jacksoniana*	SOUTHERN HICKORYNUT	G1G2	10	4	5	4
IMBIV21150	*Lampsilis powellii*	ARKANSAS FATMUCKET	G1G2	5	2		2
IMBIV35270	*Pleurobema riddellii*	LOUISIANA PIGTOE	G1G2	5	1		1
ICMAL51020	*Faxonella blairi*	CRAYFISH	G2	5			
ICMAL11710	*Orconectes maletae*	CRAYFISH	G2	5			
ICMAL51040	*Faxonella creaseri*	CRAYFISH	G2	8			
ICMAL15020	*Fallicambarus jeanae*	CRAYFISH	G2	5			

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
IIPLE0B180	*Leuctra paleo*	ARKANSAS NEEDLEFLY	G2	10			
IIODO32160	*Somatochlora margarita*	TEXAS EMERALD DRAGONFLY	G2	8		6	
IMBIV47020	*Villosa arkansasensis*	OUACHITA CREEKSHELL	G2	5	2	12	2
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	5	13		3
IMBIV10010	*Cyprogenia aberti*	WESTERN FANSHELL	G2	5	4		3
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	8	39		2
PDBRA1L020	*Leavenworthia aurea*	GOLDEN GLADE CRESS	G2	12		41	
PDAST5X070	*Liatris cymosa*	BRANCHED GAY-FEATHER	G2	8	3		0
PMERI01040	*Eriocaulon koernickianum*	SMALL HEADED PIPEWORT	G2	5	4	1	
PDCAR15010	*Geocarpon minimum*	GEOCARPON	G2	5	2	31	
PDGEN01020	*Bartonia texana*	TEXAS SCREWSTEM	G2	5	2	1	1
PDLAU07020	*Lindera melissifolia*	PONDBERRY	G2	5		1	
ICMAL14E90	*Procambarus regalis*	CRAYFISH	G2G3	10			
IICOL42010	*Nicrophorus americanus*	AMERICAN BURYING BEETLE	G2G3	5	1	49	
IMBIV08010	*Cumberlandia monodonta*	SPECTACLECASE	G2G3	5	1		1
PMLIL200X0	*Trillium texanum*	TEXAS TRILLIUM / WAKEROBIN	G2G3	12	2	7	1
AAAAD12320	*Plethodon kisatchie*	LOUISIANA SLIMY SALAMANDER	G2G3	6		3	
PDRAN0M020	*Thalictrum arkansanum*	MEADOWRUE	G2Q	12	6	13	
PDROS0H5G0	*Crataegus warneri*	WARNER'S HAWTHORNE	G2Q	8		9	

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
PDBRA1L080	*Leavenworthia texana*	TEXAS GOLDEN GLADE CRESS	G2T1	5	1		1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	5	13	107	4
ABPBX91050	*Aimophila aestivalis*	BACHMAN'S SPARROW	G3	5	3	2	2
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	G3	8	10	8	10
AFCJB28540	*Notropis hubbsi*	BLACKNOSE SHINER	G3	10	4		4
AFCQC01040	*Ammocrypta clara*	WESTERN SAND DARTER	G3	6	1	1	
IMBIV39040	*Quadrula cylindrica*	RABBITSFOOT	G3	5	1	14	
IMBIV35090	*Pleurobema cordatum*	OHIO PIGTOE	G3	5	1	9	1
PDSCR01130	*Agalinis auriculata*	EARLEAF FALSE FOXGLOVE	G3	5	1	1	
PMLIL1S030	*Schoenolirion wrightii*	SUNNYBELL	G3	5	13	5	
PMXYR01070	*Xyris drummondii*	DRUMMOND'S YELLOW-EYED GRASS	G3	5			
PDROS03040	*Agrimonia incisa*	INCISED AGRIMONY	G3	5		1	
PDMAL0A020	*Callirhoe bushii*	BUSH'S POPPY MALLOW	G3	5		3	
PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	G3	5	13	21	
PMORC0Q0F0	*Cypripedium kentuckiense*	SOUTHERN LADY'S SLIPPER	G3	10	4	12	
PDFAB0F8C0	*Astragalus soxmaniorum*	SOXMAN MILK-VETCH	G3	5	9	26	5
PDFAB08080	*Amorpha laevigata*	SMOOTH INDIGOBUSH	G3	5			
PDBRA2G0R0	*Streptanthus maculatus*	CLASPING JEWELFLOWER	G3	10			
PDBRA1N020	*Lesquerella angustifolia*	THREE-LEAVED BLADDERPOD	G3	10		36	

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
PDAST7K060	*Prenanthes barbata*	BARBED RATTLESNAKE ROOT	G3	8	4	8	1
PDAST5X0X0	*Liatris tenuis*	SLENDER GAY-FEATHER	G3	5		2	
PDAST2L0E0	*Coreopsis intermedia*	GOLDEN WAVE TICKSEED	G3	5	5	10	
PMCYP061G0	*Cyperus grayioides*	ILLINOIS FLATSEDGE	G3	5	13	13	
PMCYP033K0	*Carex decomposita*	CYPRESSKNEE SEDGE	G3	5	1	3	1
PDCAR0U1V0	*Silene subciliata*	LOUISIANA CATCHFLY	G3	5		4	
PDFAB080C0	*Amorpha paniculata*	PANICLED INDIGOBUSH	G3?	5	1	8	1
ICMAL14560	*Procambarus geminus*	CRAYFISH	G3G4	6		2	
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	G3G4	8	5	5	3
AFCBA01050	*Atractosteus spatula*	ALLIGATOR GAR	G3G4	5	1		1
AFCJB53010	*Macrhybopsis aestivalis*	SPECKLED CHUB	G3G4	5	3		3
AMACC08020	*Corynorhinus rafinesquii*	SOUTHEASTERN BIG-EARED BAT	G3G4	5	3	2	3
AMACC01030	*Myotis austroriparius*	SOUTHEASTERN MYOTIS BAT	G3G4	5		9	
IMBIV38040	*Ptychobranchus occidentalis*	OUACHITA KIDNEYSHELL	G3G4	5		18	
PDSAX0P060	*Parnassia grandifolia*	GRASS-OF-PARNASSUS	G3G4	5			
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	5	11	16	11
IMBIV39041	*Quadrula cylindrica cylindrica*	RABBITSFOOT	G3T3	5	4		
AAABH01010	*Rana areolata*	CRAWFISH FROG	G4	5	4	4	4
ABPBXA0030	*Ammodramus henslowii*	HENSLOW'S SPARROW	G4	5	2		2

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	5	7		7
ICMAL14500	*Procambarus elegans*	CRAYFISH	G4	5	2	2	
ICMAL51010	*Faxonella beyeri*	CRAYFISH	G4	5	1	3	
ICMAL15090	*Fallicambarus caesius*	CRAYFISH	G4	10			
AFCNB04270	*Fundulus blairae*	WESTERN STARHEAD TOPMINNOW	G4	5	3	10	3
AFCKA02040	*Noturus eleutherus*	MOUNTAIN MADTOM	G4	5	2	6	2
AFCJB28160	*Notropis bairdi*	RED RIVER SHINER	G4	5	1		1
AFCFA01020	*Alosa alabamae*	ALABAMA SHAD	G4	4	11		2
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	5	5	9	5
AFCAA02020	*Scaphirhynchus platorynchus*	SHOVELNOSE STURGEON	G4	5	3	5	3
AFCJB28140	*Notropis atrocaudalis*	BLACKSPOT SHINER	G4	5	4	10	4
IIEPH09010	*Brachycercus flavus*	YELLOW BRACHYCERCUS MAYFLY	G4	5			
AMALE1010	*Bos bison*	AMERICAN BISON	G4	2			
IMBIV13010	*Ellipsaria lineolata*	BUTTERFLY	G4	5	1	8	
PDVAL04050	*Valerianella florifera*	CORNSALAD	G4	5		1	
PDAST96020	*Tetragonotheca ludoviciana*	LOUISIANA SQUARE-HEAD	G4	5	4		1
PDSAX0P010	*Parnassia asarifolia*	KIDNEYLEAF GRASS-OF-PARNASSUS	G4	5	1		1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	5	12	1	12
PDCUC0A080	*Cucurbita texana*	TEXAS GOURD	G4?	5			

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
ABNNM08102	*Sterna antillarum athalassos*	INTERIOR LEAST TERN	G4T2	5	1	15	1
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	5	10	3	7
ABNKC04010	*Elanoides forficatus*	SWALLOW-TAILED KITE	G5	5			
AFCJB28870	*Notropis shumardi*	SILVERBAND SHINER	G5	2	1	1	1
AFCJB28650	*Notropis maculatus*	TAILLIGHT SHINER	G5	2	3	3	3
AMAJF05010	*Spilogale putorius*	EASTERN SPOTTED SKUNK	G5	5	1		1
AMAJB01010	*Ursus americanus*	AMERICAN BLACK BEAR	G5	4	1		1
IMBIV14100	*Elliptio dilatata*	SPIKE/LADYFINGER	G5	5	3	6	
PDAST0T2L4	*Aster puniceus var. scabricaulis*	ROUGH-STEMMED ASTER	G5T2	8	2	8	0
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	42	41	1	39
CEGR038535	*Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS	NA	5	2		1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	15	11		10
CEGR051010	*Cross timbers oak forests and woodlands*	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	10	4		3
CEGR052010	*Crosstimbers tallgrass clay prairies*	CROSSTIMBERS TALLGRASS CLAY PRAIRIES	NA	10		1	
CEGR058010	*Great plains herbaceous aquatics*	GREAT PLAINS MARSHES AND OPEN PONDS	NA	6			
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	4	15		15
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	70	24	4	21

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	23	61	10	42
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	54	52	5	50
320 series	*Southeastern coastal plain upland longleaf pinelands*	SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS	NA	6	3	1	2
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	75	80	11	69
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	55	38	6	37
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	23	72	31	35
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	22	22	1	18
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	50	57	1	45
CEGR034010	*Southeastern coastal plain upland depression forested ponds*	SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS	NA	20	2		2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	70	42	8	38
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	35	15		14
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	15	15		13

Element Code	Scientific Name	Common Name	Global Rank	Goal	# of Viable Occurrences in Portfolio	# of Unknown Occurrences	# of Non-heritage Occurrences
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	52	21	18	3
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	60	50	8	44
CEGR035730	*Southeastern coastal plain circumneutral/basic upland forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS	NA	52	2		2
CEGR035040	*Southeastern coastal plain nepheline syenite glades and barrens*	NEPHELINE SYENITE HERBACEOUS GLADES	NA	2	2		2
CEGR035030	*Southeastern coastal plain salt glades and barrens*	SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS	NA	14	11		4
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	20	15		11
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	40	66		66

Conservation Target Portfolio Occurrences

Scientific Name / Conservation Area	Common Name	Viable Occurrences
Amphibian		
Hyla avivoca	**BIRD-VOICED TREEFROG**	
2 Lorance Creek / Big Lake		2
17 Poison Springs		1
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
27 Bayou Dorcheat		1
37 Bodcau		1
49 Barksdale & Ammo Plant		2
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
58 Canisnia Lake / Bayou Pierre		1
Rana areolata	**CRAWFISH FROG**	
4 Pine Bluff Arsenal		1
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
35 Caney District, Caney Unit - Kisatchie National Forest		1
49 Barksdale & Ammo Plant		1
Bird		
Aimophila aestivalis	**BACHMAN'S SPARROW**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2
35 Caney District, Caney Unit - Kisatchie National Forest		1
Ammodramus henslowii	**HENSLOW'S SPARROW**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2
Limnothlypis swainsonii	**SWAINSON'S WARBLER**	
2 Lorance Creek / Big Lake		1
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1

Scientific Name	Common Name	Conservation Area	Viable Occurrences
		35 Caney District, Caney Unit - Kisatchie National Forest	1
		37 Bodcau	1
		49 Barksdale & Ammo Plant	2
		56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	1
Picoides borealis	**RED COCKADED WOODPECKER**		
		12 Ross Foundation	2
		22 Seven Devils	1
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	2
		37 Bodcau	1
		49 Barksdale & Ammo Plant	3
		70 Northern Sabine National Forest	1
		75 Davy Crockett National Forest	1
		77 Sam Houston National Forest	2
Sterna antillarum athalassos	**INTERIOR LEAST TERN**		
		45 Red River Macrosite, North Highlands, Gilliam-1	1

Community

Arundinaria gigantea ssp. Gigantea shrubland	**GIANT CANE SHRUBLAND**		
		4 Pine Bluff Arsenal	1
		10 Little River from Glover River to Millwood Lake	1
		16 Nacatoch Ravines	1
Coastal plain upland pine and pine-hardwood forests	**COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS**		
		1 Granite Mountain / Gillam Park	1
		2 Lorance Creek / Big Lake	1
		3 Nepheline Syenite Glades	1
		4 Pine Bluff Arsenal	1
		5 Saline River	1

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
7	Terre Noire	1
8	DeQueen / Dierks Glade Systems	1
10	Little River from Glover River to Millwood Lake	1
12	Ross Foundation	1
13	White Cliffs Natural Area	1
14	Saratoga / Columbus / Washington Blackland Prairies	1
16	Nacatoch Ravines	1
17	Poison Springs	1
18	Palmetto Flats	1
20	Lower Ouachita	1
22	Seven Devils	1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	1
25	Atlanta State Recreation Area	1
26	Sulfur River Wildlife Management Area	1
27	Bayou Dorcheat	1
28	Miller County Sandhills	1
30	Daingerfield State Park	1
31	Bayou Bartholomew	1
33	Union Wildlife Management Area	1
34	Caney District, Corney Unit - Kisatchie National Forest	1
35	Caney District, Caney Unit - Kisatchie National Forest	1
37	Bodcau	1
38	Caddo Lake Complex	2
40	Mill Creek Ranch	1
49	Barksdale & Ammo Plant	1
50	Tyler State Park	1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	1
57	Lake Athens Bogs	1
61	Ham Creek - Mt. Enterprise	1

Scientific Name / Conservation Area	Common Name	Viable Occurrences
62 Fosterville Forest		1
64 Camp Bette Perot		2
69 Crystal Lake Tract		1
70 Northern Sabine National Forest		1
75 Davy Crockett National Forest		1
Cross timbers oak forests and woodlands	**CROSS TIMBERS OAK FORESTS AND WOODLANDS**	
54 Purtis Creek State Recreation Area		1
60 Tolar Ranch		1
63 Burkitt Foundation, Gus Engling Wildlife Management Area		1
64 Camp Bette Perot		1
Eastern wide ranging open marshes and ponds	**EASTERN WIDE RANGING OPEN MARSHES AND PONDS**	
2 Lorance Creek / Big Lake		1
10 Little River from Glover River to Millwood Lake		1
16 Nacatoch Ravines		1
17 Poison Springs		1
20 Lower Ouachita		1
22 Seven Devils		1
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
26 Sulfur River Wildlife Management Area		1
27 Bayou Dorcheat		2
40 Mill Creek Ranch		1
Eastern wide-ranging shrub swamps	**EASTERN WIDE-RANGING SHRUB SWAMPS**	
5 Saline River		4
16 Nacatoch Ravines		1
17 Poison Springs		5

Scientific Name	Common Name	Conservation Area	Viable Occurrences
		22 Seven Devils	1
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	1
		26 Sulfur River Wildlife Management Area	1
		27 Bayou Dorcheat	1
		28 Miller County Sandhills	1
Juniperus ashei dry chalk outcrop woodland	**ASHE'S JUNIPER DRY CHALK OUTCROP WOODLAND**		
		13 White Cliffs Natural Area	1
Quercus muehlenbergii - schizachyrium scoparium dry calcareous woodland	**CHINQUAPIN OAK - DURAND OAK / FRAGRANT SUMAC / ROUGH BLAZINGSTAR - MEADOW GARLIC - LITTLE BLUESTEM WOODLAND**		
		13 White Cliffs Natural Area	1
Small stream forests	**SMALL STREAM FORESTS**		
		1 Granite Mountain / Gillam Park	1
		3 Nepheline Syenite Glades	1
		4 Pine Bluff Arsenal	5
		5 Saline River	2
		10 Little River from Glover River to Millwood Lake	2
		12 Ross Foundation	1
		15 Weyerhaeuser Tiak Land Swap	1
		16 Nacatoch Ravines	1
		17 Poison Springs	1
		19 Bois D'Arc	1
		20 Lower Ouachita	4
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	34
		25 Atlanta State Recreation Area	1
		26 Sulfur River Wildlife Management Area	1

Scientific Name / Conservation Area		Common Name	Viable Occurrences
	27 Bayou Dorcheat		1
	29 Cornie Creek Bottoms		1
	31 Bayou Bartholomew		2
	33 Union Wildlife Management Area		1
	34 Caney District, Corney Unit - Kisatchie National Forest		3
	35 Caney District, Caney Unit - Kisatchie National Forest		1
	37 Bodcau		2
	43 Minden Unit of Kisatchie National Forest		5
	49 Barksdale & Ammo Plant		1
	50 Tyler State Park		1
	55 Kickapoo Creek Riparian Forest		1
	57 Lake Athens Bogs		1
	63 Burkitt Foundation, Gus Engling Wildlife Management Area		1
	67 Tonkawa Sandhills/Naconiche Creek		1
	70 Northern Sabine National Forest		1
	75 Davy Crockett National Forest		1
Southeastern coastal plain backswamp / slough floodplain forests		**SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS**	
	2 Lorance Creek / Big Lake		1
	4 Pine Bluff Arsenal		4
	5 Saline River		1
	9 Western Saline		1
	10 Little River from Glover River to Millwood Lake		13
	16 Nacatoch Ravines		2
	18 Palmetto Flats		1
	19 Bois D'Arc		1
	20 Lower Ouachita		1
	22 Seven Devils		1

Scientific Name	Conservation Area	Common Name	Viable Occurrences
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		5
	26 Sulfur River Wildlife Management Area		3
	27 Bayou Dorcheat		1
	34 Caney District, Corney Unit - Kisatchie National Forest		1
	35 Caney District, Caney Unit - Kisatchie National Forest		1
	36 Bayou DeLoutre		1
	37 Bodcau		4
	38 Caddo Lake Complex		5
	44 Upper Big Sandy Creek		2
	48 Upper Sabine River Complex		3
	49 Barksdale & Ammo Plant		1
	56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
	57 Lake Athens Bogs		1
	58 Canisnia Lake / Bayou Pierre		1
	59 Black Lake Bayou & Red River Salines		1
	70 Northern Sabine National Forest		1
	75 Davy Crockett National Forest		1
	78 Lower Trinity River		2
Southeastern coastal plain baygalls and bayheads		**SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS**	
	2 Lorance Creek / Big Lake		1
	4 Pine Bluff Arsenal		5
	5 Saline River		2
	12 Ross Foundation		11
	17 Poison Springs		11
	20 Lower Ouachita		2
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		3
	27 Bayou Dorcheat		1

Scientific Name	Conservation Area	Common Name	Viable Occurrences
	28 Miller County Sandhills		1
	30 Daingerfield State Park		1
	31 Bayou Bartholomew		1
	37 Bodcau		1
	38 Caddo Lake Complex		3
	51 Schoolhouse Springs		1
	61 Ham Creek - Mt. Enterprise		1
	67 Tonkawa Sandhills/Naconiche Creek		1
	70 Northern Sabine National Forest		3
	77 Sam Houston National Forest		1
Southeastern coastal plain bottomland hardwood forests		**SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS**	
	2 Lorance Creek / Big Lake		1
	4 Pine Bluff Arsenal		1
	5 Saline River		1
	9 Western Saline		1
	10 Little River from Glover River to Millwood Lake		1
	15 Weyerhaeuser Tiak Land Swap		2
	16 Nacatoch Ravines		3
	18 Palmetto Flats		1
	19 Bois D'Arc		1
	20 Lower Ouachita		2
	22 Seven Devils		1
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
	24 White Oak Creek		2
	26 Sulfur River Wildlife Management Area		1
	27 Bayou Dorcheat		2
	28 Miller County Sandhills		1

Scientific Name	Conservation Area	Common Name	Viable Occurrences
	29 Cornie Creek Bottoms		1
	30 Daingerfield State Park		1
	31 Bayou Bartholomew		1
	34 Caney District, Corney Unit - Kisatchie National Forest		1
	35 Caney District, Caney Unit - Kisatchie National Forest		1
	37 Bodcau		5
	38 Caddo Lake Complex		4
	44 Upper Big Sandy Creek		2
	45 Red River Macrosite, North Highlands, Gilliam-1		1
	48 Upper Sabine River Complex		7
	49 Barksdale & Ammo Plant		1
	56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
	58 Canisnia Lake / Bayou Pierre		1
	59 Black Lake Bayou & Red River Salines		1
	60 Tolar Ranch		2
	65 Striker Creek		2
	68 Mud Creek		1
	70 Northern Sabine National Forest		2
	71 Upper Neches River		2
	72 Attoyac River		1
	75 Davy Crockett National Forest		1
	77 Sam Houston National Forest		5
	78 Lower Trinity River		6
Southeastern coastal plain calcareous patch prairies		**SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES**	
	7 Terre Noire		2
	13 White Cliffs Natural Area		2
	14 Saratoga / Columbus / Washington Blackland Prairies		3

Scientific Name	Common Name	Conservation Area	Viable Occurrences
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	7
		37 Bodcau	2
		49 Barksdale & Ammo Plant	1
		52 Sligo 3/4	1
		56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	1
		76 Riverside Catahoula Barrens	1
		77 Sam Houston National Forest	1
Southeastern coastal plain carbonate glades and barrens	**SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS**		
		3 Nepheline Syenite Glades	1
		5 Saline River	1
		8 DeQueen / Dierks Glade Systems	1
		10 Little River from Glover River to Millwood Lake	1
		13 White Cliffs Natural Area	1
		14 Saratoga / Columbus / Washington Blackland Prairies	6
		20 Lower Ouachita	1
		74 Weches Glades	1
		76 Riverside Catahoula Barrens	2
Southeastern coastal plain circumneutral/basic upland forests and woodlands	**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS**		
		16 Nacatoch Ravines	1
		22 Seven Devils	1
Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests	**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS**		
		24 White Oak Creek	1
		78 Lower Trinity River	1

Scientific Name / Conservation Area		Common Name	Viable Occurrences
Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands		**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS**	
8	DeQueen / Dierks Glade Systems		1
13	White Cliffs Natural Area		4
14	Saratoga / Columbus / Washington Blackland Prairies		4
16	Nacatoch Ravines		1
37	Bodcau		1
38	Caddo Lake Complex		1
49	Barksdale & Ammo Plant		1
76	Riverside Catahoula Barrens		1
78	Lower Trinity River		1
Southeastern coastal plain dry-mesic loblolly pine / hardwood forests		**SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS**	
1	Granite Mountain / Gillam Park		1
2	Lorance Creek / Big Lake		1
3	Nepheline Syenite Glades		1
4	Pine Bluff Arsenal		4
5	Saline River		2
7	Terre Noire		1
8	DeQueen / Dierks Glade Systems		1
10	Little River from Glover River to Millwood Lake		1
12	Ross Foundation		2
13	White Cliffs Natural Area		1
14	Saratoga / Columbus / Washington Blackland Prairies		1
15	Weyerhaeuser Tiak Land Swap		2
16	Nacatoch Ravines		1

Scientific Name	Conservation Area	Common Name	Viable Occurrences
	17 Poison Springs		2
	20 Lower Ouachita		2
	22 Seven Devils		2
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2
	26 Sulfur River Wildlife Management Area		1
	27 Bayou Dorcheat		1
	29 Cornie Creek Bottoms		1
	31 Bayou Bartholomew		2
	33 Union Wildlife Management Area		1
	34 Caney District, Corney Unit - Kisatchie National Forest		2
	35 Caney District, Caney Unit - Kisatchie National Forest		1
	36 Bayou DeLoutre		1
	37 Bodcau		2
	38 Caddo Lake Complex		2
	40 Mill Creek Ranch		1
	49 Barksdale & Ammo Plant		1
	52 Sligo 3/4		1
	56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
	70 Northern Sabine National Forest		4
	75 Davy Crockett National Forest		1
	77 Sam Houston National Forest		1
	78 Lower Trinity River		1
Southeastern coastal plain herbaceous seepage bogs		**SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS**	
	2 Lorance Creek / Big Lake		1
	4 Pine Bluff Arsenal		1
	5 Saline River		1
	12 Ross Foundation		6

Scientific Name	Common Name	Conservation Area	Viable Occurrences
		17 Poison Springs	6
		20 Lower Ouachita	1
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	1
		28 Miller County Sandhills	1
		40 Mill Creek Ranch	1
		63 Burkitt Foundation, Gus Engling Wildlife Management Area	2
		64 Camp Bette Perot	1
Southeastern coastal plain nepheline syenite glades and barrens	**NEPHELINE SYENITE HERBACEOUS GLADES**		
		1 Granite Mountain / Gillam Park	1
		3 Nepheline Syenite Glades	1
Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests	**SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS**		
		7 Terre Noire	1
		10 Little River from Glover River to Millwood Lake	1
		13 White Cliffs Natural Area	2
		14 Saratoga / Columbus / Washington Blackland Prairies	3
		16 Nacatoch Ravines	1
		22 Seven Devils	1
		24 White Oak Creek	1
		26 Sulfur River Wildlife Management Area	1
		32 Delaney Mt.	1
		37 Bodcau	1
		38 Caddo Lake Complex	1
		78 Lower Trinity River	1

Scientific Name	Common Name	Conservation Area	Viable Occurrences
Southeastern coastal plain riverfront and levee bottomland forests	**SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS**		
		2 Lorance Creek / Big Lake	1
		4 Pine Bluff Arsenal	4
		5 Saline River	11
		9 Western Saline	1
		10 Little River from Glover River to Millwood Lake	6
		16 Nacatoch Ravines	1
		18 Palmetto Flats	1
		19 Bois D'Arc	1
		20 Lower Ouachita	14
		22 Seven Devils	1
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	13
		26 Sulfur River Wildlife Management Area	1
		27 Bayou Dorcheat	1
		30 Daingerfield State Park	1
		31 Bayou Bartholomew	1
		37 Bodcau	1
		38 Caddo Lake Complex	3
		43 Minden Unit of Kisatchie National Forest	1
		48 Upper Sabine River Complex	1
		49 Barksdale & Ammo Plant	1
		58 Canisnia Lake / Bayou Pierre	1
Southeastern coastal plain salt glades and barrens	**SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS**		
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	7
		59 Black Lake Bayou & Red River Salines	3
		75 Davy Crockett National Forest	1

Scientific Name / Conservation Area		Common Name	Viable Occurrences
Southeastern coastal plain upland calcareous mixed hardwood forests		**SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS**	
2	Lorance Creek / Big Lake		1
7	Terre Noire		1
8	DeQueen / Dierks Glade Systems		1
13	White Cliffs Natural Area		2
14	Saratoga / Columbus / Washington Blackland Prairies		6
16	Nacatoch Ravines		1
32	Delaney Mt.		1
37	Bodcau		1
42	Stow Creek Woods		1
45	Red River Macrosite, North Highlands, Gilliam-1		1
48	Upper Sabine River Complex		1
49	Barksdale & Ammo Plant		1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		2
70	Northern Sabine National Forest		3
78	Lower Trinity River		1
Southeastern coastal plain upland depression forested ponds		**SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS**	
70	Northern Sabine National Forest		1
75	Davy Crockett National Forest		1
Southeastern coastal plain upland longleaf pinelands		**SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS**	
70	Northern Sabine National Forest		2

Scientific Name	Conservation Area	Common Name	Viable Occurrences
	75 Davy Crockett National Forest		1
Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks		**SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS**	
	4 Pine Bluff Arsenal		2
	5 Saline River		2
	12 Ross Foundation		6
	15 Weyerhaeuser Tiak Land Swap		1
	16 Nacatoch Ravines		1
	17 Poison Springs		6
	20 Lower Ouachita		2
	22 Seven Devils		1
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		3
	27 Bayou Dorcheat		1
	29 Cornie Creek Bottoms		1
	31 Bayou Bartholomew		2
	34 Caney District, Corney Unit - Kisatchie National Forest		1
	35 Caney District, Caney Unit - Kisatchie National Forest		1
	37 Bodcau		2
	38 Caddo Lake Complex		1
	41 Burma Road		1
	49 Barksdale & Ammo Plant		1
	51 Schoolhouse Springs		1
	61 Ham Creek - Mt. Enterprise		1
	70 Northern Sabine National Forest		2
	75 Davy Crockett National Forest		1
	77 Sam Houston National Forest		1
	78 Lower Trinity River		1

Scientific Name	Common Name	Conservation Area	Viable Occurrences
Southeastern coastal plain wet hardwood flatwoods	**SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS**		
		4 Pine Bluff Arsenal	3
		16 Nacatoch Ravines	1
		18 Palmetto Flats	1
		19 Bois D'Arc	1
		22 Seven Devils	1
		23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	21
		26 Sulfur River Wildlife Management Area	1
		27 Bayou Dorcheat	2
		49 Barksdale & Ammo Plant	1
		52 Sligo 3/4	1
		56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	1
		70 Northern Sabine National Forest	1
		75 Davy Crockett National Forest	1
		77 Sam Houston National Forest	1
		78 Lower Trinity River	1
Southeastern coastal plain xeric sandhill woodlands and forests	**SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS**		
		1 Granite Mountain / Gillam Park	1
		8 DeQueen / Dierks Glade Systems	1
		10 Little River from Glover River to Millwood Lake	1
		12 Ross Foundation	16
		13 White Cliffs Natural Area	1
		17 Poison Springs	18
		28 Miller County Sandhills	1
		37 Bodcau	1
		38 Caddo Lake Complex	4

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
39 Gulf Stream Sandhill		2
50 Tyler State Park		2
60 Tolar Ranch		1
62 Fosterville Forest		1
63 Burkitt Foundation, Gus Engling Wildlife Management Area		1
64 Camp Bette Perot		1
69 Crystal Lake Tract		1
70 Northern Sabine National Forest		2
75 Davy Crockett National Forest		1
77 Sam Houston National Forest		1

Crustacean

Faxonella beyeri	**CRAYFISH**	
66 Gum Pond		1
Procambarus elegans	**CRAYFISH**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
34 Caney District, Corney Unit - Kisatchie National Forest		1

Fish

Alosa alabamae	**ALABAMA SHAD**	
11 Little Missouri and Lower Antoine Rivers		3
17 Poison Springs		1
20 Lower Ouachita		7
Ammocrypta clara	**WESTERN SAND DARTER**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
Atractosteus spatula	**ALLIGATOR GAR**	
45 Red River Macrosite, North Highlands, Gilliam-1		1
Crystallaria asprella	**CRYSTAL DARTER**	

Scientific Name	Common Name	
Conservation Area		Viable Occurrences
5 Saline River		1
10 Little River from Glover River to Millwood Lake		1
20 Lower Ouachita		3
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		5
Cycleptus elongatus	**BLUE SUCKER**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
31 Bayou Bartholomew		2
58 Canisnia Lake / Bayou Pierre		1
71 Upper Neches River		1
Fundulus blairae	**WESTERN STARHEAD TOPMINNOW**	
5 Saline River		1
20 Lower Ouachita		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
Macrhybopsis aestivalis	**SPECKLED CHUB**	
5 Saline River		1
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
Notropis atrocaudalis	**BLACKSPOT SHINER**	
9 Western Saline		2
10 Little River from Glover River to Millwood Lake		2
Notropis bairdi	**RED RIVER SHINER**	
45 Red River Macrosite, North Highlands, Gilliam-1		1
Notropis hubbsi	**BLACKNOSE SHINER**	
45 Red River Macrosite, North Highlands, Gilliam-1		4
Notropis maculatus	**TAILLIGHT SHINER**	
20 Lower Ouachita		2
45 Red River Macrosite, North Highlands, Gilliam-1		1

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
Notropis shumardi	**SILVERBAND SHINER**	
45 Red River Macrosite, North Highlands, Gilliam-1		1
Noturus eleutherus	**MOUNTAIN MADTOM**	
5 Saline River		1
20 Lower Ouachita		1
Polyodon spathula	**PADDLEFISH**	
36 Bayou DeLoutre		1
38 Caddo Lake Complex		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
46 Bayou D'arbonne		1
71 Upper Neches River		1
Scaphirhynchus platorynchus	**SHOVELNOSE STURGEON**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
58 Canisnia Lake / Bayou Pierre		1

Insect

Nicrophorus americanus	**AMERICAN BURYING BEETLE**	
15 Weyerhaeuser Tiak Land Swap		1
Papaipema eryngii	**RATTLESNAKE-MASTER BORER MOTH**	
4 Pine Bluff Arsenal		1

Mammal

Corynorhinus rafinesquii	**SOUTHEASTERN BIG-EARED BAT**	
10 Little River from Glover River to Millwood Lake		2
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
Spilogale putorius	**EASTERN SPOTTED SKUNK**	
10 Little River from Glover River to Millwood Lake		1

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
Ursus americanus	**AMERICAN BLACK BEAR**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1

Mussel

Arkansia wheeleri	**OUACHITA ROCK-POCKETBOOK**	
20 Lower Ouachita		2
Cumberlandia monodonta	**SPECTACLECASE**	
20 Lower Ouachita		1
Cyprogenia aberti	**WESTERN FANSHELL**	
5 Saline River		1
20 Lower Ouachita		2
31 Bayou Bartholomew		1
Ellipsaria lineolata	**BUTTERFLY**	
31 Bayou Bartholomew		1
Elliptio dilatata	**SPIKE/LADYFINGER**	
31 Bayou Bartholomew		3
Lampsilis abrupta	**PINK MUCKET**	
9 Western Saline		1
10 Little River from Glover River to Millwood Lake		1
20 Lower Ouachita		9
31 Bayou Bartholomew		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
Lampsilis powellii	**ARKANSAS FATMUCKET**	
5 Saline River		1
20 Lower Ouachita		1
Obovaria jacksoniana	**SOUTHERN HICKORYNUT**	
10 Little River from Glover River to Millwood Lake		1

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
20 Lower Ouachita		2
34 Caney District, Corney Unit - Kisatchie National Forest		1
Pleurobema cordatum	**OHIO PIGTOE**	
5 Saline River		1
Pleurobema riddellii	**LOUISIANA PIGTOE**	
46 Bayou D'arbonne		1
Pleurobema rubrum	**PYRAMID PIGTOE**	
5 Saline River		1
20 Lower Ouachita		24
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		12
27 Bayou Dorcheat		1
31 Bayou Bartholomew		1
Potamilus amphichaenus	**TEXAS HEELSPLITTER**	
48 Upper Sabine River Complex		1
Quadrula cylindrica	**RABBITSFOOT**	
31 Bayou Bartholomew		1
Quadrula cylindrica cylindrica	**RABBITSFOOT**	
10 Little River from Glover River to Millwood Lake		2
20 Lower Ouachita		2
Quadrula fragosa	**WINGED MAPLELEAF**	
20 Lower Ouachita		2
Villosa arkansasensis	**OUACHITA CREEKSHELL**	
20 Lower Ouachita		2

Plant

Agalinis auriculata	**EARLEAF FALSE FOXGLOVE**	
14 Saratoga / Columbus / Washington Blackland Prairies		1

Scientific Name / Conservation Area	Common Name	Viable Occurrences
Amorpha paniculata	**PANICLED INDIGOBUSH**	
16 Nacatoch Ravines		1
Aster puniceus var. scabricaulis	**ROUGH-STEMMED ASTER**	
63 Burkitt Foundation, Gus Engling Wildlife Management Area		1
69 Crystal Lake Tract		1
Astragalus soxmaniorum	**SOXMAN MILK-VETCH**	
17 Poison Springs		7
28 Miller County Sandhills		1
38 Caddo Lake Complex		1
Bartonia texana	**TEXAS SCREWSTEM**	
67 Tonkawa Sandhills/Naconiche Creek		1
77 Sam Houston National Forest		1
Carex decomposita	**CYPRESSKNEE SEDGE**	
26 Sulfur River Wildlife Management Area		1
Coreopsis intermedia	**GOLDEN WAVE TICKSEED**	
38 Caddo Lake Complex		1
63 Burkitt Foundation, Gus Engling Wildlife Management Area		3
64 Camp Bette Perot		1
Cyperus grayioides	**ILLINOIS FLATSEDGE**	
17 Poison Springs		5
63 Burkitt Foundation, Gus Engling Wildlife Management Area		3
67 Tonkawa Sandhills/Naconiche Creek		3
70 Northern Sabine National Forest		2
Cypripedium kentuckiense	**SOUTHERN LADY'S SLIPPER**	
11 Little Missouri and Lower Antoine Rivers		1
16 Nacatoch Ravines		3
Echinacea purpurea	**PURPLE CONEFLOWER**	

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
1 Granite Mountain / Gillam Park		1
Eriocaulon koernickianum	**SMALL HEADED PIPEWORT**	
1 Granite Mountain / Gillam Park		1
3 Nepheline Syenite Glades		2
63 Burkitt Foundation, Gus Engling Wildlife Management Area		1
Geocarpon minimum	**GEOCARPON**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2
Hibiscus dasycalyx	**NECHES RIVER MALLOW**	
68 Mud Creek		1
71 Upper Neches River		1
75 Davy Crockett National Forest		1
Leavenworthia texana	**TEXAS GOLDEN GLADE CRESS**	
74 Weches Glades		1
Lesquerella pallida	**WHITE BLADDERPOD**	
74 Weches Glades		5
Liatris cymosa	**BRANCHED GAY-FEATHER**	
76 Riverside Catahoula Barrens		3
Parnassia asarifolia	**KIDNEYLEAF GRASS-OF-PARNASSUS**	
67 Tonkawa Sandhills/Naconiche Creek		1
Prenanthes barbata	**BARBED RATTLESNAKE ROOT**	
21 Prenanthes Barbata Site		1
43 Minden Unit of Kisatchie National Forest		1
68 Mud Creek		1
70 Northern Sabine National Forest		1
Quercus arkansana	**ARKANSAS OAK**	
16 Nacatoch Ravines		1
17 Poison Springs		6

Scientific Name / Conservation Area	Common Name	Viable Occurrences
37 Bodcau		5
38 Caddo Lake Complex		1
Schoenolirion wrightii	**SUNNYBELL**	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		11
59 Black Lake Bayou & Red River Salines		2
Tetragonotheca ludoviciana	**LOUISIANA SQUARE-HEAD**	
67 Tonkawa Sandhills/Naconiche Creek		1
70 Northern Sabine National Forest		2
75 Davy Crockett National Forest		1
Thalictrum arkansanum	**MEADOWRUE**	
10 Little River from Glover River to Millwood Lake		6
Trillium texanum	**TEXAS TRILLIUM / WAKEROBIN**	
10 Little River from Glover River to Millwood Lake		1
67 Tonkawa Sandhills/Naconiche Creek		1

Reptile

Crotalus horridus	**TIMBER RATTLESNAKE**	
4 Pine Bluff Arsenal		1
5 Saline River		1
10 Little River from Glover River to Millwood Lake		2
12 Ross Foundation		2
20 Lower Ouachita		1
35 Caney District, Caney Unit - Kisatchie National Forest		1
37 Bodcau		1
49 Barksdale & Ammo Plant		1
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
68 Mud Creek		1
Macrochelys temminckii	**ALLIGATOR SNAPPING TURTLE**	

Scientific Name	Common Name	Viable Occurrences
Conservation Area		
4 Pine Bluff Arsenal		1
27 Bayou Dorcheat		1
31 Bayou Bartholomew		1
37 Bodcau		1
38 Caddo Lake Complex		1
43 Minden Unit of Kisatchie National Forest		1
45 Red River Macrosite, North Highlands, Gilliam-1		1
48 Upper Sabine River Complex		1
68 Mud Creek		1
75 Davy Crockett National Forest		1
78 Lower Trinity River		1

UWGCP - Viable Target Occurrences Captured by Conservation Areas

1 Granite Mountain / Gillam Park

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR035040	*Southeastern coastal plain nepheline syenite glades and barrens*	NEPHELINE SYENITE HERBACEOUS GLADES	NA	1
PMERI01040	*Eriocaulon koernickianum*	SMALL HEADED PIPEWORT	G2	1

2 Lorance Creek / Big Lake

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	2
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1

CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1

3 Nepheline Syenite Glades

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR035040	*Southeastern coastal plain nepheline syenite glades and barrens*	NEPHELINE SYENITE HERBACEOUS GLADES	NA	1
PMERI01040	*Eriocaulon koernickianum*	SMALL HEADED PIPEWORT	G2	2

4 Pine Bluff Arsenal

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	5
AAABH01010	*Rana areolata*	CRAWFISH FROG	G4	1
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	4
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	3
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	5
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	4
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	4
IILEYC0310	*Papaipema eryngii*	RATTLESNAKE-MASTER BORER MOTH	G1G2	1

5 Saline River

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	2
AFCJB53010	*Macrhybopsis aestivalis*	SPECKLED CHUB	G3G4	1
AFCKA02040	*Noturus eleutherus*	MOUNTAIN MADTOM	G4	1
AFCNB04270	*Fundulus blairae*	WESTERN STARHEAD TOPMINNOW	G4	1
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	G3	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	2
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	11
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	4

IMBIV10010	*Cyprogenia aberti*	WESTERN FANSHELL	G2	1
IMBIV21150	*Lampsilis powellii*	ARKANSAS FATMUCKET	G1G2	1
IMBIV35090	*Pleurobema cordatum*	OHIO PIGTOE	G3	1
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	1

6 McCurtain Co

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
				0

7 Terre Noire

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	2
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1

8 DeQueen / Dierks Glade Systems

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1

9 Western Saline

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCJB28140	*Notropis atrocaudalis*	BLACKSPOT SHINER	G4	2
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	1

10 Little River from Glover River to Millwood Lake

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	2
AFCJB28140	*Notropis atrocaudalis*	BLACKSPOT SHINER	G4	2
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	G3	1

AMACC0802	*Corynorhinus rafinesquii*	SOUTHEASTERN BIG-EARED BAT	G3G4	2
AMAJF05010	*Spilogale putorius*	EASTERN SPOTTED SKUNK	G5	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	2
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	13
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	6
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	1
IMBIV31010	*Obovaria jacksoniana*	SOUTHERN HICKORYNUT	G1G2	1
IMBIV39041	*Quadrula cylindrica cylindrica*	RABBITSFOOT	G3T3	2
PDRAN0M02	*Thalictrum arkansanum*	MEADOWRUE	G2Q	6

PMLIL200X0	*Trillium texanum*	TEXAS TRILLIUM / WAKEROBIN	G2G3	1

11 Little Missouri and Lower Antoine Rivers

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCFA01020	*Alosa alabamae*	ALABAMA SHAD	G4	3
PMORC0Q0F	*Cypripedium kentuckiense*	SOUTHERN LADY'S SLIPPER	G3	1

12 Ross Foundation

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	2
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	2
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	16
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	6
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	6
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	11

13 White Cliffs Natural Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	2
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	2
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	4
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	2

14 Saratoga / Columbus / Washington Blackland Prairies

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	6
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	6

CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	3
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	4
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	3
PDSCR01130	*Agalinis auriculata*	EARLEAF FALSE FOXGLOVE	G3	1

15 Weyerhaeuser Tiak Land Swap

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
IICOL42010	*Nicrophorus americanus*	AMERICAN BURYING BEETLE	G2G3	1

16 Nacatoch Ravines

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR035730	*Southeastern coastal plain circumneutral/basic upland forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS	NA	1
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	2
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	3
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1
PDFAB080C0	*Amorpha paniculata*	PANICLED INDIGOBUSH	G3?	1

PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	G3	1
PMORC0Q0F	*Cypripedium kentuckiense*	SOUTHERN LADY'S SLIPPER	G3	3

17 Poison Springs

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
AFCFA01020	*Alosa alabamae*	ALABAMA SHAD	G4	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	18
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	6
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	6
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	11
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	5
PDFAB0F8C0	*Astragalus soxmaniorum*	SOXMAN MILK-VETCH	G3	7
PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	G3	6

PMCYP061G	*Cyperus grayioides*	ILLINOIS FLATSEDGE	G3	5

18 Palmetto Flats

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1

19 Bois D'Arc

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1

20 Lower Ouachita

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	4
AFCFA01020	*Alosa alabamae*	ALABAMA SHAD	G4	7
AFCJB28650	*Notropis maculatus*	TAILLIGHT SHINER	G5	2
AFCKA02040	*Noturus eleutherus*	MOUNTAIN MADTOM	G4	1
AFCNB04270	*Fundulus blairae*	WESTERN STARHEAD TOPMINNOW	G4	1
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	G3	3
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	2
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	14

CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
IMBIV07010	*Arkansia wheeleri*	OUACHITA ROCK-POCKETBOOK	G1	2
IMBIV08010	*Cumberlandia monodonta*	SPECTACLECASE	G2G3	1
IMBIV10010	*Cyprogenia aberti*	WESTERN FANSHELL	G2	2
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	9
IMBIV21150	*Lampsilis powellii*	ARKANSAS FATMUCKET	G1G2	1
IMBIV31010	*Obovaria jacksoniana*	SOUTHERN HICKORYNUT	G1G2	2
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	24
IMBIV39041	*Quadrula cylindrica cylindrica*	RABBITSFOOT	G3T3	2
IMBIV39050	*Quadrula fragosa*	WINGED MAPLELEAF	G1	2
IMBIV47020	*Villosa arkansasensis*	OUACHITA CREEKSHELL	G2	2

21 Prenanthes Barbata Site

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
PDAST7K060	*Prenanthes barbata*	BARBED RATTLESNAKE ROOT	G3	1

22 Seven Devils

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2

CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR035730	*Southeastern coastal plain circumneutral/basic upland forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1

23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	34
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
AAABH01010	*Rana areolata*	CRAWFISH FROG	G4	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	2
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	1

ABPBX91050	*Aimophila aestivalis*	BACHMAN'S SPARROW	G3	2
ABPBXA0030	*Ammodramus henslowii*	HENSLOW'S SPARROW	G4	2
AFCAA02020	*Scaphirhynchus platorynchus*	SHOVELNOSE STURGEON	G4	1
AFCJB53010	*Macrhybopsis aestivalis*	SPECKLED CHUB	G3G4	1
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	G3G4	1
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	G3	5
AFCQC01040	*Ammocrypta clara*	WESTERN SAND DARTER	G3	1
AMACC0802	*Corynorhinus rafinesquii*	SOUTHEASTERN BIG-EARED BAT	G3G4	1
AMAJB01010	*Ursus americanus*	AMERICAN BLACK BEAR	G5	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	3
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	21
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR035030	*Southeastern coastal plain salt glades and barrens*	SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS	NA	7
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	3
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	7

CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	5
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	13
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1
ICMAL14500	*Procambarus elegans*	CRAYFISH	G4	1
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	12
PDCAR15010	*Geocarpon minimum*	GEOCARPON	G2	2
PMLIL1S030	*Schoenolirion wrightii*	SUNNYBELL	G3	11

24 White Oak Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
CEGR038535	*Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS	NA	1

25 Atlanta State Recreation Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1

CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

26 Sulfur River Wildlife Management Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	3
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1
PMCYP033K0	*Carex decomposita*	CYPRESSKNEE SEDGE	G3	1

27 Bayou Dorcheat

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	2
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	2
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	1

28 Miller County Sandhills

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR082010	*Eastern wide-ranging shrub swamps*	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	1
PDFAB0F8C0	*Astragalus soxmaniorum*	SOXMAN MILK-VETCH	G3	1

29 Cornie Creek Bottoms

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1

30 Daingerfield State Park

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1

31 Bayou Bartholomew

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	2
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	G3G4	2
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
IMBIV10010	*Cyprogenia aberti*	WESTERN FANSHELL	G2	1

IMBIV13010	*Ellipsaria lineolata*	BUTTERFLY	G4	1
IMBIV14100	*Elliptio dilatata*	SPIKE/LADYFINGER	G5	3
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	1
IMBIV35250	*Pleurobema rubrum*	PYRAMID PIGTOE	G2	1
IMBIV39040	*Quadrula cylindrica*	RABBITSFOOT	G3	1

32 Delaney Mt.

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1

33 Union Wildlife Management Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1

34 Caney District, Corney Unit - Kisatchie National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	3
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
ICMAL14500	*Procambarus elegans*	CRAYFISH	G4	1
IMBIV31010	*Obovaria jacksoniana*	SOUTHERN HICKORYNUT	G1G2	1

35 Caney District, Caney Unit - Kisatchie National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
AAABH01010	*Rana areolata*	CRAWFISH FROG	G4	1
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	1
ABPBX91050	*Aimophila aestivalis*	BACHMAN'S SPARROW	G3	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1

CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1

36 Bayou DeLoutre

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1

37 Bodcau

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	2
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	1
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	1
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	2
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	4
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	5
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	G3	5

38 Caddo Lake Complex

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	1

ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	4
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	2
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	2
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	3
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	5
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	4
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	3
PDAST2L0E0	*Coreopsis intermedia*	GOLDEN WAVE TICKSEED	G3	1
PDFAB0F8C0	*Astragalus soxmaniorum*	SOXMAN MILK-VETCH	G3	1
PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	G3	1

39 Gulf Stream Sandhill

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	2

40 Mill Creek Ranch

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR048010	*Eastern wide ranging open marshes and ponds*	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	1

41 Burma Road

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1

42 Stow Creek Woods

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1

43 Minden Unit of Kisatchie National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	5

ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
PDAST7K060	*Prenanthes barbata*	BARBED RATTLESNAKE ROOT	G3	1

44 Upper Big Sandy Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	2
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2

45 Red River Macrosite, North Highlands, Gilliam-1

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ABNNM0810	*Sterna antillarum athalassos*	INTERIOR LEAST TERN	G4T2Q	1
AFCAA02020	*Scaphirhynchus platorynchus*	SHOVELNOSE STURGEON	G4	1
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	1
AFCBA01050	*Atractosteus spatula*	ALLIGATOR GAR	G3G4	1
AFCJB28160	*Notropis bairdi*	RED RIVER SHINER	G4	1
AFCJB28540	*Notropis hubbsi*	BLACKNOSE SHINER	G3	4
AFCJB28650	*Notropis maculatus*	TAILLIGHT SHINER	G5	1
AFCJB28870	*Notropis shumardi*	SILVERBAND SHINER	G5	1
AFCJB53010	*Macrhybopsis aestivalis*	SPECKLED CHUB	G3G4	1
AFCNB04270	*Fundulus blairae*	WESTERN STARHEAD TOPMINNOW	G4	1
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1

CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
IMBIV21110	*Lampsilis abrupta*	PINK MUCKET	G2	1

46 Bayou D'arbonne

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	1
IMBIV35270	*Pleurobema riddellii*	LOUISIANA PIGTOE	G1G2	1

47 Grand Saline Marsh

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
				0

48 Upper Sabine River Complex

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	3
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	7
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1
IMBIV37020	*Potamilus amphichaenus*	TEXAS HEELSPLITTER	G1	1

49 Barksdale & Ammo Plant

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	2
AAABH01010	*Rana areolata*	CRAWFISH FROG	G4	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	3
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	2
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	1
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1

CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1

50 Tyler State Park

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	2
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

51 Schoolhouse Springs

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1

52 Sligo 3/4

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	1

53 Jackson / Bienville WMA

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
				0

54 Purtis Creek State Recreation Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR051010	*Cross timbers oak forests and woodlands*	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	1

55 Kickapoo Creek Riparian Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1

56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
ABPBX09010	*Limnothlypis swainsonii*	SWAINSON'S WARBLER	G4	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	2
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	1

CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1

57 Lake Athens Bogs

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1

58 Canisnia Lake / Bayou Pierre

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	G5	1
AFCAA02020	*Scaphirhynchus platorynchus*	SHOVELNOSE STURGEON	G4	1
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	G3G4	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
CEGR038530	*Southeastern coastal plain riverfront and levee bottomland forests*	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	1

59 Black Lake Bayou & Red River Salines

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR035030	*Southeastern coastal plain salt glades and barrens*	SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS	NA	3

CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
PMLIL1S030	*Schoenolirion wrightii*	SUNNYBELL	G3	2

60 Tolar Ranch

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
CEGR051010	*Cross timbers oak forests and woodlands*	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	1

61 Ham Creek - Mt. Enterprise

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1

62 Fosterville Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1

63 Burkitt Foundation, Gus Engling Wildlife Management Area

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	2
CEGR051010	*Cross timbers oak forests and woodlands*	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	1
PDAST0T2L4	*Aster puniceus var. scabricaulis*	ROUGH-STEMMED ASTER	G5T2	1
PDAST2L0E0	*Coreopsis intermedia*	GOLDEN WAVE TICKSEED	G3	3
PMCYP061G	*Cyperus grayioides*	ILLINOIS FLATSEDGE	G3	3
PMERI01040	*Eriocaulon koernickianum*	SMALL HEADED PIPEWORT	G2	1

64 Camp Bette Perot

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	2
CEGR034710	*Southeastern coastal plain herbaceous seepage bogs*	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	1
CEGR051010	*Cross timbers oak forests and woodlands*	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	1
PDAST2L0E0	*Coreopsis intermedia*	GOLDEN WAVE TICKSEED	G3	1

65 Striker Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences

CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2

66 Gum Pond

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ICMAL51010	*Faxonella beyeri*	CRAYFISH	G4	1

67 Tonkawa Sandhills/Naconiche Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
PDAST96020	*Tetragonotheca ludoviciana*	LOUISIANA SQUARE-HEAD	G4	1
PDGEN01020	*Bartonia texana*	TEXAS SCREWSTEM	G2	1
PDSAX0P010	*Parnassia asarifolia*	KIDNEYLEAF GRASS-OF-PARNASSUS	G4	1
PMCYP061G	*Cyperus grayioides*	ILLINOIS FLATSEDGE	G3	3
PMLIL200X0	*Trillium texanum*	TEXAS TRILLIUM / WAKEROBIN	G2G3	1

68 Mud Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	G4	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
PDAST7K060	*Prenanthes barbata*	BARBED RATTLESNAKE ROOT	G3	1
PDMAL0H0E	*Hibiscus dasycalyx*	NECHES RIVER MALLOW	G1	1

69 Crystal Lake Tract

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
PDAST0T2L4	*Aster puniceus var. scabricaulis*	ROUGH-STEMMED ASTER	G5T2	1

70 Northern Sabine National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
320 series	*Southeastern coastal plain upland longleaf pinelands*	SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS	NA	2
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	2
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	4
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	2
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	3
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1

CEGR034010	*Southeastern coastal plain upland depression forested ponds*	SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	3
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
PDAST7K060	*Prenanthes barbata*	BARBED RATTLESNAKE ROOT	G3	1
PDAST96020	*Tetragonotheca ludoviciana*	LOUISIANA SQUARE-HEAD	G4	2
PMCYP061G	*Cyperus grayioides*	ILLINOIS FLATSEDGE	G3	2

71 Upper Neches River

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
AFCAB01010	*Polyodon spathula*	PADDLEFISH	G4	1
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	G3G4	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	2
PDMAL0H0E	*Hibiscus dasycalyx*	NECHES RIVER MALLOW	G1	1

72 Attoyac River

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1

73 San Pedro Creek

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
				0

74 Weches Glades

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	1
PDBRA1L080	*Leavenworthia texana*	TEXAS GOLDEN GLADE CRESS	G2T1	1
PDBRA1N1W	*Lesquerella pallida*	WHITE BLADDERPOD	G1	5

75 Davy Crockett National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
320 series	*Southeastern coastal plain upland longleaf pinelands*	SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS	NA	1
365 series	*Small stream forests*	SMALL STREAM FORESTS	NA	1
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	1
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1

CEGR034010	*Southeastern coastal plain upland depression forested ponds*	SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS	NA	1
CEGR035030	*Southeastern coastal plain salt glades and barrens*	SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	1
PDAST96020	*Tetragonotheca ludoviciana*	LOUISIANA SQUARE-HEAD	G4	1
PDMAL0H0E	*Hibiscus dasycalyx*	NECHES RIVER MALLOW	G1	1

76 Riverside Catahoula Barrens

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
CEGR035010	*Southeastern coastal plain carbonate glades and barrens*	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	2
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	1
CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
PDAST5X070	*Liatris cymosa*	BRANCHED GAY-FEATHER	G2	3

77 Sam Houston National Forest

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	G3	2
CEGR030510	*Southeastern coastal plain xeric sandhill woodlands and forests*	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	1

CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	1
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	5
PDGEN01020	*Bartonia texana*	TEXAS SCREWSTEM	G2	1

78 Lower Trinity River

Element Code	Scientific Name	Common Name	Global Rank	Number of Occurrences
ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	G3G4	1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	1
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	1

CEGR037530	*Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	1
CEGR037540	*Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests*	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	1
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	2
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	6
CEGR038535	*Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS	NA	1

UWGCP - Viable Target Occurrences

Element Code	Scientific Name	Common Name	Viable	Goal
Amphibian				
AAABC02030	***Hyla avivoca***	**BIRD-VOICED TREEFROG**		**5**
2	Lorance Creek / Big Lake		2	
17	Poison Springs		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
27	Bayou Dorcheat		1	
37	Bodcau		1	
49	Barksdale & Ammo Plant		2	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
58	Canisnia Lake / Bayou Pierre		1	
AAABH01010	***Rana areolata***	**CRAWFISH FROG**		**5**
4	Pine Bluff Arsenal		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
35	Caney District, Caney Unit - Kisatchie National Forest		1	
49	Barksdale & Ammo Plant		1	
Bird				
ABNNM08102	***Sterna antillarum athalassos***	**INTERIOR LEAST TERN**		**5**
45	Red River Macrosite, North Highlands, Gilliam-1		1	
ABNYF07060	***Picoides borealis***	**RED COCKADED WOODPECKER**		**5**

Element Code	Scientific Name	Common Name	Viable	Goal
12	Ross Foundation		2	
22	Seven Devils		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2	
37	Bodcau		1	
49	Barksdale & Ammo Plant		3	
70	Northern Sabine National Forest		1	
75	Davy Crockett National Forest		1	
77	Sam Houston National Forest		2	
ABPBX09010	***Limnothlypis swainsonii***	**SWAINSON'S WARBLER**		**5**
2	Lorance Creek / Big Lake		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
35	Caney District, Caney Unit - Kisatchie National Forest		1	
37	Bodcau		1	
49	Barksdale & Ammo Plant		2	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
ABPBX91050	***Aimophila aestivalis***	**BACHMAN'S SPARROW**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2	
35	Caney District, Caney Unit - Kisatchie National Forest		1	
ABPBXA0030	***Ammodramus henslowii***	**HENSLOW'S SPARROW**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2	

Element Code	Scientific Name	Common Name	Viable	Goal
Community				
320 series	***Southeastern coastal plain upland longleaf pinelands***	**SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS**		**6**
70	Northern Sabine National Forest		2	
75	Davy Crockett National Forest		1	
365 series	***Small stream forests***	**SMALL STREAM FORESTS**		**75**
1	Granite Mountain / Gillam Park		1	
3	Nepheline Syenite Glades		1	
4	Pine Bluff Arsenal		5	
5	Saline River		2	
10	Little River from Glover River to Millwood Lake		2	
12	Ross Foundation		1	
15	Weyerhaeuser Tiak Land Swap		1	
16	Nacatoch Ravines		1	
17	Poison Springs		1	
19	Bois D'Arc		1	
20	Lower Ouachita		4	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		34	
25	Atlanta State Recreation Area		1	

Element Code	Scientific Name	Common Name	Viable	Goal
26	Sulfur River Wildlife Management Area		1	
27	Bayou Dorcheat		1	
29	Cornie Creek Bottoms		1	
31	Bayou Bartholomew		2	
33	Union Wildlife Management Area		1	
34	Caney District, Corney Unit - Kisatchie National Forest		3	
35	Caney District, Caney Unit - Kisatchie National Forest		1	
37	Bodcau		2	
43	Minden Unit of Kisatchie National Forest		5	
49	Barksdale & Ammo Plant		1	
50	Tyler State Park		1	
55	Kickapoo Creek Riparian Forest		1	
57	Lake Athens Bogs		1	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		1	
67	Tonkawa Sandhills/Naconiche Creek		1	
70	Northern Sabine National Forest		1	
75	Davy Crockett National Forest		1	
CEGR030510	***Southeastern coastal plain xeric sandhill woodlands and forests***	**SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS**		**50**
1	Granite Mountain / Gillam Park		1	

Element Code	Scientific Name	Common Name	Viable	Goal
8	DeQueen / Dierks Glade Systems		1	
10	Little River from Glover River to Millwood Lake		1	
12	Ross Foundation		16	
13	White Cliffs Natural Area		1	
17	Poison Springs		18	
28	Miller County Sandhills		1	
37	Bodcau		1	
38	Caddo Lake Complex		4	
39	Gulf Stream Sandhill		2	
50	Tyler State Park		2	
60	Tolar Ranch		1	
62	Fosterville Forest		1	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		1	
64	Camp Bette Perot		1	
69	Crystal Lake Tract		1	
70	Northern Sabine National Forest		2	
75	Davy Crockett National Forest		1	
77	Sam Houston National Forest		1	
CEGR030550	***Coastal plain upland pine and pine-hardwood forests***	**COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS**		**42**

Element Code	Scientific Name	Common Name	Viable Goal
1	Granite Mountain / Gillam Park		1
2	Lorance Creek / Big Lake		1
3	Nepheline Syenite Glades		1
4	Pine Bluff Arsenal		1
5	Saline River		1
7	Terre Noire		1
8	DeQueen / Dierks Glade Systems		1
10	Little River from Glover River to Millwood Lake		1
12	Ross Foundation		1
13	White Cliffs Natural Area		1
14	Saratoga / Columbus / Washington Blackland Prairies		1
16	Nacatoch Ravines		1
17	Poison Springs		1
18	Palmetto Flats		1
20	Lower Ouachita		1
22	Seven Devils		1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
25	Atlanta State Recreation Area		1
26	Sulfur River Wildlife Management Area		1

Element Code	Scientific Name	Common Name	Goal Viable
27	Bayou Dorcheat		1
28	Miller County Sandhills		1
30	Daingerfield State Park		1
31	Bayou Bartholomew		1
33	Union Wildlife Management Area		1
34	Caney District, Corney Unit - Kisatchie National Forest		1
35	Caney District, Caney Unit - Kisatchie National Forest		1
37	Bodcau		1
38	Caddo Lake Complex		2
40	Mill Creek Ranch		1
49	Barksdale & Ammo Plant		1
50	Tyler State Park		1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
57	Lake Athens Bogs		1
61	Ham Creek - Mt. Enterprise		1
62	Fosterville Forest		1
64	Camp Bette Perot		2
69	Crystal Lake Tract		1
70	Northern Sabine National Forest		1

Element Code	Scientific Name	Common Name	Viable	Goal
75	Davy Crockett National Forest		1	
CEGR030560	***Southeastern coastal plain dry-mesic loblolly pine / hardwood forests***	**SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS**		**54**
1	Granite Mountain / Gillam Park		1	
2	Lorance Creek / Big Lake		1	
3	Nepheline Syenite Glades		1	
4	Pine Bluff Arsenal		4	
5	Saline River		2	
7	Terre Noire		1	
8	DeQueen / Dierks Glade Systems		1	
10	Little River from Glover River to Millwood Lake		1	
12	Ross Foundation		2	
13	White Cliffs Natural Area		1	
14	Saratoga / Columbus / Washington Blackland Prairies		1	
15	Weyerhaeuser Tiak Land Swap		2	
16	Nacatoch Ravines		1	
17	Poison Springs		2	
20	Lower Ouachita		2	
22	Seven Devils		2	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2	

Element Code	Scientific Name	Common Name	Goal Viable
26	Sulfur River Wildlife Management Area		1
27	Bayou Dorcheat		1
29	Cornie Creek Bottoms		1
31	Bayou Bartholomew		2
33	Union Wildlife Management Area		1
34	Caney District, Corney Unit - Kisatchie National Forest		2
35	Caney District, Caney Unit - Kisatchie National Forest		1
36	Bayou DeLoutre		1
37	Bodcau		2
38	Caddo Lake Complex		2
40	Mill Creek Ranch		1
49	Barksdale & Ammo Plant		1
52	Sligo 3/4		1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
70	Northern Sabine National Forest		4
75	Davy Crockett National Forest		1
77	Sam Houston National Forest		1
78	Lower Trinity River		1

Element Code	Scientific Name	Common Name	Goal
		Viable	
CEGR031010	***Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks***	**SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS**	**70**
4	Pine Bluff Arsenal	2	
5	Saline River	2	
12	Ross Foundation	6	
15	Weyerhaeuser Tiak Land Swap	1	
16	Nacatoch Ravines	1	
17	Poison Springs	6	
20	Lower Ouachita	2	
22	Seven Devils	1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	3	
27	Bayou Dorcheat	1	
29	Cornie Creek Bottoms	1	
31	Bayou Bartholomew	2	
34	Caney District, Corney Unit - Kisatchie National Forest	1	
35	Caney District, Caney Unit - Kisatchie National Forest	1	
37	Bodcau	2	
38	Caddo Lake Complex	1	
41	Burma Road	1	

Element Code	Scientific Name	Common Name	Viable	Goal
49	Barksdale & Ammo Plant		1	
51	Schoolhouse Springs		1	
61	Ham Creek - Mt. Enterprise		1	
70	Northern Sabine National Forest		2	
75	Davy Crockett National Forest		1	
77	Sam Houston National Forest		1	
78	Lower Trinity River		1	
CEGR031020	***Southeastern coastal plain upland calcareous mixed hardwood forests***	**SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS**		**70**
2	Lorance Creek / Big Lake		1	
7	Terre Noire		1	
8	DeQueen / Dierks Glade Systems		1	
13	White Cliffs Natural Area		2	
14	Saratoga / Columbus / Washington Blackland Prairies		6	
16	Nacatoch Ravines		1	
32	Delaney Mt.		1	
37	Bodcau		1	
42	Stow Creek Woods		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
48	Upper Sabine River Complex		1	

Element Code	Scientific Name	Common Name	Viable	Goal
49	Barksdale & Ammo Plant		1	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		2	
70	Northern Sabine National Forest		3	
78	Lower Trinity River		1	
CEGR033040	***Southeastern coastal plain wet hardwood flatwoods***	**SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS**		**55**
4	Pine Bluff Arsenal		3	
16	Nacatoch Ravines		1	
18	Palmetto Flats		1	
19	Bois D'Arc		1	
22	Seven Devils		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		21	
26	Sulfur River Wildlife Management Area		1	
27	Bayou Dorcheat		2	
49	Barksdale & Ammo Plant		1	
52	Sligo 3/4		1	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
70	Northern Sabine National Forest		1	
75	Davy Crockett National Forest		1	
77	Sam Houston National Forest		1	

Element Code	Scientific Name	Common Name	Viable	Goal
78	Lower Trinity River		1	
CEGR034010	***Southeastern coastal plain upland depression forested ponds***	**SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS**		**20**
70	Northern Sabine National Forest		1	
75	Davy Crockett National Forest		1	
CEGR034710	***Southeastern coastal plain herbaceous seepage bogs***	**SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS**		**22**
2	Lorance Creek / Big Lake		1	
4	Pine Bluff Arsenal		1	
5	Saline River		1	
12	Ross Foundation		6	
17	Poison Springs		6	
20	Lower Ouachita		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
28	Miller County Sandhills		1	
40	Mill Creek Ranch		1	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		2	
64	Camp Bette Perot		1	
CEGR035010	***Southeastern coastal plain carbonate glades and barrens***	**SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS**		**20**
3	Nepheline Syenite Glades		1	

Element Code	Scientific Name	Common Name	Viable	Goal
5	Saline River		1	
8	DeQueen / Dierks Glade Systems		1	
10	Little River from Glover River to Millwood Lake		1	
13	White Cliffs Natural Area		1	
14	Saratoga / Columbus / Washington Blackland Prairies		6	
20	Lower Ouachita		1	
74	Weches Glades		1	
76	Riverside Catahoula Barrens		2	
CEGR035030	***Southeastern coastal plain salt glades and barrens***	**SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS**		**14**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		7	
59	Black Lake Bayou & Red River Salines		3	
75	Davy Crockett National Forest		1	
CEGR035040	***Southeastern coastal plain nepheline syenite glades and barrens***	**NEPHELINE SYENITE HERBACEOUS GLADES**		**2**
1	Granite Mountain / Gillam Park		1	
3	Nepheline Syenite Glades		1	
CEGR035730	***Southeastern coastal plain circumneutral/basic upland forests and woodlands***	**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS**		**52**
16	Nacatoch Ravines		1	
22	Seven Devils		1	

Element Code	Scientific Name	Common Name	Goal
		Viable	
CEGR036010	***Southeastern coastal plain baygalls and bayheads***	**SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS**	**60**
2	Lorance Creek / Big Lake	1	
4	Pine Bluff Arsenal	5	
5	Saline River	2	
12	Ross Foundation	11	
17	Poison Springs	11	
20	Lower Ouachita	2	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	3	
27	Bayou Dorcheat	1	
28	Miller County Sandhills	1	
30	Daingerfield State Park	1	
31	Bayou Bartholomew	1	
37	Bodcau	1	
38	Caddo Lake Complex	3	
51	Schoolhouse Springs	1	
61	Ham Creek - Mt. Enterprise	1	
67	Tonkawa Sandhills/Naconiche Creek	1	
70	Northern Sabine National Forest	3	
77	Sam Houston National Forest	1	

Element Code	Scientific Name	Common Name	Viable	Goal
CEGR037520	***Southeastern coastal plain calcareous patch prairies***	**SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES**		**52**
7	Terre Noire		2	
13	White Cliffs Natural Area		2	
14	Saratoga / Columbus / Washington Blackland Prairies		3	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		7	
37	Bodcau		2	
49	Barksdale & Ammo Plant		1	
52	Sligo 3/4		1	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
76	Riverside Catahoula Barrens		1	
77	Sam Houston National Forest		1	
CEGR037530	***Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands***	**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS**		**15**
8	DeQueen / Dierks Glade Systems		1	
13	White Cliffs Natural Area		4	
14	Saratoga / Columbus / Washington Blackland Prairies		4	
16	Nacatoch Ravines		1	
37	Bodcau		1	
38	Caddo Lake Complex		1	

Element Code	Scientific Name	Common Name	Viable	Goal
49	Barksdale & Ammo Plant		1	
76	Riverside Catahoula Barrens		1	
78	Lower Trinity River		1	
CEGR037540	***Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests***	**SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS**		**35**
7	Terre Noire		1	
10	Little River from Glover River to Millwood Lake		1	
13	White Cliffs Natural Area		2	
14	Saratoga / Columbus / Washington Blackland Prairies		3	
16	Nacatoch Ravines		1	
22	Seven Devils		1	
24	White Oak Creek		1	
26	Sulfur River Wildlife Management Area		1	
32	Delaney Mt.		1	
37	Bodcau		1	
38	Caddo Lake Complex		1	
78	Lower Trinity River		1	
CEGR038510	***Southeastern coastal plain backswamp / slough floodplain forests***	**SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS**		**23**
2	Lorance Creek / Big Lake		1	

Element Code	Scientific Name	Common Name	Goal Viable
4	Pine Bluff Arsenal		4
5	Saline River		1
9	Western Saline		1
10	Little River from Glover River to Millwood Lake		13
16	Nacatoch Ravines		2
18	Palmetto Flats		1
19	Bois D'Arc		1
20	Lower Ouachita		1
22	Seven Devils		1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		5
26	Sulfur River Wildlife Management Area		3
27	Bayou Dorcheat		1
34	Caney District, Corney Unit - Kisatchie National Forest		1
35	Caney District, Caney Unit - Kisatchie National Forest		1
36	Bayou DeLoutre		1
37	Bodcau		4
38	Caddo Lake Complex		5
44	Upper Big Sandy Creek		2
48	Upper Sabine River Complex		3

Element Code	Scientific Name	Common Name	Viable	Goal
49	Barksdale & Ammo Plant		1	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
57	Lake Athens Bogs		1	
58	Canisnia Lake / Bayou Pierre		1	
59	Black Lake Bayou & Red River Salines		1	
70	Northern Sabine National Forest		1	
75	Davy Crockett National Forest		1	
78	Lower Trinity River		2	
CEGR038520	***Southeastern coastal plain bottomland hardwood forests***	**SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS**		**23**
2	Lorance Creek / Big Lake		1	
4	Pine Bluff Arsenal		1	
5	Saline River		1	
9	Western Saline		1	
10	Little River from Glover River to Millwood Lake		1	
15	Weyerhaeuser Tiak Land Swap		2	
16	Nacatoch Ravines		3	
18	Palmetto Flats		1	
19	Bois D'Arc		1	
20	Lower Ouachita		2	

Element Code	Scientific Name	Common Name	Goal Viable
22	Seven Devils		1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1
24	White Oak Creek		2
26	Sulfur River Wildlife Management Area		1
27	Bayou Dorcheat		2
28	Miller County Sandhills		1
29	Cornie Creek Bottoms		1
30	Daingerfield State Park		1
31	Bayou Bartholomew		1
34	Caney District, Corney Unit - Kisatchie National Forest		1
35	Caney District, Caney Unit - Kisatchie National Forest		1
37	Bodcau		5
38	Caddo Lake Complex		4
44	Upper Big Sandy Creek		2
45	Red River Macrosite, North Highlands, Gilliam-1		1
48	Upper Sabine River Complex		7
49	Barksdale & Ammo Plant		1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1
58	Canisnia Lake / Bayou Pierre		1

Element Code	Scientific Name	Common Name	Goal
		Viable	
59	Black Lake Bayou & Red River Salines	1	
60	Tolar Ranch	2	
65	Striker Creek	2	
68	Mud Creek	1	
70	Northern Sabine National Forest	2	
71	Upper Neches River	2	
72	Attoyac River	1	
75	Davy Crockett National Forest	1	
77	Sam Houston National Forest	5	
78	Lower Trinity River	6	
CEGR038530	***Southeastern coastal plain riverfront and levee bottomland forests***	**SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS**	**40**
2	Lorance Creek / Big Lake	1	
4	Pine Bluff Arsenal	4	
5	Saline River	11	
9	Western Saline	1	
10	Little River from Glover River to Millwood Lake	6	
16	Nacatoch Ravines	1	
18	Palmetto Flats	1	
19	Bois D'Arc	1	

Element Code	Scientific Name	Common Name	Viable	Goal
20	Lower Ouachita		14	
22	Seven Devils		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		13	
26	Sulfur River Wildlife Management Area		1	
27	Bayou Dorcheat		1	
30	Daingerfield State Park		1	
31	Bayou Bartholomew		1	
37	Bodcau		1	
38	Caddo Lake Complex		3	
43	Minden Unit of Kisatchie National Forest		1	
48	Upper Sabine River Complex		1	
49	Barksdale & Ammo Plant		1	
58	Canisnia Lake / Bayou Pierre		1	
CEGR038535	***Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests***	**SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS**		**5**
24	White Oak Creek		1	
78	Lower Trinity River		1	
CEGR048010	***Eastern wide ranging open marshes and ponds***	**EASTERN WIDE RANGING OPEN MARSHES AND PONDS**		**15**
2	Lorance Creek / Big Lake		1	

Element Code	Scientific Name	Common Name	Viable	Goal
10	Little River from Glover River to Millwood Lake		1	
16	Nacatoch Ravines		1	
17	Poison Springs		1	
20	Lower Ouachita		1	
22	Seven Devils		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
26	Sulfur River Wildlife Management Area		1	
27	Bayou Dorcheat		2	
40	Mill Creek Ranch		1	
CEGR051010	***Cross timbers oak forests and woodlands***	**CROSS TIMBERS OAK FORESTS AND WOODLANDS**		**10**
54	Purtis Creek State Recreation Area		1	
60	Tolar Ranch		1	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		1	
64	Camp Bette Perot		1	
CEGR082010	***Eastern wide-ranging shrub swamps***	**EASTERN WIDE-RANGING SHRUB SWAMPS**		**4**
5	Saline River		4	
16	Nacatoch Ravines		1	
17	Poison Springs		5	
22	Seven Devils		1	

Element Code	Scientific Name	Common Name	Viable	Goal
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
26	Sulfur River Wildlife Management Area		1	
27	Bayou Dorcheat		1	
28	Miller County Sandhills		1	

Crustacean

ICMAL14500	***Procambarus elegans***	**CRAYFISH**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
34	Caney District, Corney Unit - Kisatchie National Forest		1	
ICMAL51010	***Faxonella beyeri***	**CRAYFISH**		**5**
66	Gum Pond		1	

Fish

AFCAA02020	***Scaphirhynchus platorynchus***	**SHOVELNOSE STURGEON**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
58	Canisnia Lake / Bayou Pierre		1	
AFCAB01010	***Polyodon spathula***	**PADDLEFISH**		**5**
36	Bayou DeLoutre		1	
38	Caddo Lake Complex		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
46	Bayou D'arbonne		1	

Element Code	Scientific Name	Common Name	Viable	Goal
71	Upper Neches River		1	
AFCBA01050	***Atractosteus spatula***	**ALLIGATOR GAR**		**5**
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCFA01020	***Alosa alabamae***	**ALABAMA SHAD**		**4**
11	Little Missouri and Lower Antoine Rivers		3	
17	Poison Springs		1	
20	Lower Ouachita		7	
AFCJB28140	***Notropis atrocaudalis***	**BLACKSPOT SHINER**		**5**
9	Western Saline		2	
10	Little River from Glover River to Millwood Lake		2	
AFCJB28160	***Notropis bairdi***	**RED RIVER SHINER**		**5**
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCJB28540	***Notropis hubbsi***	**BLACKNOSE SHINER**		**10**
45	Red River Macrosite, North Highlands, Gilliam-1		4	
AFCJB28650	***Notropis maculatus***	**TAILLIGHT SHINER**		**2**
20	Lower Ouachita		2	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCJB28870	***Notropis shumardi***	**SILVERBAND SHINER**		**2**
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCJB53010	***Macrhybopsis aestivalis***	**SPECKLED CHUB**		**5**

Element Code	Scientific Name	Common Name	Viable	Goal
5	Saline River		1	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCJC04010	***Cycleptus elongatus***	**BLUE SUCKER**		**8**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
31	Bayou Bartholomew		2	
58	Canisnia Lake / Bayou Pierre		1	
71	Upper Neches River		1	
AFCKA02040	***Noturus eleutherus***	**MOUNTAIN MADTOM**		**5**
5	Saline River		1	
20	Lower Ouachita		1	
AFCNB04270	***Fundulus blairae***	**WESTERN STARHEAD TOPMINNOW**		**5**
5	Saline River		1	
20	Lower Ouachita		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
AFCQC01010	***Crystallaria asprella***	**CRYSTAL DARTER**		**8**
5	Saline River		1	
10	Little River from Glover River to Millwood Lake		1	
20	Lower Ouachita		3	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		5	

Element Code	Scientific Name	Common Name	Viable	Goal
AFCQC01040	***Ammocrypta clara***	**WESTERN SAND DARTER**		**6**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	

Insect

IICOL42010	***Nicrophorus americanus***	**AMERICAN BURYING BEETLE**		**5**
15	Weyerhaeuser Tiak Land Swap		1	
IILEYC0310	***Papaipema eryngii***	**RATTLESNAKE-MASTER BORER MOTH**		**5**
4	Pine Bluff Arsenal		1	

Mammal

AMACC08020	***Corynorhinus rafinesquii***	**SOUTHEASTERN BIG-EARED BAT**		**5**
10	Little River from Glover River to Millwood Lake		2	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
AMAJB01010	***Ursus americanus***	**AMERICAN BLACK BEAR**		**4**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		1	
AMAJF05010	***Spilogale putorius***	**EASTERN SPOTTED SKUNK**		**5**
10	Little River from Glover River to Millwood Lake		1	

Mussel

IMBIV07010	***Arkansia wheeleri***	**OUACHITA ROCK-POCKETBOOK**		**5**
20	Lower Ouachita		2	
IMBIV08010	***Cumberlandia monodonta***	**SPECTACLECASE**		**5**
20	Lower Ouachita		1	
IMBIV10010	***Cyprogenia aberti***	**WESTERN FANSHELL**		**5**

Element Code	Scientific Name	Common Name	Viable	Goal
5	Saline River		1	
20	Lower Ouachita		2	
31	Bayou Bartholomew		1	
IMBIV13010	***Ellipsaria lineolata***	**BUTTERFLY**		**5**
31	Bayou Bartholomew		1	
IMBIV14100	***Elliptio dilatata***	**SPIKE/LADYFINGER**		**5**
31	Bayou Bartholomew		3	
IMBIV21110	***Lampsilis abrupta***	**PINK MUCKET**		**5**
9	Western Saline		1	
10	Little River from Glover River to Millwood Lake		1	
20	Lower Ouachita		9	
31	Bayou Bartholomew		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
IMBIV21150	***Lampsilis powellii***	**ARKANSAS FATMUCKET**		**5**
5	Saline River		1	
20	Lower Ouachita		1	
IMBIV31010	***Obovaria jacksoniana***	**SOUTHERN HICKORYNUT**		**10**
10	Little River from Glover River to Millwood Lake		1	
20	Lower Ouachita		2	
34	Caney District, Corney Unit - Kisatchie National Forest		1	

Element Code	Scientific Name	Common Name	Viable	Goal
IMBIV35090	***Pleurobema cordatum***	**OHIO PIGTOE**		**5**
5	Saline River		1	
IMBIV35250	***Pleurobema rubrum***	**PYRAMID PIGTOE**		**8**
5	Saline River		1	
20	Lower Ouachita		24	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		12	
27	Bayou Dorcheat		1	
31	Bayou Bartholomew		1	
IMBIV35270	***Pleurobema riddellii***	**LOUISIANA PIGTOE**		**5**
46	Bayou D'arbonne		1	
IMBIV37020	***Potamilus amphichaenus***	**TEXAS HEELSPLITTER**		**5**
48	Upper Sabine River Complex		1	
IMBIV39040	***Quadrula cylindrica***	**RABBITSFOOT**		**5**
31	Bayou Bartholomew		1	
IMBIV39041	***Quadrula cylindrica cylindrica***	**RABBITSFOOT**		**5**
10	Little River from Glover River to Millwood Lake		2	
20	Lower Ouachita		2	
IMBIV39050	***Quadrula fragosa***	**WINGED MAPLELEAF**		**5**
20	Lower Ouachita		2	
IMBIV47020	***Villosa arkansasensis***	**OUACHITA CREEKSHELL**		**5**

Element Code	Scientific Name	Common Name	Viable	Goal
20	Lower Ouachita		2	

Plant

PDAST0T2L4	***Aster puniceus var. scabricaulis***	**ROUGH-STEMMED ASTER**		**8**
63	Burkitt Foundation, Gus Engling Wildlife Management Area		1	
69	Crystal Lake Tract		1	
PDAST2L0E0	***Coreopsis intermedia***	**GOLDEN WAVE TICKSEED**		**5**
38	Caddo Lake Complex		1	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		3	
64	Camp Bette Perot		1	
PDAST5X070	***Liatris cymosa***	**BRANCHED GAY-FEATHER**		**8**
76	Riverside Catahoula Barrens		3	
PDAST7K060	***Prenanthes barbata***	**BARBED RATTLESNAKE ROOT**		**8**
21	Prenanthes Barbata Site		1	
43	Minden Unit of Kisatchie National Forest		1	
68	Mud Creek		1	
70	Northern Sabine National Forest		1	
PDAST96020	***Tetragonotheca ludoviciana***	**LOUISIANA SQUARE-HEAD**		**5**
67	Tonkawa Sandhills/Naconiche Creek		1	
70	Northern Sabine National Forest		2	
75	Davy Crockett National Forest		1	

Element Code	Scientific Name	Common Name	Viable	Goal
PDBRA1L080	***Leavenworthia texana***	**TEXAS GOLDEN GLADE CRESS**		**5**
74	Weches Glades		1	
PDBRA1N1W0	***Lesquerella pallida***	**WHITE BLADDERPOD**		**5**
74	Weches Glades		5	
PDCAR15010	***Geocarpon minimum***	**GEOCARPON**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		2	
PDFAB080C0	***Amorpha paniculata***	**PANICLED INDIGOBUSH**		**5**
16	Nacatoch Ravines		1	
PDFAB0F8C0	***Astragalus soxmaniorum***	**SOXMAN MILK-VETCH**		**5**
17	Poison Springs		7	
28	Miller County Sandhills		1	
38	Caddo Lake Complex		1	
PDFAG05040	***Quercus arkansana***	**ARKANSAS OAK**		**5**
16	Nacatoch Ravines		1	
17	Poison Springs		6	
37	Bodcau		5	
38	Caddo Lake Complex		1	
PDGEN01020	***Bartonia texana***	**TEXAS SCREWSTEM**		**5**
67	Tonkawa Sandhills/Naconiche Creek		1	
77	Sam Houston National Forest		1	

Element Code	Scientific Name	Common Name	Viable	Goal
PDMAL0H0E0	***Hibiscus dasycalyx***	**NECHES RIVER MALLOW**		**5**
68	Mud Creek		1	
71	Upper Neches River		1	
75	Davy Crockett National Forest		1	
PDRAN0M020	***Thalictrum arkansanum***	**MEADOWRUE**		**12**
10	Little River from Glover River to Millwood Lake		6	
PDSAX0P010	***Parnassia asarifolia***	**KIDNEYLEAF GRASS-OF-PARNASSUS**		**5**
67	Tonkawa Sandhills/Naconiche Creek		1	
PDSCR01130	***Agalinis auriculata***	**EARLEAF FALSE FOXGLOVE**		**5**
14	Saratoga / Columbus / Washington Blackland Prairies		1	
PMCYP033K0	***Carex decomposita***	**CYPRESSKNEE SEDGE**		**5**
26	Sulfur River Wildlife Management Area		1	
PMCYP061G0	***Cyperus grayioides***	**ILLINOIS FLATSEDGE**		**5**
17	Poison Springs		5	
63	Burkitt Foundation, Gus Engling Wildlife Management Area		3	
67	Tonkawa Sandhills/Naconiche Creek		3	
70	Northern Sabine National Forest		2	
PMERI01040	***Eriocaulon koernickianum***	**SMALL HEADED PIPEWORT**		**5**
1	Granite Mountain / Gillam Park		1	
3	Nepheline Syenite Glades		2	

Element Code	Scientific Name	Common Name	Viable	Goal
63	Burkitt Foundation, Gus Engling Wildlife Management Area		1	
PMLIL1S030	***Schoenolirion wrightii***	**SUNNYBELL**		**5**
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge		11	
59	Black Lake Bayou & Red River Salines		2	
PMLIL200X0	***Trillium texanum***	**TEXAS TRILLIUM / WAKEROBIN**		**12**
10	Little River from Glover River to Millwood Lake		1	
67	Tonkawa Sandhills/Naconiche Creek		1	
PMORC0Q0F0	***Cypripedium kentuckiense***	**SOUTHERN LADY'S SLIPPER**		**10**
11	Little Missouri and Lower Antoine Rivers		1	
16	Nacatoch Ravines		3	

Reptile

ARAAB02010	***Macrochelys temminckii***	**ALLIGATOR SNAPPING TURTLE**		**5**
4	Pine Bluff Arsenal		1	
27	Bayou Dorcheat		1	
31	Bayou Bartholomew		1	
37	Bodcau		1	
38	Caddo Lake Complex		1	
43	Minden Unit of Kisatchie National Forest		1	
45	Red River Macrosite, North Highlands, Gilliam-1		1	
48	Upper Sabine River Complex		1	

Element Code	Scientific Name	Common Name	Viable	Goal
68	Mud Creek		1	
75	Davy Crockett National Forest		1	
78	Lower Trinity River		1	
ARADE02040	***Crotalus horridus***	**TIMBER RATTLESNAKE**		**5**
4	Pine Bluff Arsenal		1	
5	Saline River		1	
10	Little River from Glover River to Millwood Lake		2	
12	Ross Foundation		2	
20	Lower Ouachita		1	
35	Caney District, Caney Unit - Kisatchie National Forest		1	
37	Bodcau		1	
49	Barksdale & Ammo Plant		1	
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou		1	
68	Mud Creek		1	

Conservation Targets and Conservation Areas - Unknown Viability

Scientific Name	Common Name
Map ID **Conservation Area**	

Amphibian

Hyla avivoca — **BIRD-VOICED TREEFROG**

10 Little River from Glover River to Millwood Lake

Bird

Aimophila aestivalis — **BACHMAN'S SPARROW**

10 Little River from Glover River to Millwood Lake

49 Barksdale & Ammo Plant

Picoides borealis — **RED COCKADED WOODPECKER**

23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge

77 Sam Houston National Forest

Sterna antillarum athalassos — **INTERIOR LEAST TERN**

45 Red River Macrosite, North Highlands, Gilliam-1

58 Canisnia Lake / Bayou Pierre

Community

Arundinaria gigantea ssp. Gigantea shrubland — **GIANT CANE SHRUBLAND**

23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge

Coastal plain upland pine and pine-hardwood forests — **COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS**

38 Caddo Lake Complex

Small stream forests — **SMALL STREAM FORESTS**

15 Weyerhaeuser Tiak Land Swap

52 Sligo 3/4

Scientific Name	Common Name
Map ID Conservation Area	
Southeastern coastal plain backswamp / slough floodplain forests	**SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS**
10 Little River from Glover River to Millwood Lake	
37 Bodcau	
Southeastern coastal plain baygalls and bayheads	**SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS**
38 Caddo Lake Complex	
Southeastern coastal plain bottomland hardwood forests	**SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS**
6 McCurtain Co	
10 Little River from Glover River to Millwood Lake	
15 Weyerhaeuser Tiak Land Swap	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	
37 Bodcau	
45 Red River Macrosite, North Highlands, Gilliam-1	
70 Northern Sabine National Forest	
Southeastern coastal plain calcareous patch prairies	**SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES**
37 Bodcau	
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	
77 Sam Houston National Forest	
Southeastern coastal plain dry-mesic loblolly pine / hardwood forests	**SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS**
15 Weyerhaeuser Tiak Land Swap	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	
38 Caddo Lake Complex	
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	
70 Northern Sabine National Forest	

Scientific Name	Common Name
Map ID Conservation Area	
Southeastern coastal plain upland calcareous mixed hardwood forests	**SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS**
37 Bodcau	
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	
78 Lower Trinity River	
Southeastern coastal plain upland longleaf pinelands	**SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS**
70 Northern Sabine National Forest	
Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks	**SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS**
37 Bodcau	
41 Burma Road	
42 Stow Creek Woods	
70 Northern Sabine National Forest	
Southeastern coastal plain wet hardwood flatwoods	**SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS**
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	
38 Caddo Lake Complex	
56 Bistineau Calcareous Forest, Bossier Point / Loggy Bayou	

Crustacean

Procambarus elegans	**CRAYFISH**
36 Bayou DeLoutre	
Procambarus geminus	**CRAYFISH**
27 Bayou Dorcheat	

Scientific Name	Common Name
Map ID	**Conservation Area**

Fish

Crystallaria asprella — **CRYSTAL DARTER**

- 10 Little River from Glover River to Millwood Lake
- 23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
- 31 Bayou Bartholomew

Cycleptus elongatus — **BLUE SUCKER**

- 15 Weyerhaeuser Tiak Land Swap
- 23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
- 58 Canisnia Lake / Bayou Pierre

Fundulus blairae — **WESTERN STARHEAD TOPMINNOW**

- 6 McCurtain Co
- 10 Little River from Glover River to Millwood Lake

Notropis atrocaudalis — **BLACKSPOT SHINER**

- 6 McCurtain Co
- 10 Little River from Glover River to Millwood Lake
- 15 Weyerhaeuser Tiak Land Swap

Notropis maculatus — **TAILLIGHT SHINER**

- 10 Little River from Glover River to Millwood Lake

Notropis shumardi — **SILVERBAND SHINER**

- 15 Weyerhaeuser Tiak Land Swap

Noturus eleutherus — **MOUNTAIN MADTOM**

- 6 McCurtain Co
- 10 Little River from Glover River to Millwood Lake

Polyodon spathula — **PADDLEFISH**

- 15 Weyerhaeuser Tiak Land Swap
- 36 Bayou DeLoutre
- 38 Caddo Lake Complex

Scientific Name	Common Name
Map ID Conservation Area	
46 Bayou D'arbonne	
Scaphirhynchus platorynchus	**SHOVELNOSE STURGEON**
15 Weyerhaeuser Tiak Land Swap	

Insect

Nicrophorus americanus	**AMERICAN BURYING BEETLE**
15 Weyerhaeuser Tiak Land Swap	
Somatochlora margarita	**TEXAS EMERALD DRAGONFLY**
75 Davy Crockett National Forest	
77 Sam Houston National Forest	

Mammal

Corynorhinus rafinesquii	**SOUTHEASTERN BIG-EARED BAT**
10 Little River from Glover River to Millwood Lake	
78 Lower Trinity River	
Myotis austroriparius	**SOUTHEASTERN MYOTIS BAT**
4 Pine Bluff Arsenal	
23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge	

Mussel

Arkansia wheeleri	**OUACHITA ROCK-POCKETBOOK**
10 Little River from Glover River to Millwood Lake	
Ellipsaria lineolata	**BUTTERFLY**
10 Little River from Glover River to Millwood Lake	
31 Bayou Bartholomew	
Elliptio dilatata	**SPIKE/LADYFINGER**
31 Bayou Bartholomew	
Leptodea leptodon	**SCALESHELL MUSSEL**

Scientific Name	Common Name
Map ID Conservation Area	
20 Lower Ouachita	
Obovaria jacksoniana	**SOUTHERN HICKORYNUT**
6 McCurtain Co	
10 Little River from Glover River to Millwood Lake	
Pleurobema cordatum	**OHIO PIGTOE**
10 Little River from Glover River to Millwood Lake	
20 Lower Ouachita	
Ptychobranchus occidentalis	**OUACHITA KIDNEYSHELL**
6 McCurtain Co	
10 Little River from Glover River to Millwood Lake	
31 Bayou Bartholomew	
Quadrula cylindrica	**RABBITSFOOT**
10 Little River from Glover River to Millwood Lake	
31 Bayou Bartholomew	
Villosa arkansasensis	**OUACHITA CREEKSHELL**
6 McCurtain Co	
10 Little River from Glover River to Millwood Lake	

Plant

Amorpha paniculata	**PANICLED INDIGOBUSH**
15 Weyerhaeuser Tiak Land Swap	
Astragalus soxmaniorum	**SOXMAN MILK-VETCH**
38 Caddo Lake Complex	
Callirhoe bushii	**BUSH'S POPPY MALLOW**
10 Little River from Glover River to Millwood Lake	
Carex decomposita	**CYPRESSKNEE SEDGE**
38 Caddo Lake Complex	
Coreopsis intermedia	**GOLDEN WAVE TICKSEED**

Scientific Name	Common Name
Map ID	**Conservation Area**
	38 Caddo Lake Complex
Crataegus warneri	**WARNER'S HAWTHORNE**
	30 Daingerfield State Park
	48 Upper Sabine River Complex
	77 Sam Houston National Forest
Cyperus grayioides	**ILLINOIS FLATSEDGE**
	17 Poison Springs
	39 Gulf Stream Sandhill
Cypripedium kentuckiense	**SOUTHERN LADY'S SLIPPER**
	38 Caddo Lake Complex
Geocarpon minimum	**GEOCARPON**
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
Leavenworthia aurea	**GOLDEN GLADE CRESS**
	10 Little River from Glover River to Millwood Lake
Lesquerella angustifolia	**THREE-LEAVED BLADDERPOD**
	10 Little River from Glover River to Millwood Lake
Lesquerella pallida	**WHITE BLADDERPOD**
	74 Weches Glades
Lindera melissifolia	**PONDBERRY**
	10 Little River from Glover River to Millwood Lake
Quercus arkansana	**ARKANSAS OAK**
	14 Saratoga / Columbus / Washington Blackland Prairies
	16 Nacatoch Ravines
	17 Poison Springs
	36 Bayou DeLoutre
	38 Caddo Lake Complex
Schoenolirion wrightii	**SUNNYBELL**
	23 Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
Trillium texanum	**TEXAS TRILLIUM / WAKEROBIN**

Scientific Name	Common Name
Map ID	**Conservation Area**
38	Caddo Lake Complex
67	Tonkawa Sandhills/Naconiche Creek

Reptile

Crotalus horridus	**TIMBER RATTLESNAKE**
75	Davy Crockett National Forest
Macrochelys temminckii	**ALLIGATOR SNAPPING TURTLE**
6	McCurtain Co
10	Little River from Glover River to Millwood Lake
38	Caddo Lake Complex
63	Burkitt Foundation, Gus Engling Wildlife Management Area

UWGCP - Target Occurrences of Unknown Viability

Element Code	Scientific Name	Common Name	Goal	Unknown
Amphibian				
AAABC02030	*Hyla avivoca*	BIRD-VOICED TREEFROG	**5**	
10	Little River from Glover River to Millwood Lake			3
Bird				
ABNNM08102	*Sterna antillarum athalassos*	INTERIOR LEAST TERN	**5**	
45	Red River Macrosite, North Highlands, Gilliam-1			12
58	Canisnia Lake / Bayou Pierre			3
ABNYF07060	*Picoides borealis*	RED COCKADED WOODPECKER	**5**	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			106
77	Sam Houston National Forest			1
ABPBX91050	*Aimophila aestivalis*	BACHMAN'S SPARROW	**5**	
10	Little River from Glover River to Millwood Lake			1
49	Barksdale & Ammo Plant			1
Community				
320 series	*Southeastern coastal plain upland longleaf pinelands*	SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS	**6**	
70	Northern Sabine National Forest			1
365 series	*Small stream forests*	SMALL STREAM FORESTS	**75**	
15	Weyerhaeuser Tiak Land Swap			3
52	Sligo 3/4			1

Element Code	Scientific Name	Common Name	Goal	Unknown
CEGL003836	*Arundinaria gigantea ssp. Gigantea shrubland*	GIANT CANE SHRUBLAND	**9**	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			3
CEGR030550	*Coastal plain upland pine and pine-hardwood forests*	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	**42**	
38	Caddo Lake Complex			1
CEGR030560	*Southeastern coastal plain dry-mesic loblolly pine / hardwood forests*	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	**54**	
15	Weyerhaeuser Tiak Land Swap			1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			1
38	Caddo Lake Complex			1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou			1
70	Northern Sabine National Forest			1
CEGR031010	*Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks*	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	**70**	
37	Bodcau			2
41	Burma Road			1
42	Stow Creek Woods			1
70	Northern Sabine National Forest			1
CEGR031020	*Southeastern coastal plain upland calcareous mixed hardwood forests*	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	**70**	
37	Bodcau			1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou			1
78	Lower Trinity River			2

Element Code	Scientific Name	Common Name	Goal	Unknown
CEGR033040	*Southeastern coastal plain wet hardwood flatwoods*	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	**55**	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			1
38	Caddo Lake Complex			1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou			2
CEGR036010	*Southeastern coastal plain baygalls and bayheads*	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	**60**	
38	Caddo Lake Complex			1
CEGR037520	*Southeastern coastal plain calcareous patch prairies*	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	**52**	
37	Bodcau			1
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou			2
77	Sam Houston National Forest			13
CEGR038510	*Southeastern coastal plain backswamp / slough floodplain forests*	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	**23**	
10	Little River from Glover River to Millwood Lake			3
37	Bodcau			2
CEGR038520	*Southeastern coastal plain bottomland hardwood forests*	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	**23**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			12
15	Weyerhaeuser Tiak Land Swap			4
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			2
37	Bodcau			2
45	Red River Macrosite, North Highlands, Gilliam-1			1

Element Code	Scientific Name	Common Name	Goal	Unknown
70	Northern Sabine National Forest			1
Crustacean				
ICMAL14500	*Procambarus elegans*	CRAYFISH	**5**	
36	Bayou DeLoutre			1
ICMAL14560	*Procambarus geminus*	CRAYFISH	**6**	
27	Bayou Dorcheat			1
Fish				
AFCAA02020	*Scaphirhynchus platorynchus*	SHOVELNOSE STURGEON	**5**	
15	Weyerhaeuser Tiak Land Swap			2
AFCAB01010	*Polyodon spathula*	PADDLEFISH	**5**	
15	Weyerhaeuser Tiak Land Swap			1
36	Bayou DeLoutre			2
38	Caddo Lake Complex			1
46	Bayou D'arbonne			1
AFCJB28140	*Notropis atrocaudalis*	BLACKSPOT SHINER	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			1
15	Weyerhaeuser Tiak Land Swap			4
AFCJB28650	*Notropis maculatus*	TAILLIGHT SHINER	**2**	
10	Little River from Glover River to Millwood Lake			1
AFCJB28870	*Notropis shumardi*	SILVERBAND SHINER	**2**	
15	Weyerhaeuser Tiak Land Swap			1
AFCJC04010	*Cycleptus elongatus*	BLUE SUCKER	**8**	

Element Code	Scientific Name	Common Name	Goal	Unknown
15	Weyerhaeuser Tiak Land Swap			1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			1
58	Canisnia Lake / Bayou Pierre			1
AFCKA02040	*Noturus eleutherus*	MOUNTAIN MADTOM	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			5
AFCNB04270	*Fundulus blairae*	WESTERN STARHEAD TOPMINNOW	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			6
AFCQC01010	*Crystallaria asprella*	CRYSTAL DARTER	**8**	
10	Little River from Glover River to Millwood Lake			4
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			1
31	Bayou Bartholomew			1
Insect				
IICOL42010	*Nicrophorus americanus*	AMERICAN BURYING BEETLE	**5**	
15	Weyerhaeuser Tiak Land Swap			48
IIODO32160	*Somatochlora margarita*	TEXAS EMERALD DRAGONFLY	**8**	
75	Davy Crockett National Forest			4
77	Sam Houston National Forest			1
Mammal				
AMACC01030	*Myotis austroriparius*	SOUTHEASTERN MYOTIS BAT	**5**	
4	Pine Bluff Arsenal			1
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			1

Element Code	Scientific Name	Common Name	Goal	Unknown
AMACC08020	*Corynorhinus rafinesquii*	SOUTHEASTERN BIG-EARED BAT	**5**	
10	Little River from Glover River to Millwood Lake			1
78	Lower Trinity River			1

Mussel

IMBIV07010	*Arkansia wheeleri*	OUACHITA ROCK-POCKETBOOK	**5**	
10	Little River from Glover River to Millwood Lake			3
IMBIV13010	*Ellipsaria lineolata*	BUTTERFLY	**5**	
10	Little River from Glover River to Millwood Lake			6
31	Bayou Bartholomew			2
IMBIV14100	*Elliptio dilatata*	SPIKE/LADYFINGER	**5**	
31	Bayou Bartholomew			6
IMBIV24020	*Leptodea leptodon*	SCALESHELL MUSSEL	**5**	
20	Lower Ouachita			1
IMBIV31010	*Obovaria jacksoniana*	SOUTHERN HICKORYNUT	**10**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			4
IMBIV35090	*Pleurobema cordatum*	OHIO PIGTOE	**5**	
10	Little River from Glover River to Millwood Lake			8
20	Lower Ouachita			1
IMBIV38040	*Ptychobranchus occidentalis*	OUACHITA KIDNEYSHELL	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			13
31	Bayou Bartholomew			2

Element Code	Scientific Name	Common Name	Goal	Unknown
IMBIV39040	*Quadrula cylindrica*	RABBITSFOOT	**5**	
10	Little River from Glover River to Millwood Lake			13
31	Bayou Bartholomew			1
IMBIV47020	*Villosa arkansasensis*	OUACHITA CREEKSHELL	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			7

Plant

PDAST2L0E0	*Coreopsis intermedia*	GOLDEN WAVE TICKSEED	**5**	
38	Caddo Lake Complex			6
PDBRA1L020	*Leavenworthia aurea*	GOLDEN GLADE CRESS	**12**	
10	Little River from Glover River to Millwood Lake			8
PDBRA1N020	*Lesquerella angustifolia*	THREE-LEAVED BLADDERPOD	**10**	
10	Little River from Glover River to Millwood Lake			3
PDBRA1N1W0	*Lesquerella pallida*	WHITE BLADDERPOD	**5**	
74	Weches Glades			1
PDCAR15010	*Geocarpon minimum*	GEOCARPON	**5**	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			31
PDFAB080C0	*Amorpha paniculata*	PANICLED INDIGOBUSH	**5**	
15	Weyerhaeuser Tiak Land Swap			1
PDFAB0F8C0	*Astragalus soxmaniorum*	SOXMAN MILK-VETCH	**5**	
38	Caddo Lake Complex			1
PDFAG05040	*Quercus arkansana*	ARKANSAS OAK	**5**	
14	Saratoga / Columbus / Washington Blackland Prairies			1

Element Code	Scientific Name	Common Name	Goal	Unknown
16	Nacatoch Ravines			1
17	Poison Springs			2
36	Bayou DeLoutre			1
38	Caddo Lake Complex			1
PDLAU07020	*Lindera melissifolia*	PONDBERRY	**5**	
10	Little River from Glover River to Millwood Lake			1
PDMAL0A020	*Callirhoe bushii*	BUSH'S POPPY MALLOW	**5**	
10	Little River from Glover River to Millwood Lake			2
PDROS0H5G0	*Crataegus warneri*	WARNER'S HAWTHORNE	**8**	
30	Daingerfield State Park			1
48	Upper Sabine River Complex			1
77	Sam Houston National Forest			1
PMCYP033K0	*Carex decomposita*	CYPRESSKNEE SEDGE	**5**	
38	Caddo Lake Complex			1
PMCYP061G0	*Cyperus grayioides*	ILLINOIS FLATSEDGE	**5**	
17	Poison Springs			1
39	Gulf Stream Sandhill			1
PMLIL1S030	*Schoenolirion wrightii*	SUNNYBELL	**5**	
23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge			5
PMLIL200X0	*Trillium texanum*	TEXAS TRILLIUM / WAKEROBIN	**12**	
38	Caddo Lake Complex			2
67	Tonkawa Sandhills/Naconiche Creek			1
PMORC0Q0F0	*Cypripedium kentuckiense*	SOUTHERN LADY'S SLIPPER	**10**	

Element Code	Scientific Name	Common Name	Goal	Unknown
38	Caddo Lake Complex			1

Reptile

ARAAB02010	*Macrochelys temminckii*	ALLIGATOR SNAPPING TURTLE	**5**	
6	McCurtain Co			1
10	Little River from Glover River to Millwood Lake			3
38	Caddo Lake Complex			1
63	Burkitt Foundation, Gus Engling Wildlife Management Area			1
ARADE02040	*Crotalus horridus*	TIMBER RATTLESNAKE	**5**	
75	Davy Crockett National Forest			1

Stresses and Sources of Stress By Site

	Source	Stress
1	**Granite Mountain / Gillam Park**	
	Development -- commercial	Habitat destruction or conversion
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Resource extraction -- mining	Habitat destruction or conversion
2	**Lorance Creek / Big Lake**	
	Development -- residential	Habitat destruction or conversion
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
3	**Nepheline Syenite Glades**	
	Development -- commercial	Habitat destruction or conversion
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Resource extraction -- mining	Habitat destruction or conversion
4	**Pine Bluff Arsenal**	
	Development -- commercial	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
5	**Saline River**	
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
6	**McCurtain Co**	

	Source	Stress
7	**Terre Noire**	
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Livestock grazing	Altered composition/structure
8	**DeQueen / Dierks Glade Systems**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Altered composition/structure
	Resource extraction -- mining	Habitat destruction or conversion
9	**Western Saline**	
	Dams / reservoirs	Habitat fragmentation
	Industrialized livestock production	Nutrient loading
	Resource extraction -- mining	Habitat destruction or conversion
10	**Little River from Glover River to Millwood Lake**	
	Agriculture	Nutrient loading
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Dams / reservoirs	Habitat fragmentation
11	**Little Missouri and Lower Antoine Rivers**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Industrialized livestock production	Nutrient loading
	Livestock grazing	Nutrient loading
12	**Ross Foundation**	

	Source	Stress
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Altered composition/structure
13	**White Cliffs Natural Area**	
	Fire suppression	Alteration of natural fire regimes
	Livestock grazing	Habitat destruction or conversion
	Livestock grazing	Habitat fragmentation
14	**Saratoga / Columbus / Washington Blackland Prairies**	
	Fire suppression	Alteration of natural fire regimes
	Livestock grazing	Habitat destruction or conversion
	Livestock grazing	Habitat fragmentation
15	**Weyerhaeuser Tiak Land Swap**	
16	**Nacatoch Ravines**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
17	**Poison Springs**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Altered composition/structure
18	**Palmetto Flats**	

	Source	Stress
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Roads / road construction	Altered hydrological regime (flow, quantity, etc.)
19	**Bois D'Arc**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
20	**Lower Ouachita**	
	Industrialized livestock production	Nutrient loading
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
21	**Prenanthes Barbata Site**	
	Forestry -- improper silvicultural practices	Habitat destruction or conversion
22	**Seven Devils**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
23	**Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge**	
		Habitat destruction or conversion
	Dams / reservoirs	Habitat fragmentation
	Development -- residential	Altered composition/structure
	Fire suppression	Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Alteration of natural fire regimes

	Source	Stress
	Forestry -- improper silvicultural practices	Altered composition/structure
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
24	**White Oak Creek**	
	Agriculture	Altered composition/structure
	Agriculture	Habitat destruction or conversion
	Agriculture	Habitat fragmentation
	Agriculture	Habitat disturbance
	Agriculture	Soil erosion
	Agriculture	Sedimentation
	Agriculture	Toxins/contaminants
	Dams / reservoirs	Habitat destruction or conversion
	Forestry -- conversion	Habitat fragmentation
25	**Atlanta State Recreation Area**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
	Other	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
26	**Sulfur River Wildlife Management Area**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
27	**Bayou Dorcheat**	
		Habitat fragmentation
	Forestry -- conversion	Habitat destruction or conversion

	Source	Stress
	Forestry -- improper silvicultural practices	Altered composition/structure
	Forestry -- improper silvicultural practices	Altered composition/structure
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
28	**Miller County Sandhills**	
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Habitat destruction or conversion
29	**Cornie Creek Bottoms**	
	Forestry -- conversion	Altered composition/structure
	Forestry -- improper silvicultural practices	Habitat destruction or conversion
30	**Daingerfield State Park**	
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Fire suppression	Alteration of natural fire regimes
	Improper management (e.g. managed for incompatible species / communi	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
31	**Bayou Bartholomew**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
32	**Delaney Mt.**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure

	Source	Stress
33	**Union Wildlife Management Area**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
34	**Caney District, Corney Unit - Kisatchie National Forest**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
35	**Caney District, Caney Unit - Kisatchie National Forest**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
36	**Bayou DeLoutre**	
		Habitat fragmentation
	Forestry -- improper silvicultural practices	Altered composition/structure
37	**Bodcau**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
38	**Caddo Lake Complex**	
		Toxins/contaminants
		Habitat destruction or conversion

	Source	Stress
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
	Resource extraction -- oil & gas exploration and development	Habitat fragmentation
39	**Gulf Stream Sandhill**	
	Agriculture	Habitat destruction or conversion
	Agriculture	Altered composition/structure
	Development -- residential	Habitat destruction or conversion
	Development -- residential	Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
	Roads / road construction	Habitat fragmentation
40	**Mill Creek Ranch**	
		Habitat fragmentation
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Dams / reservoirs	Modification of water levels or flow pattern
	Development -- commercial	Habitat destruction or conversion
	Development -- commercial	Habitat fragmentation
	Development -- residential	Habitat fragmentation
	Development -- residential	Habitat destruction or conversion
	Dredging	Modification of water levels or flow pattern
	Fire suppression	Alteration of natural fire regimes
	Fire suppression	Alteration of natural fire regimes

	Source	Stress
	Forestry -- conversion	Habitat fragmentation
	Forestry -- improper silvicultural practices	Altered composition/structure
	Forestry -- improper silvicultural practices	Altered composition/structure
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Water pollution: non-point source	Nutrient loading
	Water pollution: point source	Nutrient loading
	Water pollution: point source	Toxins/contaminants
41	**Burma Road**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
42	**Stow Creek Woods**	
	Dams / reservoirs	Habitat destruction or conversion
	Development -- residential	Habitat fragmentation
	Development -- residential	Habitat destruction or conversion
	Roads / road construction	Habitat fragmentation
43	**Minden Unit of Kisatchie National Forest**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Habitat fragmentation
44	**Upper Big Sandy Creek**	
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Habitat fragmentation
45	**Red River Macrosite, North Highlands, Gilliam-1**	

	Source	Stress
46	**Bayou D'arbonne**	
47	**Grand Saline Marsh**	
	Agriculture	Soil erosion
	Agriculture	Habitat destruction or conversion
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Dams / reservoirs	Habitat destruction or conversion
	Development -- residential	Habitat destruction or conversion
	Forestry -- conversion	Habitat destruction or conversion
	Roads / road construction	Habitat fragmentation
	Roads / road construction	Soil erosion
48	**Upper Sabine River Complex**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Diversions	Altered hydrological regime (flow, quantity, etc.)
	Roads / road construction	Habitat fragmentation
49	**Barksdale & Ammo Plant**	
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Fire suppression	Alteration of natural fire regimes
	Improper management (e.g. managed for incompatible species / communi	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
	Roads / road construction	Habitat fragmentation
50	**Tyler State Park**	

	Source	Stress
		Habitat fragmentation
	Forestry -- improper silvicultural practices	Altered composition/structure
51	**Schoolhouse Springs**	
52	**Sligo 3/4**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
53	**Jackson / Bienville WMA**	
	Agriculture	Habitat destruction or conversion
	Roads / road construction	Habitat fragmentation
	Roads / road construction	Habitat destruction or conversion
54	**Purtis Creek State Recreation Area**	
	Agriculture	Altered composition/structure
	Agriculture	Poor water quality (pollution, turbidity, etc.)
	Agriculture	Soil erosion
	Agriculture	Habitat destruction or conversion
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Altered composition/structure
	Fire suppression	Alteration of natural fire regimes
	Roads / road construction	Habitat fragmentation
55	**Kickapoo Creek Riparian Forest**	

	Source	Stress
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
56	**Bistineau Calcareous Forest, Bossier Point / Loggy Bayou**	
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Altered composition/structure
	Fire suppression	Alteration of natural fire regimes
57	**Lake Athens Bogs**	
	Agriculture	Nutrient loading
	Agriculture	Sedimentation
	Agriculture	Altered hydrological regime (flow, quantity, etc.)
	Agriculture	Habitat destruction or conversion
	Livestock grazing	Excessive herbivory
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Resource extraction -- oil & gas exploration and development	Habitat destruction or conversion
58	**Canisnia Lake / Bayou Pierre**	
		Habitat fragmentation
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Altered composition/structure
59	**Black Lake Bayou & Red River Salines**	
	Development -- residential	Habitat destruction or conversion
	Forestry -- conversion	Habitat destruction or conversion

	Source	Stress
	Resource extraction -- groundwater withdrawl	Groundwater depletion
	Roads / road construction	Habitat fragmentation
60	**Tolar Ranch**	
	Biological (incl. exotic species, disease, woody suppression)	Altered composition/structure
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Improper management (e.g. managed for incompatible species / communi	Habitat destruction or conversion
61	**Ham Creek - Mt. Enterprise**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
62	**Fosterville Forest**	
	Agriculture	Habitat destruction or conversion
	Development -- residential	Habitat fragmentation
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- improper silvicultural practices	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Soil erosion
	Forestry -- improper silvicultural practices	Altered composition/structure
	Improper management (e.g. managed for incompatible species / communi	Altered composition/structure
63	**Burkitt Foundation, Gus Engling Wildlife Management Area**	

	Source	Stress
64	**Camp Bette Perot**	
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Fire suppression	Alteration of natural fire regimes
65	**Striker Creek**	
	Dams / reservoirs	Habitat destruction or conversion
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Forestry -- conversion	Habitat destruction or conversion
	Roads / road construction	Habitat fragmentation
	Water pollution: point source	Thermal alteration
66	**Gum Pond**	
67	**Tonkawa Sandhills/Naconiche Creek**	
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Dams / reservoirs	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- conversion	Habitat fragmentation
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Soil erosion
	Resource extraction -- groundwater withdrawl	Groundwater depletion
68	**Mud Creek**	
	Agriculture	Sedimentation
	Agriculture	Habitat destruction or conversion
	Dams / reservoirs	Habitat destruction or conversion

	Source	Stress
	Forestry -- conversion	Habitat destruction or conversion
	Roads / road construction	Sedimentation
	Roads / road construction	Habitat fragmentation
69	**Crystal Lake Tract**	
	Biological (incl. exotic species, disease, woody suppression)	Excessive herbivory
	Fire suppression	Alteration of natural fire regimes
70	**Northern Sabine National Forest**	
	Agriculture	Habitat destruction or conversion
	Agriculture	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat fragmentation
	Forestry -- improper silvicultural practices	Extraordinary predation/parasitism/disease
	Forestry -- improper silvicultural practices	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
	Roads / road construction	Modification of water levels or flow pattern
	Roads / road construction	Sedimentation
	Roads / road construction	Habitat fragmentation
71	**Upper Neches River**	
	Agriculture	Habitat destruction or conversion
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- improper silvicultural practices	Altered composition/structure

	Source	Stress
	Roads / road construction	Habitat fragmentation
72	**Attoyac River**	
	Agriculture	Nutrient loading
	Agriculture	Sedimentation
	Agriculture	Habitat destruction or conversion
	Forestry -- conversion	Habitat destruction or conversion
	Roads / road construction	Habitat fragmentation
73	**San Pedro Creek**	
	Agriculture	Sedimentation
	Agriculture	Habitat destruction or conversion
	Biological (incl. exotic species, disease, woody suppression)	Altered composition/structure
	Livestock grazing	Altered composition/structure
	Roads / road construction	Sedimentation
	Roads / road construction	Habitat fragmentation
74	**Weches Glades**	
	Agriculture	Toxins/contaminants
	Agriculture	Habitat destruction or conversion
	Biological (incl. exotic species, disease, woody suppression)	Altered composition/structure
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat fragmentation
	Livestock grazing	Excessive herbivory
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance

	Source	Stress
	Resource extraction -- mining	Habitat destruction or conversion
	Roads / road construction	Toxins/contaminants
75	**Davy Crockett National Forest**	
	Agriculture	Habitat destruction or conversion
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- conversion	Habitat fragmentation
	Forestry -- improper silvicultural practices	Extraordinary predation/parasitism/disease
	Forestry -- improper silvicultural practices	Altered composition/structure
	Improper management (e.g. managed for incompatible species / communi	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Roads / road construction	Modification of water levels or flow pattern
	Roads / road construction	Sedimentation
	Roads / road construction	Habitat fragmentation
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
	Water pollution: non-point source	Nutrient loading
76	**Riverside Catahoula Barrens**	
77	**Sam Houston National Forest**	
	Agriculture	Habitat destruction or conversion
	Development -- commercial	Habitat destruction or conversion

	Source	Stress
	Development -- residential	Habitat destruction or conversion
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Forestry -- conversion	Habitat fragmentation
	Forestry -- improper silvicultural practices	Extraordinary predation/parasitism/disease
	Forestry -- improper silvicultural practices	Altered composition/structure
	Improper management (e.g. managed for incompatible species / communi	Altered composition/structure
	Recreation (incl. ORV use, road/trail construction, trampling/overuse)	Habitat disturbance
	Resource extraction -- oil & gas exploration and development	Toxins/contaminants
	Roads / road construction	Modification of water levels or flow pattern
	Roads / road construction	Sedimentation
	Roads / road construction	Habitat fragmentation
	Water pollution: non-point source	Nutrient loading
	Water pollution: non-point source	Poor water quality (pollution, turbidity, etc.)
78	**Lower Trinity River**	
	Agriculture	Habitat destruction or conversion
	Dams / reservoirs	Altered hydrological regime (flow, quantity, etc.)
	Fire suppression	Alteration of natural fire regimes
	Forestry -- conversion	Habitat destruction or conversion
	Livestock grazing	Excessive herbivory
	Roads / road construction	Habitat fragmentation

Appendix 2

Maps

UWGCP Placement Map

Portfolio Conservation Areas in the Upper West Gulf Coastal Plain

Current Management Status in the UWGCP

Geology of the UWGCP

Soils of the UWGCP

HUCs in the UWGCP:

Accounting Units

Catalog Units

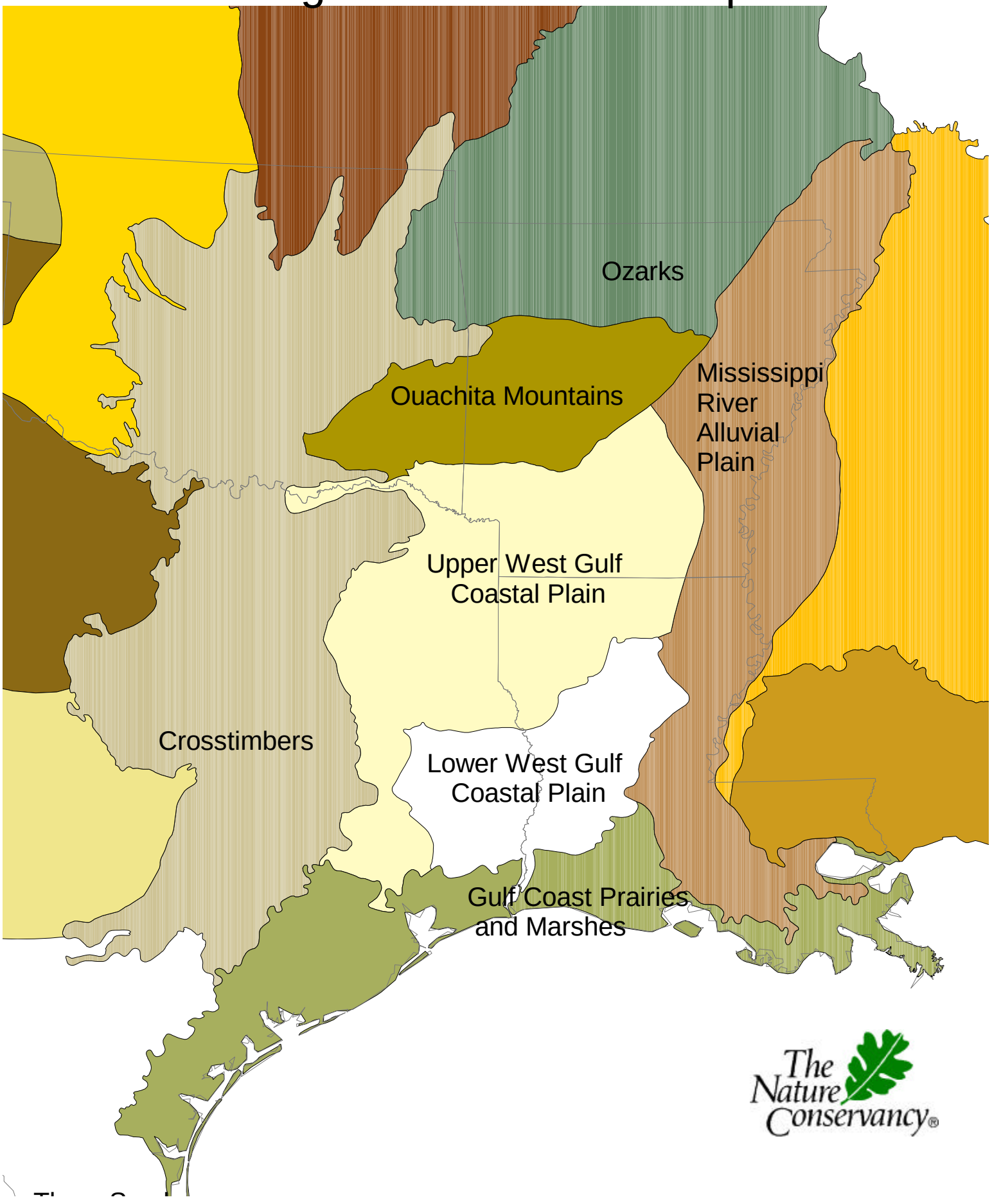
Digital Elevation Model

Population, Counties, and Urban Areas

Stream Reaches (east, west, and southern views)

Graphical Representation of Boundary Management Decisions

Upper West Gulf Coastal Plain Ecoregional Placement Map



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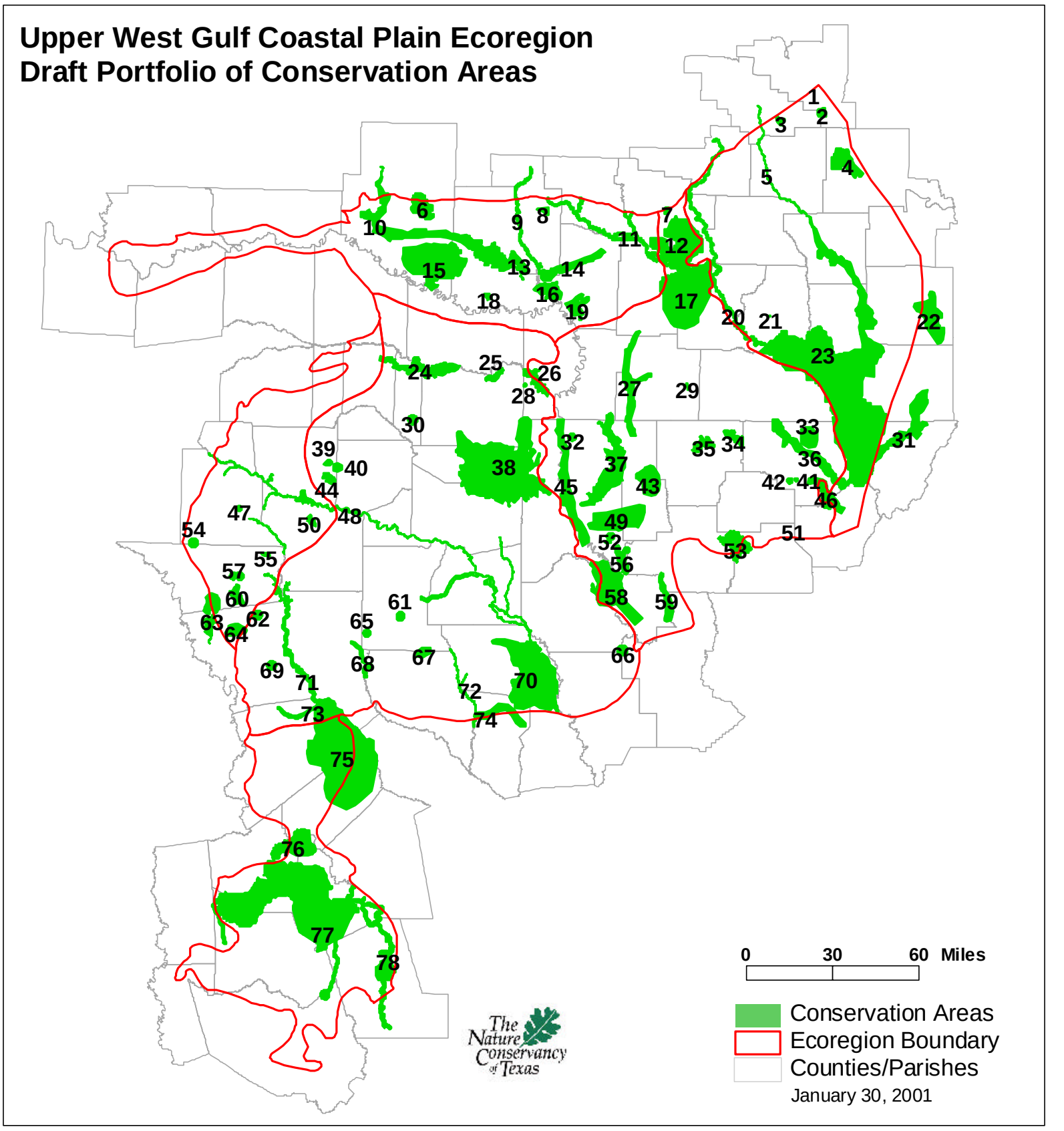
Upper West Gulf Coastal Plain Ecoregion
Draft Portfolio of Conservation Areas



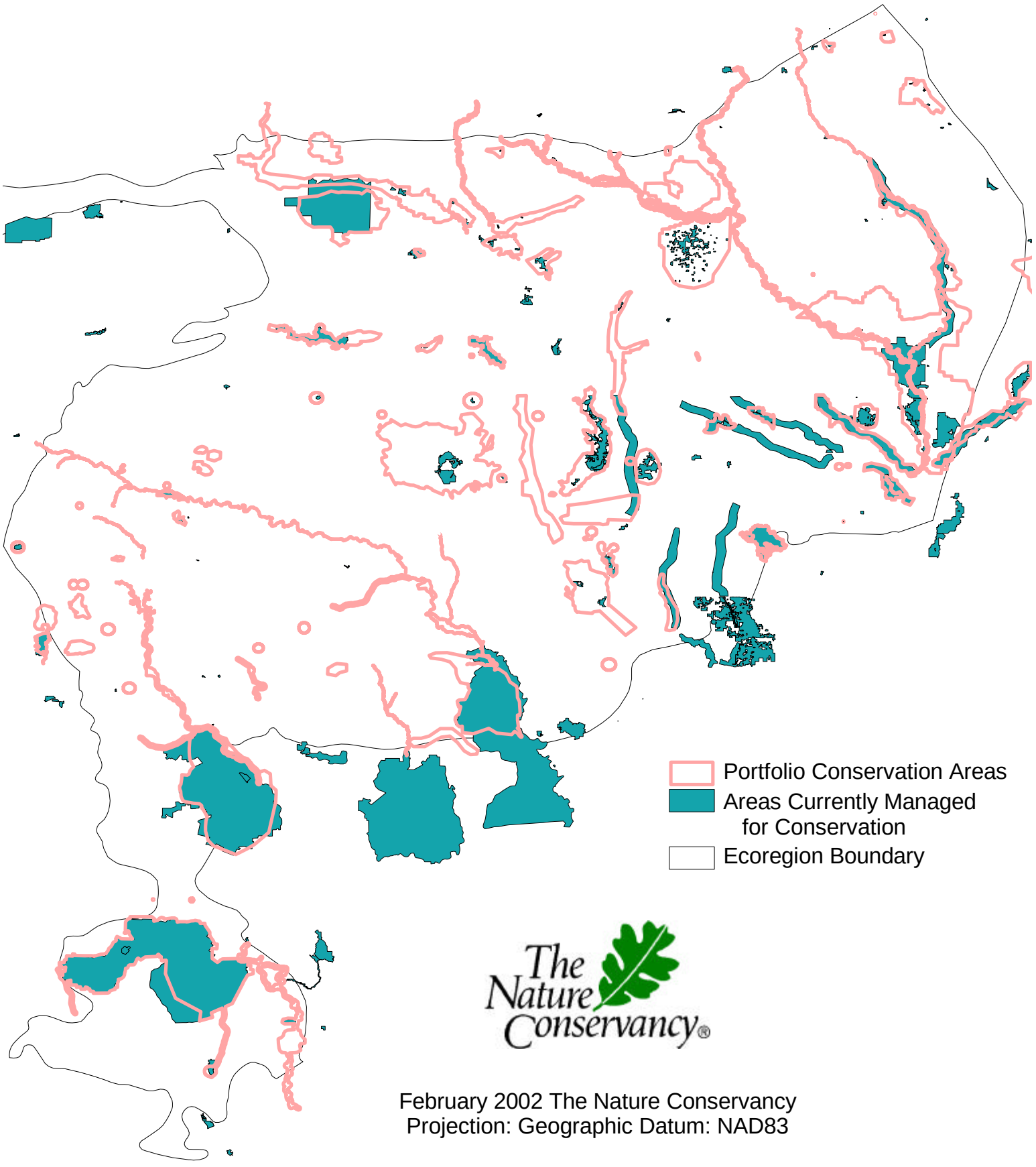
1	Granite Mountain / Gillam Park
2	Lorance Creek / Big Lake
3	Nepheline Syenite Glades
4	Pine Bluff Arsenal
5	Saline River
6	McCurtain Co
7	Terre Noire
8	DeQueen / Dierks Glade Systems
9	Western Saline
10	Little River from Glover River to Millwood Lake
11	Little Missouri and Lower Antoine Rivers
12	Ross Foundation
13	White Cliffs Natural Area
14	Saratoga / Columbus / Washington Blackland Prairies
15	Weyerhaeuser Tiak Land Swap
16	Nacatoch Ravines
17	Poison Springs
18	Palmetto Flats
19	Bois D'Arc
20	Lower Ouachita
21	Prenanthes Barbata Site
22	Seven Devils

23	Kingsland Prairie, Warren Prairie & Saline River, Ouachita River Terraces / Bastrop Ridge
24	White Oak Creek
25	Atlanta State Recreation Area
26	Sulfur River Wildlife Management Area
27	Bayou Dorcheat
28	Miller County Sandhills
29	Cornie Creek Bottoms
30	Daingerfield State Park
31	Bayou Bartholomew
32	Delaney Mt.
33	Union Wildlife Management Area
34	Caney District, Corney Unit - Kisatchie National Forest
35	Caney District, Caney Unit - Kisatchie National Forest
36	Bayou DeLoutre
37	Bodcau
38	Caddo Lake Complex
39	Gulf Stream Sandhill
40	Mill Creek Ranch
41	Burma Road
42	Stow Creek Woods

43	Minden Unit of Kisatchie National Forest
44	Upper Big Sandy Creek
45	Red River Macrosite, North Highlands, Gilliam-1
46	Bayou D'arbonne
47	Grand Saline Marsh
48	Upper Sabine River Complex
49	Barksdale & Ammo Plant
50	Tyler State Park
51	Schoolhouse Springs
52	Sligo 3/4
53	Jackson / Bienville WMA
54	Purtis Creek State Recreation Area
55	Kickapoo Creek Riparian Forest
56	Bistineau Calcareous Forest, Bossier Point / Loggy Bayou
57	Lake Athens Bogs
58	Canisnia Lake / Bayou Pierre
59	Black Lake Bayou & Red River Salines
60	Tolar Ranch
61	Ham Creek - Mt. Enterprise

62	Fosterville Forest
63	Burkitt Foundation, Gus Engling Wildlife Management Area
64	Camp Bette Perot
65	Striker Creek
66	Gum Pond
67	Tonkawa Sandhills/Naconiche Creek
68	Mud Creek
69	Crystal Lake Tract
70	Northern Sabine National Forest
71	Upper Neches River
72	Attoyac River
73	San Pedro Creek
74	Weches Glades
75	Davy Crockett National Forest
76	Riverside Catahoula Barrens
77	Sam Houston National Forest
78	Lower Trinity River

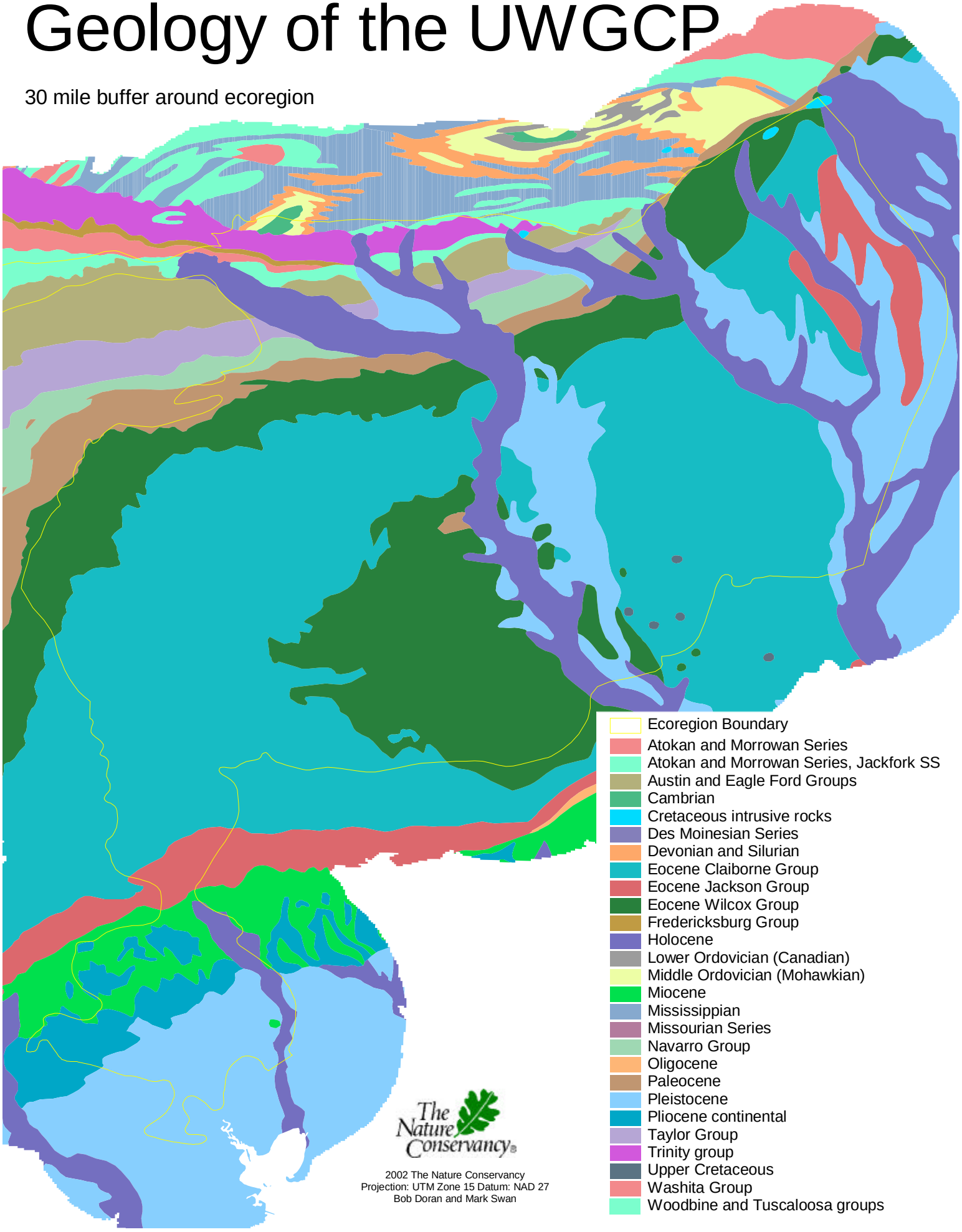
UWGCP Current Status of Conservation Areas



February 2002 The Nature Conservancy
Projection: Geographic Datum: NAD83

Geology of the UWGCP

30 mile buffer around ecoregion



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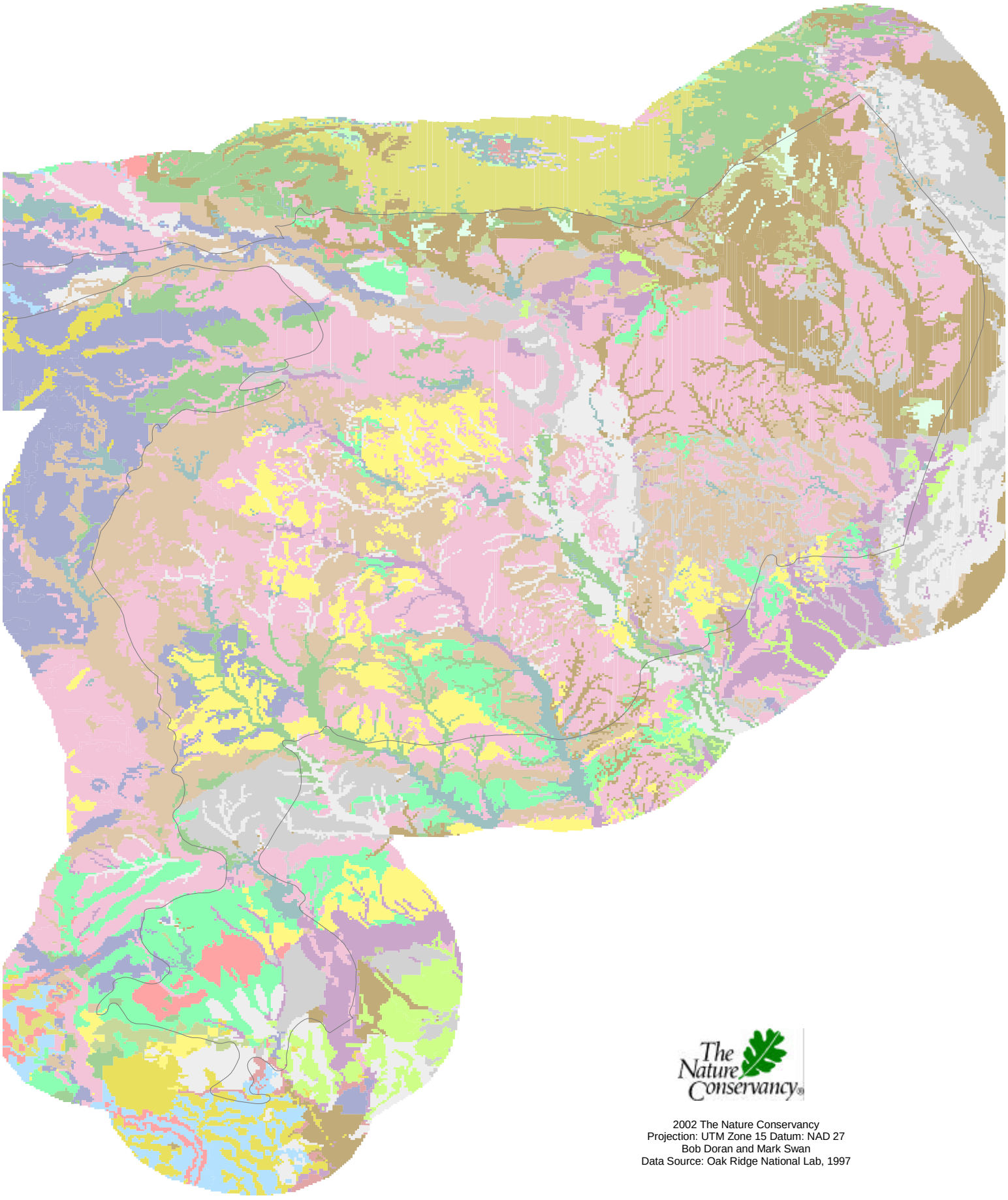
Projection: UTM Zone 15 Datum: NAD 27
Bob Doran and Mark Swan

Soils of the UWGCP



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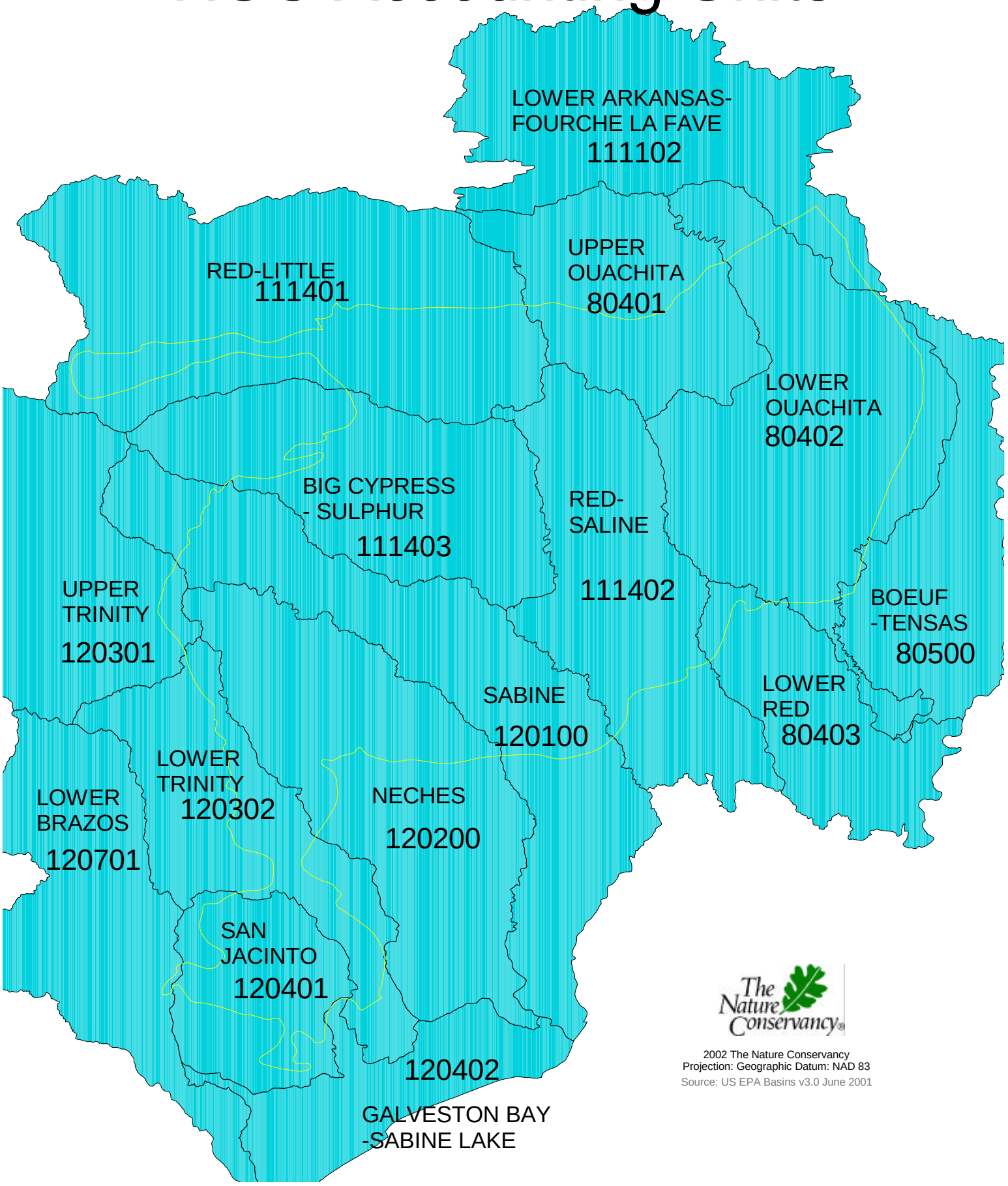
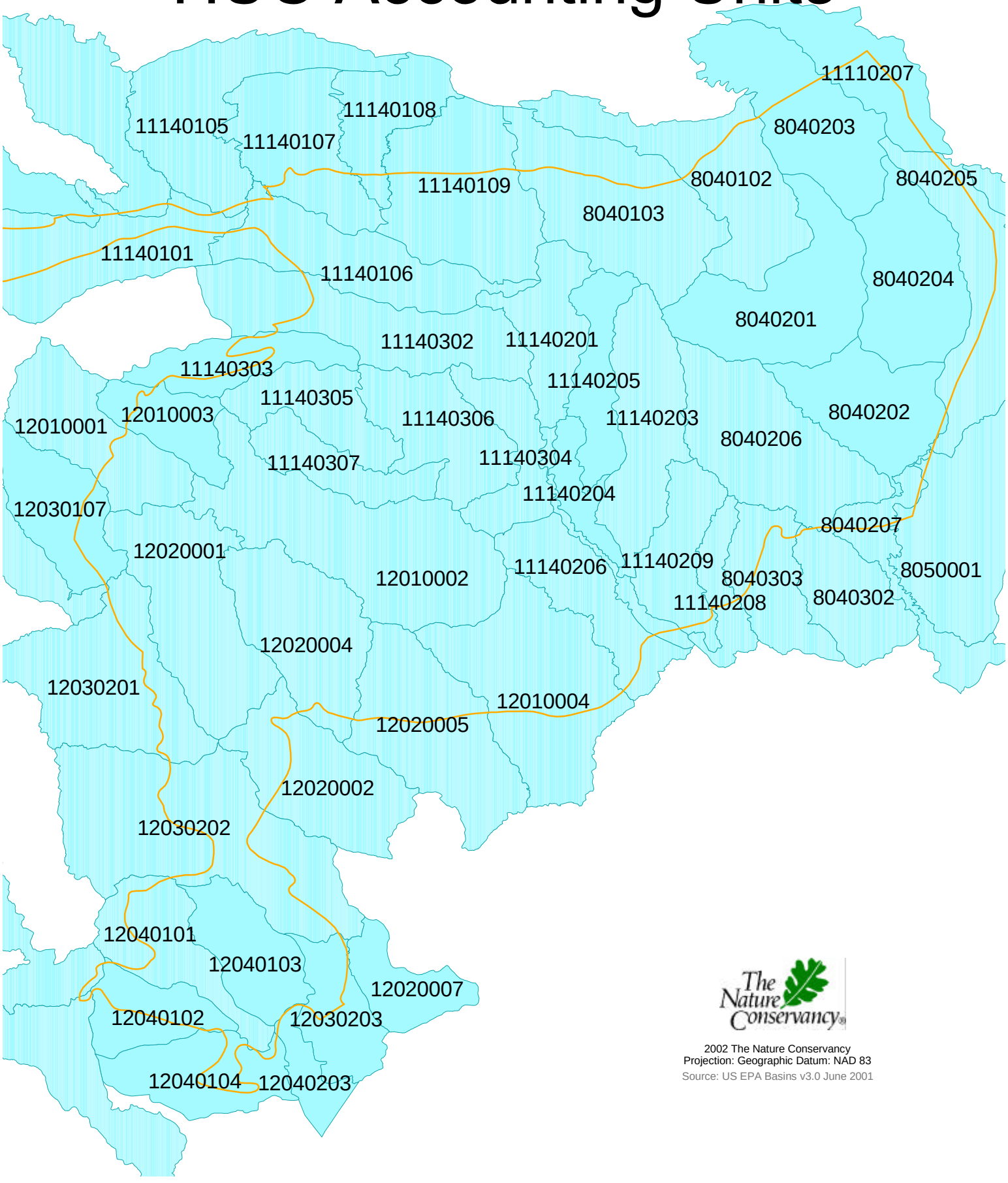
Projection: UTM Zone 15 Datum: NAD 27
Bob Doran and Mark Swan
Data Source: Oak Ridge National Lab, 1997

UWGCP
HUC Accounting Units



Projection: Geographic Datum: NAD 83
Source: US EPA Basins v3.0 June 2001

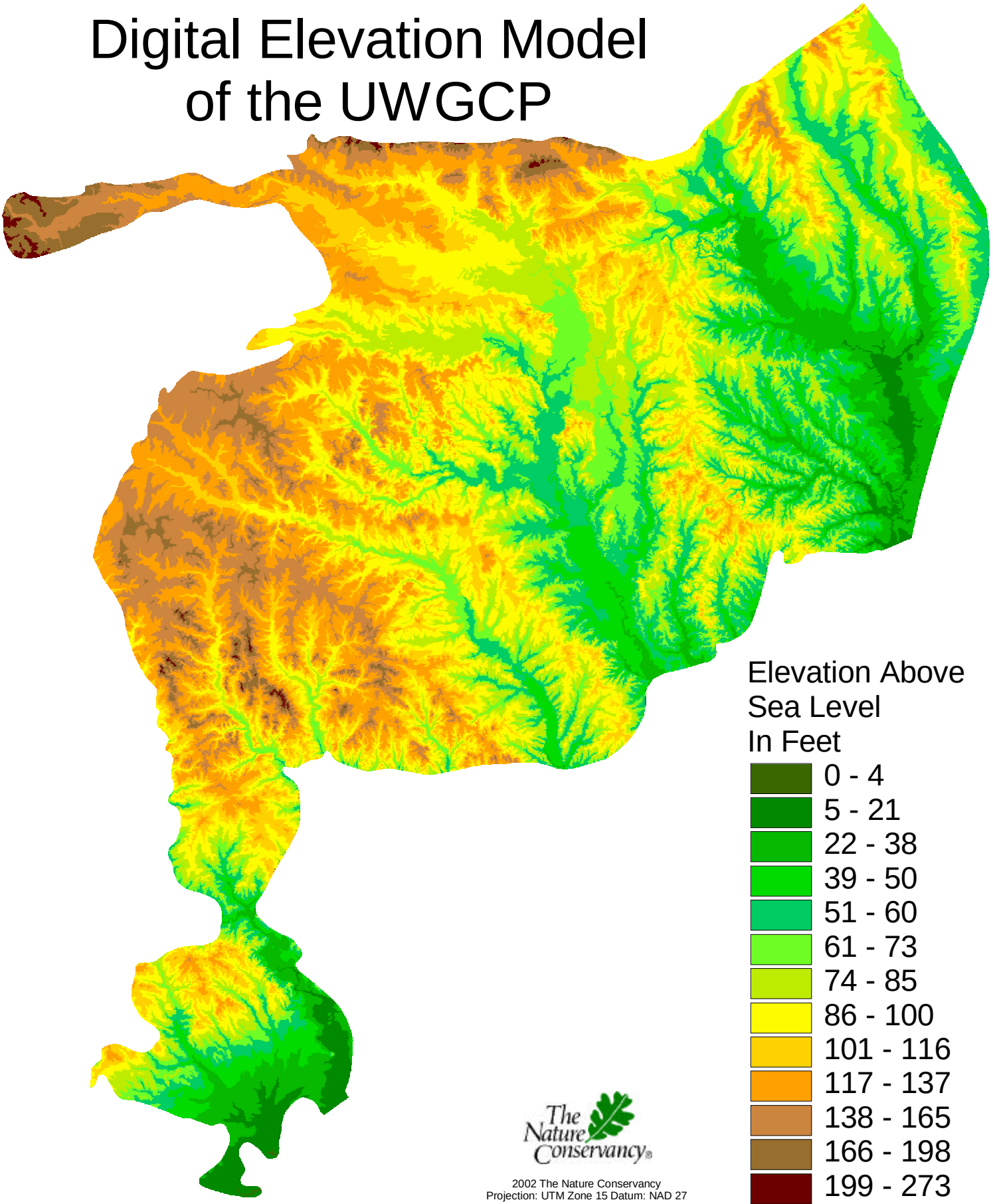
UWGCP
HUC Accounting Units



The Nature Conservancy

Projection: Geographic Datum: NAD 83
Source: US EPA Basins v3.0 June 2001

Digital Elevation Model of the UWGCP



Elevation Above Sea Level In Feet

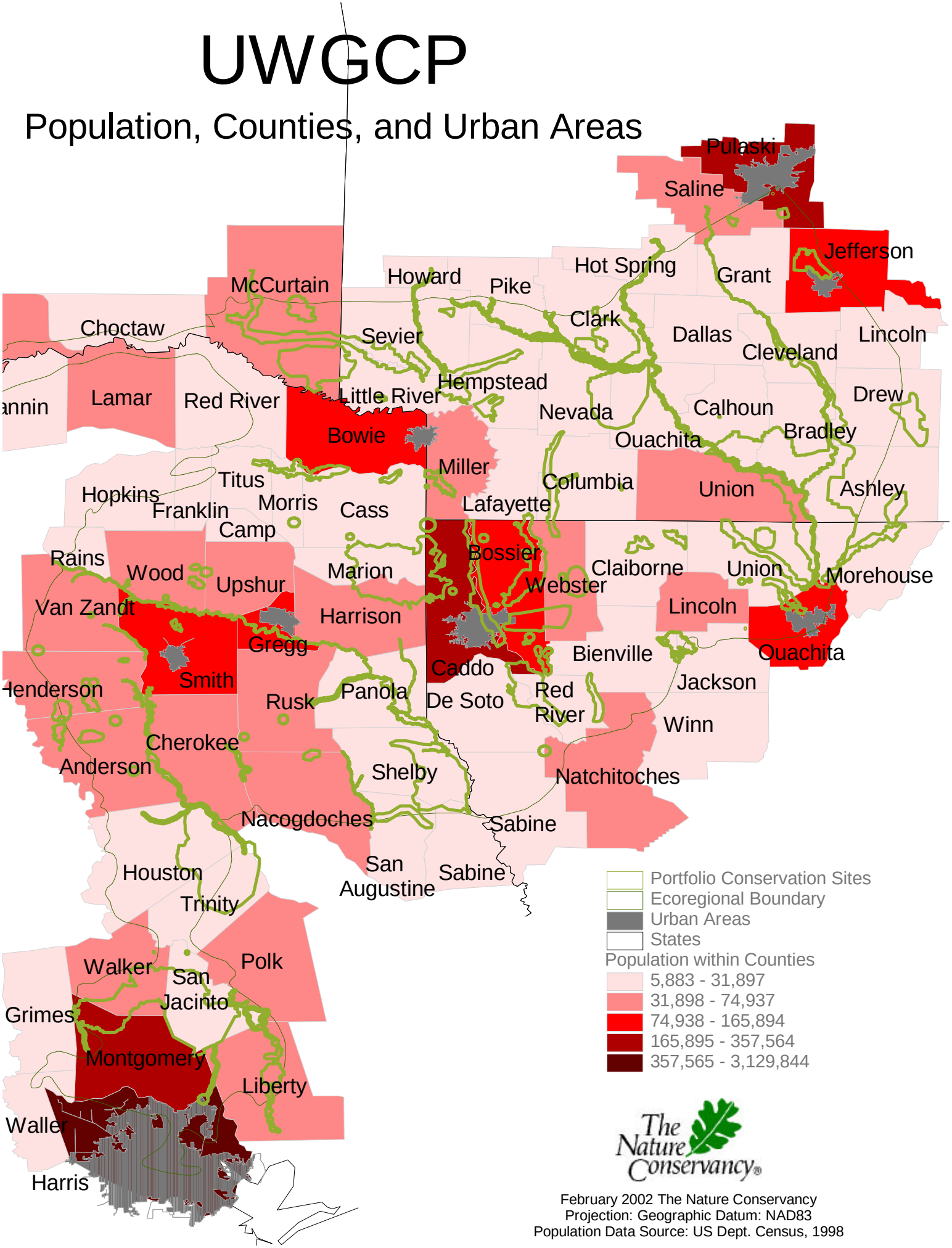
- 0 - 4
- 5 - 21
- 22 - 38
- 39 - 50
- 51 - 60
- 61 - 73
- 74 - 85
- 86 - 100
- 101 - 116
- 117 - 137
- 138 - 165
- 166 - 198
- 199 - 273
- 274 - 853

The Nature Conservancy®

Projection: UTM Zone 15 Datum: NAD 27
Bob Doran and Mark Swan

UWGCP

Population, Counties, and Urban Areas

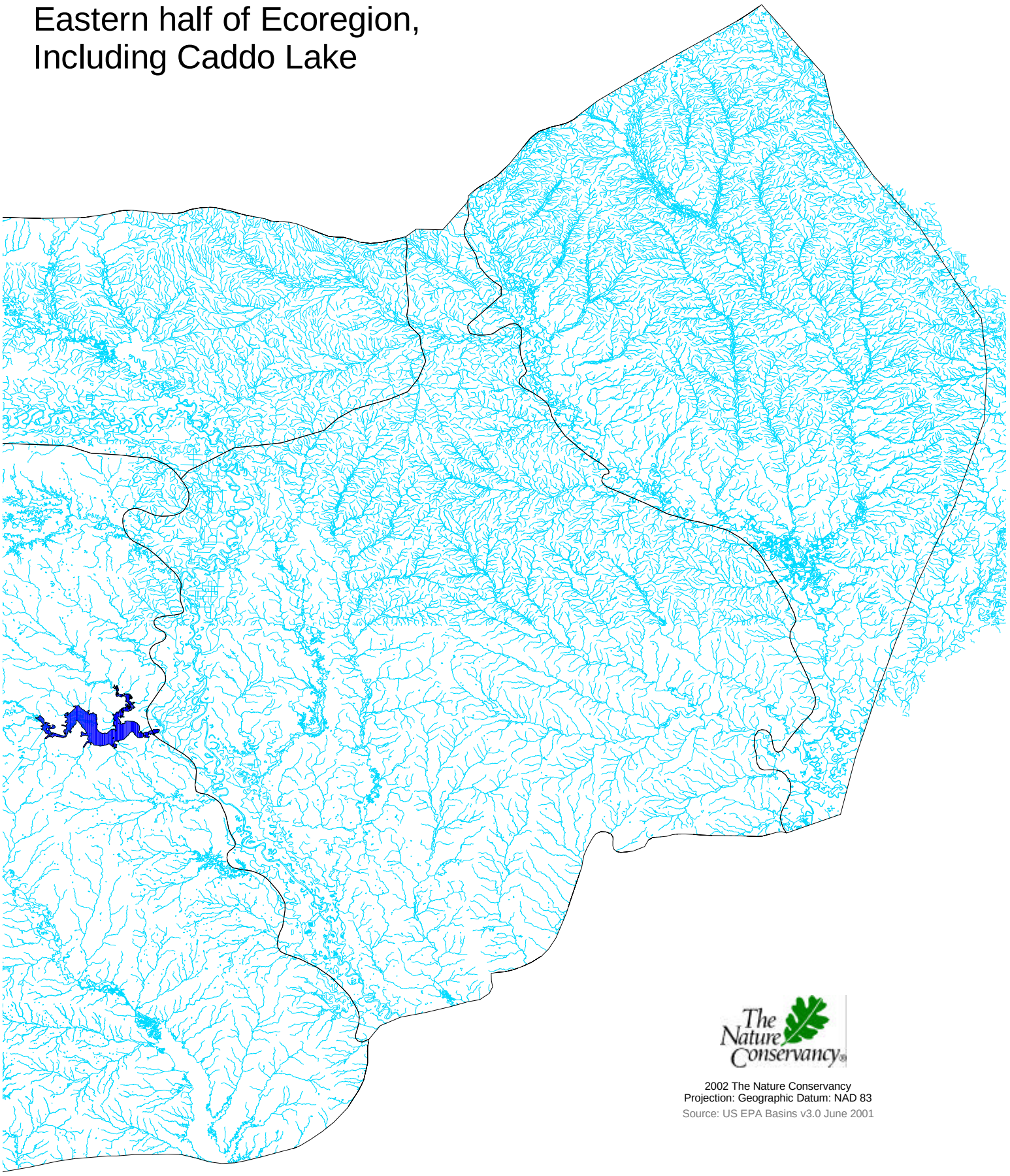


The Nature Conservancy®

February 2002 The Nature Conservancy
Projection: Geographic Datum: NAD83
Population Data Source: US Dept. Census, 1998

UWGCP Stream Reaches

Eastern half of Ecoregion, Including Caddo Lake

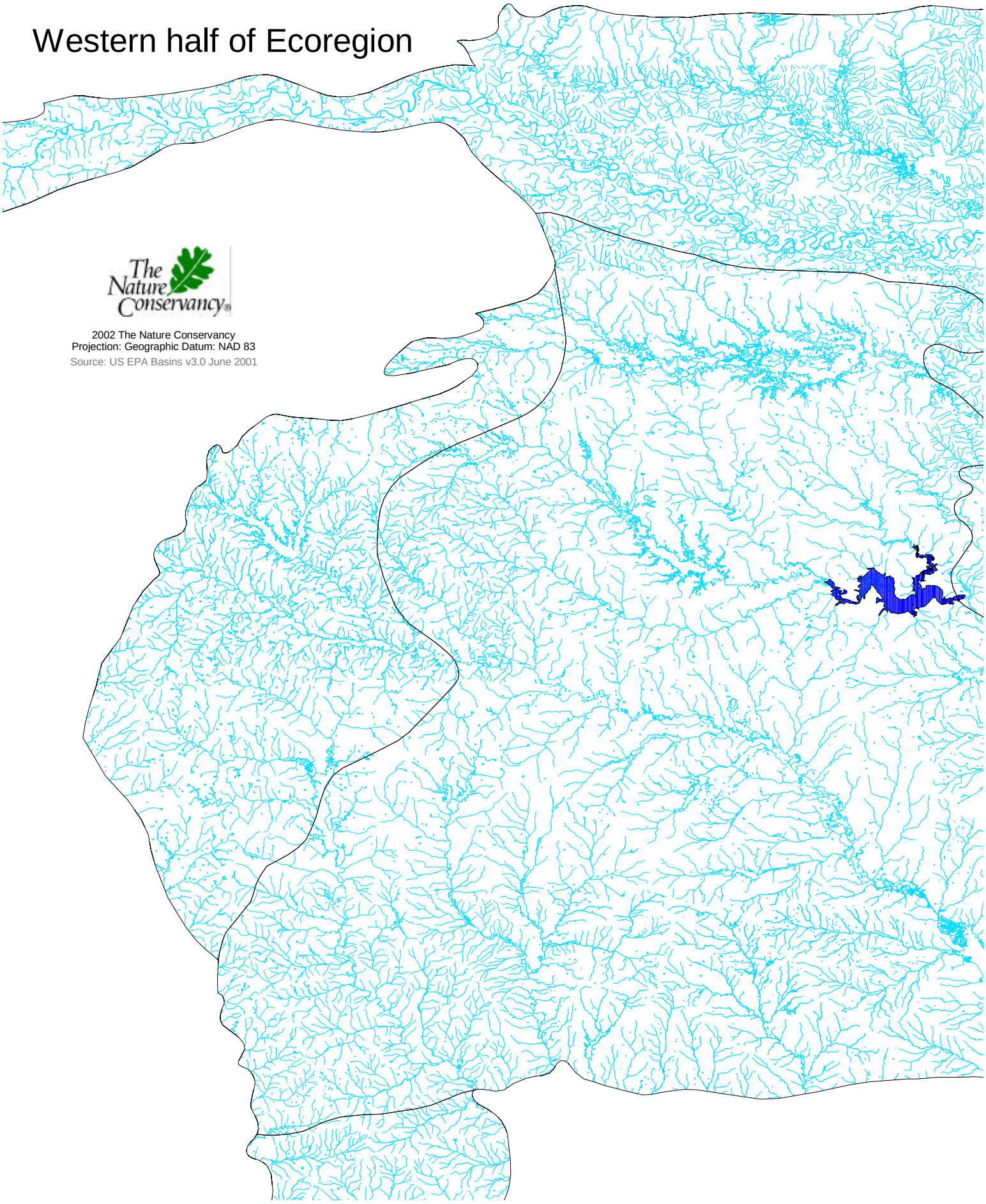


The Nature Conservancy

Projection: Geographic Datum: NAD 83
Source: US EPA Basins v3.0 June 2001

UWGCP Stream Reaches

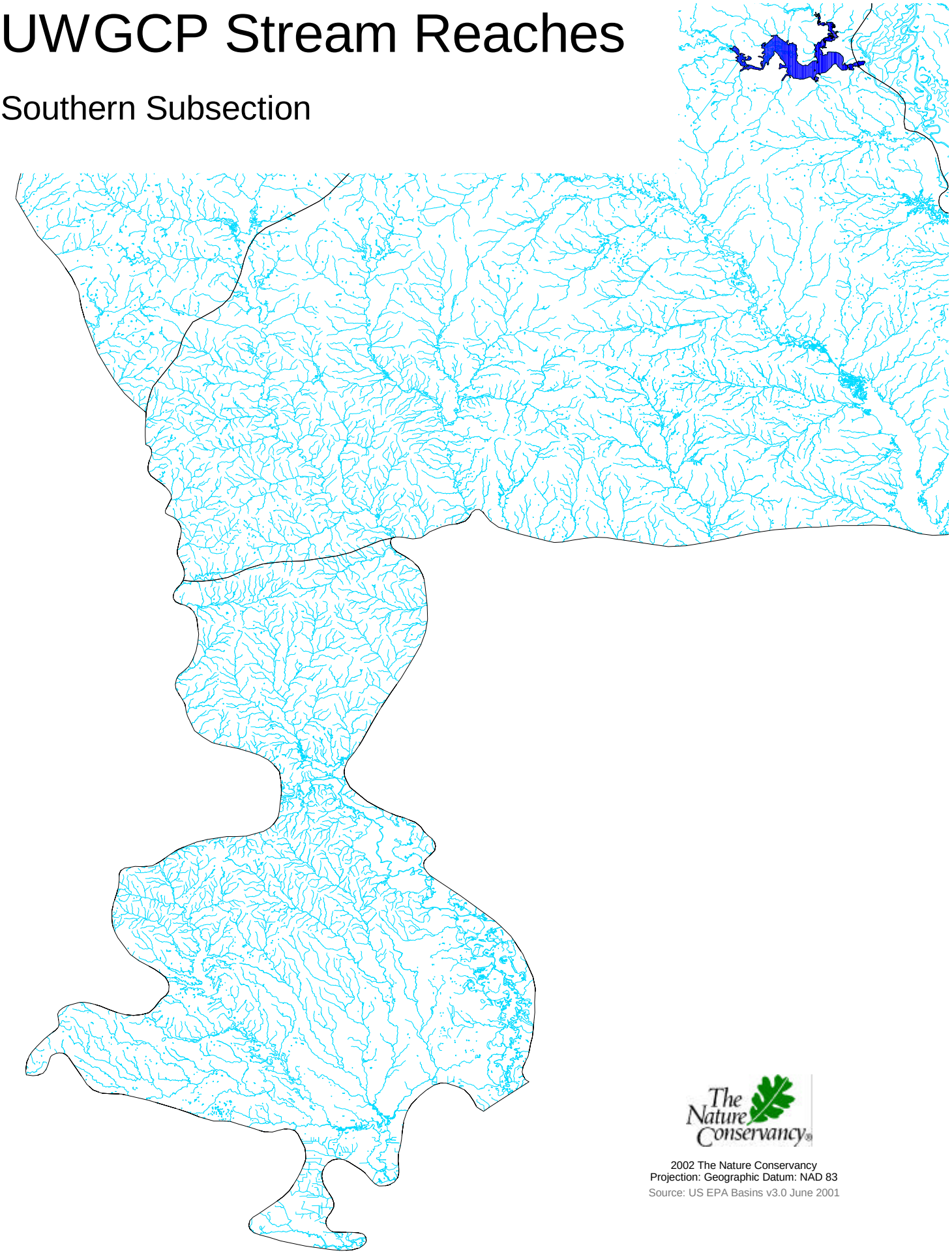
Western half of Ecoregion



Projection: Geographic Datum: NAD 83
Source: US EPA Basins v3.0 June 2001

UWGCP Stream Reaches

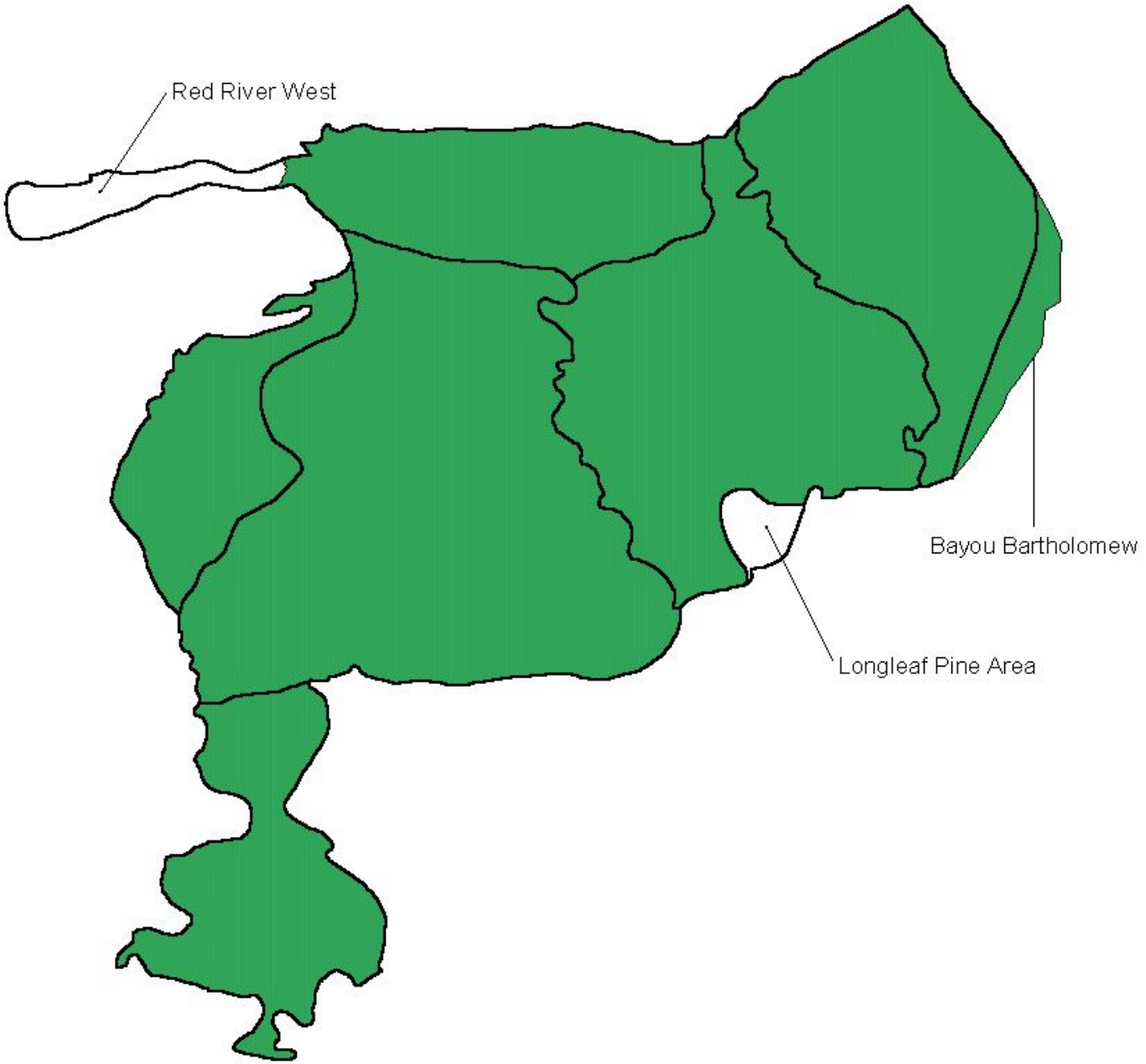
Southern Subsection



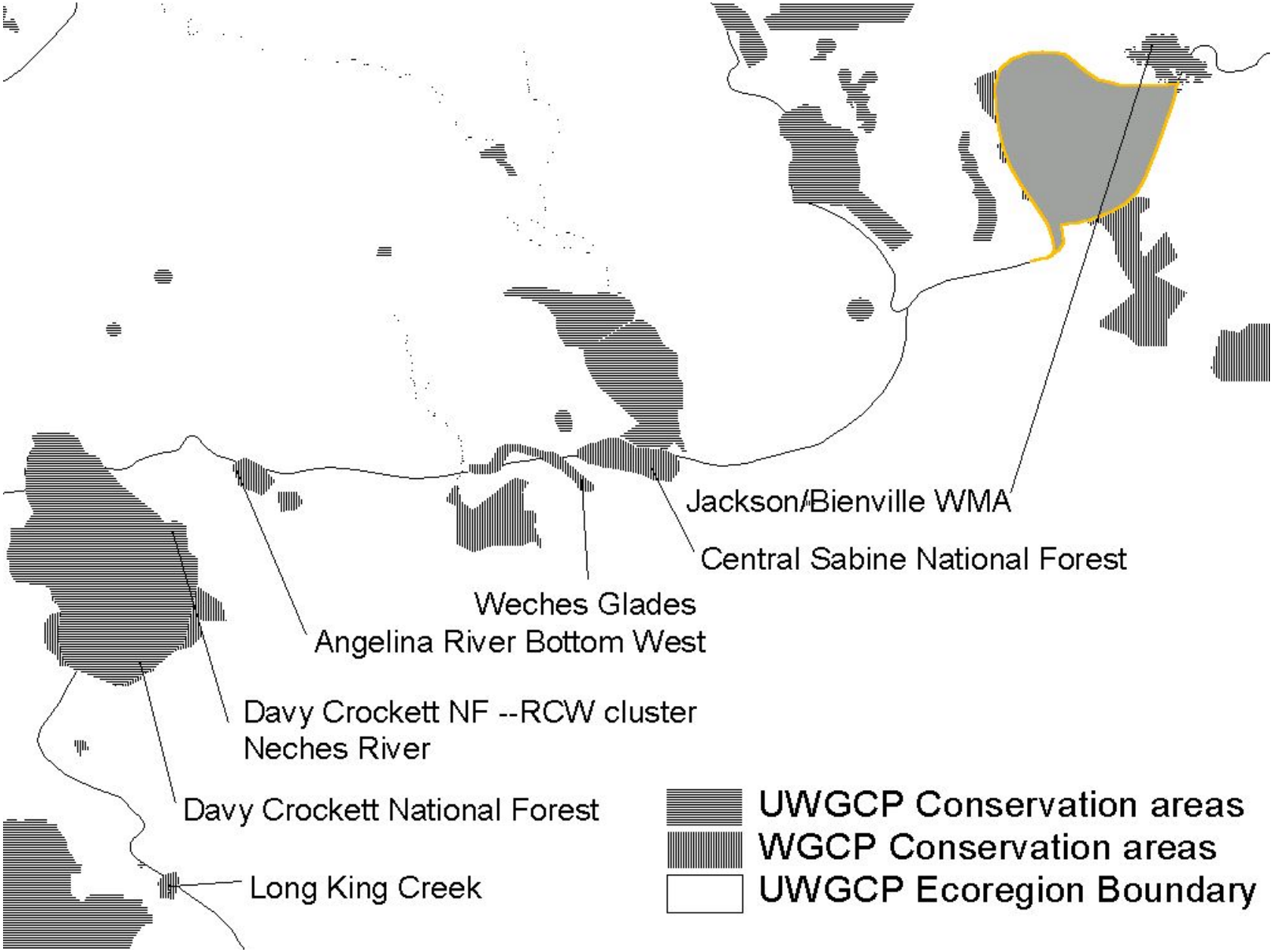
The Nature Conservancy

Projection: Geographic Datum: NAD 83
Source: US EPA Basins v3.0 June 2001

Graphic Representation of Boundary Management Decisions



Management Cooperation Opportunities with WGCP



Appendix 3
UWGCP Data Management Plan and Process Methodology

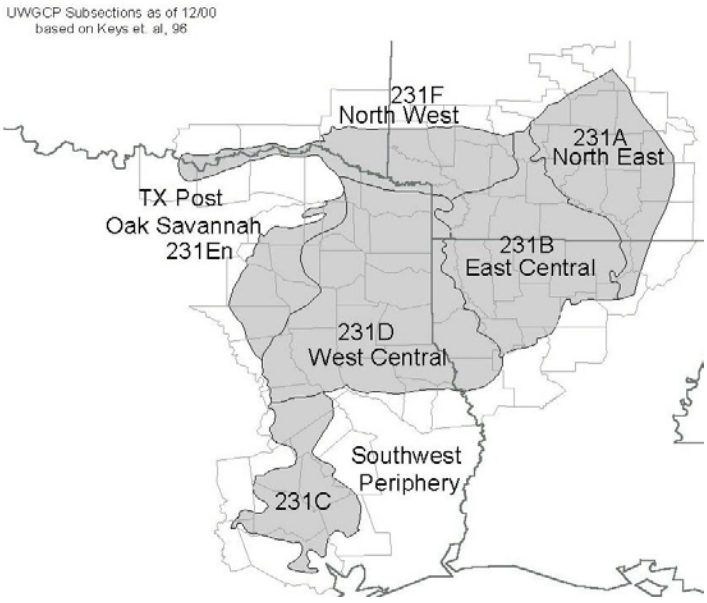
Methodology
The Data Management Plan (DMP) for UWGCP Ecoregion planning references the data management guidance outlined in *Geography of Hope* (Groves, et al., 2000). This DMP was built as needed to facilitate data management, various data and technical operating styles within certain teams, and primarily to provide methodology for the UWGCP plan. It should be used as a reference point throughout plan implementation, and primarily as a starting point for data gathering and planning for the next iteration.

Initial concurrent activities: target species selection and community selection.
Botany/Zoology target selection.
Heritage Data Management for UWGCP Ecoregional planning processes: Target identification and selection.

- Begin with BCD data from states (AR, LA, OK, TX) and compiled at SRO to send to zoology and botany teams. SRO distributes community, botany, and zoology databases for all tracked species within ecoregion for review by technical teams.
- Technical team review and input towards target selection. First round of inputs are selection of target/not target/unknown only. Note: no rows (species/element codes) are removed from SRO-created databases; targeted species are marked and comments given as to their selection. Nontargets are hidden but still available for review.
  Some species were added to the lists, they were latter cross-referenced with appropriate element codes.
- SRO compiles lists from all members of technical teams to tally target status line.
- Outside data incorporated according to technical team comment. See references for details.
- Held series of conference calls for both zoology and botany teams to
  1) Establish final target list; resolve outstanding/questionable species
  2) Identify key or indicator species for ecological systems
  3) Establish overall conservation goals and rationale for those goals, and
  4) Establish goals by subsection or stratification as needed.

Note that for some aquatic species, occurrences are defined as linear sections of a riverine system (example: Interior Least Tern). Final target lists are returned to SRO for element occurrence coordination. See uwgzoocc1.xls and uwgbotcc1.xls for detailed comments/rationale on each target. SRO compiles new target list based on technical team selections, incorporates additions/deletions to BCD, provides final list for target selection.

GIS initial Phases
Bailey's subsections for the UWGCP were simplified as per Rob Evans/SRO data provided to five subsections (Bailey, et. al. 1994). all target goals were divided to these subsections. The subsections were changed again in January 2001 at the request of community team member Tom Foti, who pointed out that the blackland and calcareous soils systems of the northwest area should have their own subsection. The result is the followings; this version of the stratification units or subsections was used to determine the community team goals.



Community target selection
--SRO/ Rob Evans queries BCD for community list and description.
--Community team reviews SRO community lists and comments. SRO/Rob incorporates reviews. The completion of this step was subject to conflicting ecological community concepts and lack of association-level data in Oklahoma, Louisiana, and Texas.
--Community team revises stratifications/subsections for ecoregion from 15 to 5; see above.
--Community team reviews and finalized changes to the community assignments. *Guidelines for Representing Ecological Communities in Ecoregional Conservation Plans* (TNC, 1999, p.25) was used to set community conservation goals for UWGCP.
Goals and viability are set by the community team through a series of conference calls and database adjustments.
--community team set goals and removed non-applicable associations. Result was removal of many associations sourced from the CSC list. During the course of goal setting for associations, TX and LA team members stated many associations could exist in theory in their areas (given appropriate ELUs) though they have not been seen or documented. Given these two factors, Rob Evans suggested moving to a group level goal setting. Groups here differ from alliances in that every association in an alliance must be present at a given occurrence, while associations under a group may be present in any combination, given ELUs and landscape factors. The community team agreed to set conservation goals by group. Community team members are confident that the group goals will capture all appropriate associations. Numerous conference calls were required to work through the community group list, and the final list was compiled by Dave Gosse and sent to Rob Evans for adjustments to the CSC database and to Mark Gallyoun for inclusion in the EOR compilation, which in turn will be used towards viability analysis.

Viability Analysis
A modified pass/fail method for viability analysis was set during core team calls and meetings during November and December, 2000. Data Manager Mark Gallyoun compiled the EOR returns for occurrences from TX, OK, LA, and AR for animals, plants, and plant communities. Expert opinion in the form of zoology, botany, and community technical teams was used to chose viable EO occurrences. Maps and spreadsheets for EO data were generated for zoology, botany and community teams

containing all element occurrences for their group. Using the conservation goals for each element, team members ranked occurrences. The end result was a prioritized list of element occurrences for each target for viable, unknown, and not viable. Targets with unknown viability were considered candidates for proto-EOs if necessary.
Technical team members were also given the opportunity to complete a viability worksheet prior to the first round of viability analyses. The preliminary viability analysis would greatly accelerate our progress and reduce or possibly obviate the need for facilitated viability analysis; as such many team members have requested that they begin analysis by reviewing the EO viability spreadsheet.
The modified pass/fail viability analysis weeds out old EOs and guides EO focus effort. For example, if 20 occurrences of a species are noted and the species' conservation goal is 10, which 10 occurrences have the best chance, are the most important, or are the most viable? It was determined that with two rounds of viability analyses, technical teams would have the chance to compare and weight occurrences. The final UWGCP element occurrence data set was used as a basis for the preliminary worksheet as well as for first and second round viability analyses. It incorporated EOs for all target species and communities, sorted by state/county, then by major group. A copy of the datasets, target spreadsheets, viability worksheets, and cluster analyses will be available upon request.

The modified pass-fail criteria was defined as:
Unknown: unknown or no data
Not Viable: EO is not viable
Viable: EO is viable
Priority Viable: EO is viable and is either an outstanding example or is irreplaceable

Technical teams were urged to consider landscape condition, size, and context in their analysis. If teams were not familiar with the landscape condition, size, and context on a certain EO, teams reviewed it with GIS tools including enhanced satellite coverage and MRLC land use coverage.

Teams added their viability ranks to the dataset. All pre 1980 records were labeled "U" for unknown listing, as they were considered unverifiable and in need of updating. Team members did not review geologic features, fish or mussel communities, or rookeries, though data on those elements were available as a decision-making tool.

Records that fell outside the ecoregion boundary, but within a ten mile buffer were still available for analysis but marked as "buffer." All other stratification units are marked according to the stratification units described in the preliminary GIS phase. Targets were divided into groups; i.e., Amphibians, Birds, Communities (terrestrial), Crustaceans, Fish, Fish Communities, Insects, Mammals, Mussels, Mussel Communities, Nesting Sites, Plants, Reptiles, and Rookeries.

As mentioned previously, many proto-EOs were created during the viability assessment and again in the data rollout review. Technical team members were urged to create a proto-EO wherever there is an indication of a target or multiple targets not represented at an EO or if the only listed EO is outdated. Technical team members annotated each Proto-EO so that it could be used in the future to update the ecoregional plan, and to provide state heritage programs with a starting point for further field verification and therefore, fieldwork funding justification.

As viability analyses were completed, they were returned to Phase II Data Manager Russell McDowell for compilation and standardization. Once finished, the dataset with viability rankings and proto-EOs added was crosswalked. A proto-EO analysis was performed by Rob Evans at SRO by:

1) Reviewing community EOs, and if there are any indication of multiple targets present at that EO, Rob inserted the appropriate number of corresponding EOs. For example, if a viable EO existed for a patch prairie savanna, proto-EOs were created for patch prairie and woodlands. A standard protocol was designed for creating and annotating proto-EOs.

Viability Assessment Process

Community team members, followed by botany and zoology team members went through the entire lists of applicable EOs for their state and after reviewing all available information, ranked as either Priority Viable (PV) (irreplaceable or of outstanding quality), Viable (V), Non-viable (NV), or Unknown (U). Some team members were more conservative when ranking viability, and ranked many EOs that they had not recently visited (or never visited) as unknown. Others were familiar with an area or knew of an EOs condition even if the last observation date made it nonviable. though all EOs with a LASTOBS last observation date of more than 20 years ago were considered nonviable, they were left on the datasheet and ranked by experts. the reasons were that in some states viable EOs have not been updated for a long time and though viable, had a last observation date of over 20 years ago. Also, all EOs forced experts to review the areas labeled as RCW clusters as dynamic areas. In all cases RCW EOs were discounted and proto-EOs centered in the area were used.

Similarly, if an EO for a certain target was outdated and the expert could verify its existence at the site or knew of the target's existence elsewhere, proto-EOs were created. in all cases EOs were annotated. All EO points were plotted in an Arcview project file divided into pre-and post 1980 EOs. Pre-1980s EOs were saved for experts' reference. Experts were also given 1999 LANSAT enhanced satellite coverage maps with geology, managed areas, and state/county boundaries for reference.

Experts were given hardcopy of the viability spreadsheet so that they could see all data for a particular EO at once. After viability was determined, the viability rank was added to the spreadsheet, which was converted to a .dbf file for Arcview use in cluster analysis and portfolio selection. The viability spreadsheet was sent to the data manager for compilation, error-checking, and cluster analysis in preparation for site selection. Aquatic communities and sites received a viability analysis as part of the aquatic site selection process performed at the Freshwater Initiative meeting in November, 2000.

Cluster Analysis and Site Selection

Site selection would begin around seed areas created from cluster analysis. Cluster analysis was performed by assigning buffers to PV- and V- ranked EO points according to their type. EOs were assigned buffers accordingly and clusters of buffers were used as starting points/seeds of site selection areas. A running tally was kept of each site and all EO points captured in the site.

- Matrix Communities: 10,000 – 5,000 acres
- Large Patch Communities: 500 – 200 acres
- Small patch communities: 50 – 20 acres
- Zoology targets: amphibians and fish: 1 mile radius; birds, reptiles, and mammals: 2 mile radius; crustaceans and mollusks: .75 mile radius; insects: .5 mile radius.
- Botany targets: 50 acres
- Aquatic targets: as initially specified by the aquatics group. stream and river reaches receive a 2.5 mile/side buffer. Stream reach sites were further defined during the site management planning process: aquatic clusters (stream reaches) were refined to 10 acres. Buffers were created for 330 feet per side of a stream reach.

Note that aquatic target viability analyses were performed separately at a Freshwater Initiative Conference in November 2000. In the portfolio conservation selection, some rivers received more than the standard radius; these areas were digitized from a standardized wild and scenic river GIS shapefile

and were modified according to ecologically important features of each river's alluvial plain. Many became part of macrosites and were, in fact, expanded.

Exceptions to the standard target buffers include:

- Swainson's warbler: at least 2,000 acres
- Big-eared Bat: 100 acres of cypress-tupelo within a forested matrix landscape of at least 5,000 acres.
- RCW: 100-140 acres per breeding pair, 50 breeding pairs per population. based on federal restoration plan and coordinated with LWGCP.
- Swallow-tailed kite: 75,000 acres (large bird guild species representative)
- LA black bear: >10,000 acres (Natureserve, 2001)
- Bison: next ecoregional plan update in 5 years
- Florida Panther: 100,000 acres (Jordan, 1995 for AR, LA areas, and Natureserve, 2001).
- Timber rattler: 500 acres (2.5 mi. radius around each den). (medium guild spp. representative in absence of suitable bird spp).

Clusters were overlaid on the 1999 LANSAT projection with managed areas, Phase 1 sites, ELUs and geology to help experts further refine portfolio site boundaries. All coverages were shown in an Arcview projectfile, which was projected on a dry-erase board.

Portfolio sites were drawn and refined as polygons on the dry-erase board and then later digitized. Data was recorded for each site electronically on a Microsoft Access database designed by the Data Manager ("Rustyform v. 1.0") and a worksheet was completed listing targets captured at site; the threats, feasibility, complentarity, conservation value, and leverage were ranked by experts. Results of the rankings would be compiled into Greg Low's tier Scoring for conservation value to help determine action sites.

Rollout Data Review

Once initial portfolio sites were selected, the Data Manager queried the EOs using the portfolio polygons to produce the first draft rollout data. Rollout data was presented in various forms for technical team expert review. Most useful were the reports Viable Target Occurrences by Site, Viable Target Occurrences by Element Code, and the Portfolio of Conservation Areas map. Data gathered through technical team input and review was incorporated in the portfolio database and returned as the first and second data rollouts. Rollout reviews were very useful, as technical teams redefined sites and added Proto-EOs where they weren't apparent during earlier rounds and corrected or refined previously collected data.

Stress/Sources of Stress analysis and Feasibility

Technical team members were provided with MS Access database Rustyform v1.0 containing all data collected for each portfolio site. Team members completed a sheet in the database for stresses and sources of stress by choosing selections from *Geography of Hope* from a pull down menu for each site. Data collected during this phase were used to in consideration of action sites.

Action Site Evaluation

Expert technical team members completed Greg Low's action site evaluation matrix to arrive at the ecoregional action sites. The evaluation matrix was reviewed and adjusted at the implementation meeting. The Number and Diversity of Targets field was derived from the data supporting the portfolio;

Complementarity and Leverage fields were derived from data but were subject to adjustment by evaluation participants. Urgency/Degree of Threat and Feasibility/Opportunity to Abate Treat fields were similarly subject to change upon review; Biodiversity Health of Targets was the only completely subjective field to be completed by evaluation participants. Action sites were reviewed at the implementation meeting in an effort to move away from the yes/no categorization towards a prioritization to reflect the concept that all sites are action sites. The Action Site Worksheet is included in this plan's data CD.

Publication Review

Rollout Data was circulated to all technical teams 4 times including final draft review. The text body of the ecoregional plan was circulated internally at TNC ARFO in December 2001. Changes were incorporated and the Final Draft was circulated for the UWGCP Implementation Meeting in March, 2002. Results of the Implementation Meeting were incorporated and the 2002 Iteration copy. Sections of the ecoregional plan were published in fulfillment of a TNC/DoD Multi-Site Management Agreement.

Metadata

Enhanced Satellite Imagery for Viability and Cluster Analyses, and Portfolio Area Site Selection

Created and Compiled by Mark Swan, TNC LAFO
Note that all metadata for coverages used in the UWGCP ecoregional plan are truncated from original metadata which complies with the standards set forth by the Federal Geographic Data Committee (FGDC).

Identification_Information:
Citation_Information: Originator: Mark Swan
Publication_Date: 19991201
Title: Color-enhanced 1992 Landsat TM Satellite Images
Geospatial_Data_Presentation_Form: remote-sensing image
Publication_Information:
Publication_Place: Baton Rouge, Louisiana
Publisher: The Nature Conservancy
Online_Linkage: <http://www.mapthedelta.org>
Description:
Abstract:
30-m rasters consisting of brightened and sharpened 1992 Landsat TM Satellite images (peripheral files, each 2-35 Mb for a total of 50 Mb)
Purpose:
The Nature Conservancy makes no representations about the suitability of the information delivered from this server or any documents that are referenced by or linked to this server for any purpose.
Supplemental_Information:
This metadata record pertains to eight (8) spatial coverages or layers. Each file spans one (1) degree of latitude, between the30-minute lines, e.g., 3130 to 3030 (8 rasters, each 20-28 Mb, 20 Mb zipped together).
West_Bounding_Coordinate: -92.499000
East_Bounding_Coordinate: -88.684000
North_Bounding_Coordinate: +37.498000
South_Bounding_Coordinate: +29.365000
Access_Constraints:
The Nature Conservancy places no restrictions on interaction with this server, including downloading of documents and related graphics.
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documents and graphics provided by this server shall not be construed as conferring any license or right under any Nature Conservancy copyright.
Point_of_Contact: Contact_Person: Mark Swan
Contact_Organization: The Nature Conservancy
Contact_Position: GIS Coordinator
Address: PO Box 4125
City: Baton Rouge
State_or_Province: LA
Postal_Code: 70821
Contact_Voice_Telephone: 225-338-1040
Contact_Electronic_Mail_Address: mswan@tnc.org
Data_Set_Credit:
Sponsors for the development and translation of data served by this Clearinghouse Node included Freeport-McMoran, Inc., U.S. Fish & Wildlife Service, Louisiana Department of Environmental Quality, U.S. Geological surveys Biological Services Division, the Brown Foundation, and the National Spatial Data Infrastructure. Special thanks to Jim Bob Moffitt (Freeport-McMoRan), Inc.), former Senator Bennett Johnston and Mary Catalo, David Pashley (American Bird Conservancy), Jan Boydston (LDEQ), Fred Limp (Arkansas CAST), Tom Foti (AR Heritage Commission), and Virginia Burkett (USGS). Funding for developing the Mississippi River Alluvial Plain Clearinghouse Node serving these data was provided by the National Spatial Data Infrastructure to The Nature Conservancy during late 1998 and 1999. The GIS Office (Paul Zundel, Director) of the Louisiana Department of Environmental Quality and the Lower Mississippi Valley GIS Committee (Jack Hill, Coordinator) served as Partners in the development of the Clearinghouse Node. The Nature Conservancy assembled these data for Ecoregional Planning for the Mississippi River Alluvial Plain Program (MSRAP). MSRAP funded GIS projects at the Louisiana Office of the Conservancy from 1992 to 1999. Nancy Jo Craig and her successor Lisa Creasman were Louisiana State Directors during those years. Lisa Creasman and her successor Cindy Brown headed MSRAP during the same period. Seven state offices (AR, KY, LA, MS, MO, TN) and regional offices of the Conservancy participated in MSRAP ecoregional planning.
Native_Data_Set_Environment:
MicroImages Inc. TNTmips v. 6.2 on Microsoft Windows NT v. 4 at Louisiana Office of The Nature Conservancy; see Supplemental Information for data size in megabytes (Mb).
Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
Independent assessments were not available for this edition of metadata.
Logical_Consistency_Report:
The datasets were created and/or translated by MicroImages Inc. TNTmips v. 6.2 software and tested on ESRI ArcView 3.1 software. Raster files described by this metadata document share geographical extents, pixel dimension, and spatial resolution.
Completeness_Report:
This layer covers the Lower Mississippi River Basin in AR, IL, KY, LA, MO, MS, and TN; cloud cover and smoke obscures small area; missing areas in central Arkansas and southeastern Louisiana are covered by supplementary files of different quality from AR CAST, LA DEQ, and LA DNR.
Horizontal_Positional_Accuracy_Report:
These spatial data were compared to 30m-resolution Landsat TM imagery and/or USGS Public Land Survey section lines.
Originator:
The Nature Conservancy, supported by a grant from National Biological Survey, now the Biological Resources Division of USGS

Publication_Date: 199606
Title: The Delta, Lower Mississippi Valley, Natural Resources Partnership: Geospatial Data Collection
Geospatial_Data_Presentation_Form: atlas
Online_Linkage: <http://www.mapthedelta.org>
Source_Contribution: These images were brightened and reprojected from Albers.
Process_Description:
The Nature Conservancy created these files to serve as a photographic backdrop for visualizing the Delta. Only 6 of the 8 images were published on The Delta CD-ROM. The Nature Conservancy used ERDAS at DNR to parse 10 Landsat TM images into 7.5-minute quadrangles. TNC used Adobe Photoshop to contrast-stretch and unsharp mask the separate images. TNC used Photoshop to stitch the files into larger files spanning a degree of latitude. TNC used MicroImages TNTmips to apply georeference information to the files. After the images were first published, TNC applied gamma curves in Adobe Photoshop to lighten them for viewing on Windows-based computers. TNC also reprojected the data to UTM-15, NAD83.
Source_Used_Citation_Abbreviation: TNC
Process_Date: 199604
Source_Produced_Citation_Abbreviation: TNC
Spatial_Data_Organization_Information:
Indirect_Spatial_Reference:
The region of coverage comprises the states encompassing the Mississippi River Alluvial Plain, i.e, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee
Direct_Spatial_Reference_Method: Raster
Raster_Object_Type: Pixel
Spatial_Reference_Information:
Grid_Coordinate_System_Name: Universal Transverse Mercator
UTM_Zone_Number: 15
Scale_Factor_at_Central_Meridian: 0.9996
Longitude_of_Central_Meridian: -96.0
Latitude_of_Projection_Origin: 0.0
False_Easting: 500000.0
Planar_Coordinate_Encoding_Method: row and column
Abscissa_Resolution: 30
Ordinate_Resolution: 30
Planar_Distance_Units: meters
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Clarke 1980
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.257
Entity_Type_Label: land cover
Attribute_Label: pixel z-value
Enumerated_Domain_Value: 0-255

Metadata for Geology coverage
From: http://geology.cr.usgs.gov/pub/National-Atlas/geologic/usgeomet8.html

Identification_Information:
Originator: John C. Reed, Jr.
Originator: Charles A. Bush
Publication_Date: 2001
Title: Generalized Geologic Map of the Conterminous United States
Edition: 1.0
Geospatial_Data_Presentation_Form: map
Publication_Place: Denver, CO
Publisher: U.S. Geological Survey
Online_Linkage: <http://geology.cr.usgs.gov/pub/National-Atlas/>
Description: Abstract:
This data set contains boundaries and tags for major geologic units in the conterminous United States. In addition to the polygons representing the areal extent of geologic units, it identifies boundaries of metamorphic provinces, major faults, calderas, impact structures, and the limits of continental glaciation. The data depict the geology of the bedrock that lies at or near the land surface, but not the distribution of surficial materials such as soils, alluvium, and glacial deposits. The data are generalized from a compilation prepared for use in the Geologic Map of North America, to be published in hard copy by the Geological Society of America and released as a digital file by the U.S. Geological Survey.
Purpose:
These data have been prepared with a degree of detail appropriate for viewing at a scale of 1:7,500,000. Because of the degree of generalization required (generalization based on compilation scale), the data are intended primarily for display and for regional and national analysis, rather than for more detailed analysis in specific areas. No responsibility is assumed by the U.S. Geological Survey in the use of these data.
Supplemental_Information:
The data set for the Geologic Map of the Conterminous United States consists of 9 data layers. The data layers for faults and glacial limit lines are included in two different versions. The data are available as shapefiles, SDTS files, or Arc/INFO Export files. The data layers are distributed and should be used together. All the data layers were created as ARC/INFO coverages and converted to other formats for distribution purposes. The following files are included:

Calderl075 – Outlines of major calderas and impact structures
Faultgl075 – Fault lines, with line decorations*
Faultl075 – Fault lines, without line decorations**
Geolgym075 – Geologic units, as polygons
Geotxtl075 – Graphic representation of geologic unit text*
Glacagl075 – Glacial limit lines, with line decorations*
Glacal075 – Glacial limit lines, without line decorations**
Impactx075 - Impact structure locations, as points
Metfacp075 - Areas and facies types of metamorphism, as polygons

* these files are not 'true' Arc/INFO coverages; they are graphic representations of symbols and text used on the geologic map. These files should be used to produce appropriately symbolized graphics. The decorations and text only appear correctly in Lambert Azimuthal Equal Area projection.

** these files are the same as the files marked with * but do not include the line decorations. They are the 'true' fault and glacial limit line Arc/INFO coverages. These files should be used for data analysis.
Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government Although this Federal Geographic Data Committee-compliant metadata file is intended to document the data set in nonproprietary form, some Arc/INFO-specific terminology is included for clarity and expediency.
Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 19980301
Ending_Date: 19990601
Currentness_Reference: Compilation date
Status:
Progress: Complete
Maintenance_and_Update_Frequency: As needed

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -124.73301687
East_Bounding_Coordinate: -66.95458457
North_Bounding_Coordinate: 50.00006074
South_Bounding_Coordinate: 24.51789429
Keywords:
Theme:
Theme_Keyword_Thesaurus:
American Geological Institute (AGI) Glossary of Geology
Point_of_Contact:
Contact_Person: John C. Reed, Jr.
Contact_Organization: U.S. Geological Survey
Contact_Address:
Address_Type: Mailing
Address: Mail Stop 913, Box 25046
City: Lakewood
State_or_Province: CO
Postal_Code: 80225
Country: USA
Contact_Voice_Telephone: 303-236-1276
Contact_Facsimile_Telephone: 303-236-0214
Contact_Electronic_Mail_Address: jreed@usgs.gov
Browse_Graphic:
Browse_Graphic_File_Name:
Data_Set_Credit:
Nancy Shock, Digital Cartographer, U.S. Geological Survey, assisted
in the digital compilation of this map.
Native_Data_Set_Environment:
SunOS, 5.6, sun4m UNIX
ArcNFO version 7.1.2
Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
The line attributes were manually checked by assigning unique line types to the values and then plotting the data. The plots were then compared to the source. The polygon attributes were checked by visually comparing the final colored plots to maps at various larger scales.
Logical_Consistency_Report:
Polygon and node topology are present. All polygons are labeled and were tested by using the Arc/INFO command LABELERRORS. All polygons were checked for closure, node errors, overshoots, undershoots, dangles and intersections using Arc/INFO routines. The Arc/INFO commands BUILD and CLEAN were run to ensure the topological consistency of the data set.
Completeness_Report:
This data set contains map unit boundaries and codes for the 48 conterminous States. Boundaries and codes are included for geologic units, metamorphic facies, limits of glacial advance, impact structures, caldera boundaries, and major faults.
Originator: Bally, A.W. (ed.)
Originator: Palmer, A.R. (ed.)
Publication_Date: 1989
Title: The Geology of North America; an Overview
Series_Information:
Series_Name: The Geology of North America
Issue_Identification: v. A, 619 p.
Publication_Information:
Publication_Place: Boulder, Colorado
Publisher: Geological Society of America
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:

Single_Date/Time:
Calendar_Date: 1989
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: DNAG-A
Source_Contribution: Line work and attributes.
Source_Citation:
Citation_Information:
Originator: Hatcher, R.D. (ed.)
Originator: Viele, G.W. (ed.)
Originator: Thomas, W.A., (ed.)
Publication_Date: 1989
Title: Appalachian-Ouachita Orogen in the United States
Series_Information:
Series_Name: The Geology of North America
Issue_Identification: v. F-2, 767 p.
Geospatial_Data_Presentation_Form: map
Publication_Information:
Publication_Place: Boulder, Colorado
Publisher: Geological Society of America
Source_Scale_Denominator: 5,000,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1989
Citation_Information:
Originator: King, P.B.
Originator: Beikman H.M.
Publication_Date: 1974
Title:
Geologic map of the United States (exclusive of Alaska and Hawaii)
Geospatial_Data_Presentation_Form: map
Publication_Information:
Publication_Place: Reston, Virginia
Publisher: U.S. Geological Survey
Source_Scale_Denominator: 2,500,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1974
Citation_Information:
Originator: Reed, J.C., Jr. (ed.)
Originator: Bickford, M.E. (ed.)
Originator: Houston, R.S. (ed.)
Originator: Link, P.K. (ed.)
Originator: Rankin, D.W. (ed.)
Originator: Sims, P.K. (ed.)
Originator: Van Schmus, W.R. (ed.)
Publication_Date: 1993
Title: Precambrian: Conterminous U.S.
Series_Information:
Series_Name: The Geology of North America
Issue_Identification: v. C-2, 657 p.
Geospatial_Data_Presentation_Form: map
Publication_Information:
Publication_Place: Boulder, Colorado
Publisher: Geological Society of America

Source_Scale_Denominator: 5,000,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1993
The geologic unit polygons (geolgym075), faults (faultl075), glacial limit lines (glacal075), boundaries of metamorphic provinces (metfacp075), calderas (calderl075), and impact structures (impactx075) were created using the following procedures: Data were compiled on scale-stable clear film at various scales. The lines and points were then digitized and georeferenced using the computer program GSMCAD, written by Van S. Williams, USGS. The program is available at no charge at <http://geology.cr.usgs.gov/maps/software.html>. Polygons, lines, and point features were attributed in GSMCAD.
Process_Description:
The data were exported from GSMCAD into Arc/INFO Generate format, and were imported into Arc/INFO coverages using AML routines provided with GSMCAD.
Process_Date: 1999
Process_Description:
Errors in polygon labeling were checked using the LABELERROR routine in ARCPLOT. Node errors were checked using ARCEDIT routines. Colored plots were made to make final checks of the overall coverages.
Process_Date: 1999
Contact_Person: Charles A. Bush
Contact_Organization: U.S. Geological Survey
Process_Description:
Supplementary graphical coverages were created for the faults (faultgl075) and glacial limit lines (glacagl075). These are the same as faultl075 and glacal075 except decoration lines have been added for display purposes. Another coverage was created containing arcs that represent text labels for the polygons (geotxtl075). This is also for display purposes.
Process_Date: 1999
Process_Contact: Charles A. Bush
Contact_Organization: U.S. Geological Survey
Horizontal_Coordinate_System_Definition: Geographic:
Latitude_Resolution: 0.0000094433083
Longitude_Resolution: 0.0000094433083
Geographic_Coordinate_Units: Decimal degrees
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: GRS1980
Semi-major_Axis: 6378137.0
Denominator_of_Flattening_Ratio: 298.257222
Line attribute Definitions (truncated):
A fault is a fracture or fracture zone in the Earth's crust along which one side moves with respect to the other. This data set includes both the faults and the line decorations.A fault is a fracture or fracture zone in the Earth's crust along which one side moves with respect to the other. A thrust fault is a gently inclined fault (less than 45 degrees) along which the principal movement has been more nearly horizontal than vertical. A normal fault is a steeply inclined fault (more than 45 degrees) where rocks above the fault have moved down relative to those below the fault. A large, shallowly-inclined normal fault formed during extension of the Earth’s crust. A fault that is assumed to be at the specified location. A fault is a fracture or fracture zone in the Earth's crust along which one side moves with respect to the other. 1-dimensional element that may or may not surround a 2-dimensional
element. A fault is a fracture or fracture zone in the earth’s crust along which one side moves with respect to the other. A thrust fault is a gently inclined fault (less then 45 degrees) along which the principal movement has been more nearly horizontal than vertical. A normal fault is a steeply inclined fault (more than 45 degrees) where rocks above the fault have moved down relative to those below the fault. A large, shallowly-inclined normal fault formed during extension of the Earth’s crust.A fault that is assumed to be at the specified location. Glacial limit line, with line decorations (described by glacagl075.aat or glacagl075.dbf) A line showing the southern limit of Late Wisconsin and pre-Late Wisconsin glaciation in the United States. For display purposes, tics are included along the line for line decorations. Values representing the limits of glacial advance at two selected times. A line showing the southern limit of Late Wisconsin and pre-Late Wisconsin glaciation in the United States.
Enumerated_Domain_Value: Amphibolite Facies Metamorphism
Enumerated_Domain_Value_Definition:
A metamorphic mineral assemblage formed under medium temperature and medium to high pressure.
Attribute_Definition_Source: U.S. Geological Survey

Attribute_Domain_Values:
Unrepresentable_Domain: There is no predefined set of remarks.
Entity_Type_Label:
Geologic unit (described by geolgym075.pat or geolgyp075.dbf)
Entity_Type_Definition:
Rock and material that lies at or near the land surface, but not surficial materials such as soils, alluvium, and glacial deposits. The units are defined by sedimentary, volcanic, plutonic, or metamorphic rock types and by their geologic age. The Text attribute is included to provide a method for generating the appropriate map symbols for display and publication purposes.

MAPUNIT_SY TEXT GEOLOGY----------

Q	Q Quaternary deposits
NT	nT Neogene sedimentary rocks
PgT	pgT Paleogene sedimentary rocks
KT	KT Cretaceous and Tertiary sedimentary rocks
Mz	%217 Mesozoic sedimentary rocks
LMz	l%217 Lower Mesozoic (Triassic and Jurassic) sedimentary rocks
UPz	u%216 Upper Paleozoic (Pennsylvanian and Permian) sedimentary rocks
PzMz	%216%217 Paleozoic and Mesozoic sedimentary rocks
mPz	m%216 Middle Paleozoic (Silurian, Devonian, and Mississippian) sedimentary rocks
Pz	%216 Paleozoic sedimentary rocks
lPz	l%216 Lower Paleozoic (Cambrian and Ordovician) sedimentary rocks
ZPz	Z%216 Upper Proterozoic and Lower Paleozoic sedimentary rocks
Z	Z Upper Proterozoic sedimentary rocks
Y	Y Middle Proterozoic sedimentary rocks
P_	%215 Proterozoic sedimentary rocks
X	X Lower Proterozoic sedimentary rocks
A	A Archean sedimentary rocks
K	K Cretaceous sedimentary rocks
Qv	Qv Quaternary volcanic rocks
nTv	nTv Neogene volcanic rocks
pgTv	pgTv Paleogene volcanic rocks
Kv	Kv Cretaceous volcanic rocks
Mzv	%217v Mesozoic volcanic rocks
lMzv	l%217v Lower Mesozoic (Triassic and Jurassic) volcanic rocks
PzMzv	%216%217v Paleozoic and Mesozoic volcanic rocks
mPzv	m%216v Middle Paleozoic volcanic rocks
lPzv	l%216v Lower Paleozoic volcanic rocks
ZPzv	Z%216v Upper Proterozoic and Lower Paleozoic volcanic rocks
Zv	Zv Upper Proterozoic volcanic rocks
Yv	Yv Middle Proterozoic volcanic rocks
Xv	Xv Lower Proterozoic volcanic rocks
pgTg	pgTg Paleogene granitic rocks
pgTi	pgTi Paleogene intermediate rocks
pgTm	pgTm Paleogene mafic rocks
KTg	KTg Cretaceous and Tertiary granitic rocks
Kg	Kg Cretaceous granitic rocks
Mzg	%217g Mesozoic granitic rocks
lMzg	l%217g Early Mesozoic granitic rocks
lMzm	l%217m Early Mesozoic mafic rocks
lMzu	l%217u Early Mesozoic ultramafic rocks
uPzg	u%216g Late Paleozoic granitic rocks
mPzg	m%216g Middle Paleozoic granitic rocks
mPzm	m%216m Middle Paleozoic mafic rocks
lPzg	l%216g Early Paleozoic granitic rocks
ZPzg	Z%216g Late Proterozoic and Early Paleozoic granitic rocks
ZPzm	Z%216m Late Proterozoic and Early Paleozoic mafic rocks
P_g	%215g Proterozoic granitic rocks
Yg	Yg Middle Proterozoic granitic rocks

Ym	Ym Middle Proterozoic mafic rocks
Ya	Ya Middle Proterozoic anorthositic rocks
Xg	Xg Early Proterozoic granitic rocks
Xm	Xm Early Proterozoic mafic rocks
Ag	Ag Archean granitic rocks
Zg	Zg Late Proterozoic granitic rocks
n	n Gneiss, age uncertain
ZPzn	Z%216n Late Proterozoic and Early Paleozoic gneiss
Yn	Yn Middle Proterozoic gneiss
Xn	Xn Early Proterozoic gneiss
An	An Archean gneiss
PzMzm	%216%217m Paleozoic and Mesozoic mafic rocks
Tv	Tv Tertiary volcanic rocks
nTg	nTg Neogene granitic rocks
H2o	H2o Water body

Distribution_Liability:
Although these data have been processed successfully on a computer system at the U.S. Geological Survey, no warranty expressed or implied is made by the U.S. Geological Survey regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by the U.S. Geological Survey in the use of thesedata.

Methodology for ELU creation: from A New High-Resolution National Map of Vegetation Ecoregions Produced Empirically Using Multivariate Spatial Clustering. *William W. Hargrove* and *Robert J. Luxmoore*. Methodology describes weights and factors contributing to ELUs. Data was downloaded and rectified to location. By Mark Swan

Abstract

A parallel supercomputer was used to divide the conterminous 48 states of the United States into 1000, 2000, 3000, 5000, and 7000 ecoregions with relatively homogeneous values of elevation, edaphic, and climatic variables using an iterative multivariate clustering technique. Resolution of the clustered maps is 1 square kilometer; each national map has over 7.7 million cells. Each cell has nine variables from maps with values for elevation, soil nitrogen, soil organic matter, soil water capacity, depth to water table, mean precipitation, solar irradiance, degree-day heat sum, and degree-day cold sum.

The resultant national maps objectively capture the ecological patterns of spatial variance in physical, edaphic, and climatic factors relevant for the distribution and growth of plants and animals. Assignment of red, green, and blue colors according to the principal component scores associated with the ranges of the nine variables defining each cluster results in a map where the ecological similarity of adjacent cluster regions is readily apparent. Maps with this gradually-changing color spectrum illustrate ecological relationships for plant growth derived from soil factors, physiognomy, and climate across the 48 states at user-defined resolutions. The clustering technique is being used as a way to spatially extend the results of simulation models by reducing the number of runs needed to obtain output over a larger area.

Introduction

Ecoregions have proven to be a useful concept to ecologists, and many variants of ecoregions have been developed. were based on perceived patterns of land use, land surface form, potential natural vegetation, and soils. Although delineated for national-level studies of water resources, Omernick's 76 national ecoregions have been borrowed for many other kinds of ecological studies. Bailey (1995, 1996) delineated 52 ecoregions at the finest province level, increased from 30 in his original Bailey (1983) version. The **Forest Service ECOMAP** effort is currently striving to break Bailey's divisions into finer-scale pieces. Other, different ecoregions, based on other criteria and for other purposes, have been specified by Kuchler, Holdridge (1947), Walter and Box, Thornwaite, Koppen, and many **others**. Because the delineation is based on subjective criteria, there are as many sets of ecoregions as there are **experts**.

An alternative to maps based on expert opinion is the use of more empirical and repeatable data analysis techniques for defining ecoregions. Yet obviously no single set of division criteria or scale of divisions will suffice for all ecological uses. Such a technique would encourage a proliferation of ecoregion divisions, each customized for a particular purpose.

Image classification is a well-known form of custom grouping, based on reflection characteristics, which results in the delineation of similar areas within an image. The ArcInfo function `ISOCLUSTER` uses a clustering technique on sampled subsets of cells to develop reflectance signatures for subsequent image analysis and classification. However, the technique has rarely been applied to primary, non-spectral data outside traditional image classification. Omi et al. (1979) used multivariate map clustering on primary variables including steepness, drainage, precipitation, and fault density to demarcate fire management planning zones in the Angeles National Forest in California.

Our objective is to create custom geographic ecoregions which are homogeneous with regard to the growth of woody vegetation. Our ecoregions are based on multivariate geographic clustering of 9 variables important to tree growth in 3 groups - elevation, soil or edaphic factors, and climatic factors. Within soil factors, we have maps of plant-available water capacity, soil organic matter, total Kjeldahl soil nitrogen, and depth to seasonally-high water table. The climatic maps include mean precipitation during the growing season, mean solar insolation during the growing season, degree-day heat sum during the growing season, and degree-day cold sum during the non-growing season. The growing season is defined by the frost-free period between mean day of first and last frost each year.

The Multivariate Geographic Clustering Technique

Maps of each of the nine input variables were generated for the continental United States, each containing 7.7 million cells at 1 km resolution. The geographic multivariate clustering process begins in geographic map space with the nine input maps, then enters statistical data space for the multivariate analysis, and emerges back from data space into geographic space when the final map is re-assembled.

The stack of 9 co-registered maps is disassembled into its component 1-km cells, while retaining the x,y position information for later re-assembly. Each cell, along with its 9 variable values, now becomes an observation in the multivariate statistical analysis. Although we use **GRASS** (1993), **ArcInfo** GRID, Spatial Analyst, or any other raster-based GIS may be used. The nine values are used as coordinates to specify a particular location for each of the 7.7 million sq km cells in a 9-dimensional data space (only 3 dimensions can be shown here). Then, using an iterative convergent procedure running on a **parallel supercomputer**, we divide groups of nearby, similar cells into a selected number of ``clouds'' until each of the 1 sq km cells has a cluster assignment. Cells are separated into as many discrete clouds of pixels with similar combinations of values of the 9 initial variables as the user has requested. If more clusters are requested, the variance within each cluster decreases. Finally, the pixels, with their cluster assignments, are re-integrated and assembled back into the map, color-coded by cluster number. Because cells with similar suites of variables that are nearby in data space are also likely to be near each other in geographic space, clusters often form contiguous groups of cells in the final map.
A principal component analysis is performed on the nine variable values associated with each pixel to remove correlations among the input variables, to standardize the mean and variance, and to reduce the dimensionality of the nine original variables to three principal component factors. The `k-means` clustering algorithm (MacQueen 1967) iteratively changes the cluster assignment of cells until a convergence criterion is met, and then the map is rebuilt.

Data Layers for the National Map of Vegetation Ecoregions

Available Soil Water Capacity

This is the map of plant-available soil water capacity, which is the difference between field capacity and wilting point. These data are from the national STATSGO database, developed by the Natural Resources Conservation Service. Soil water data are mapped by integrating downward through all soil horizons in each pedon, and then doing a weighted spatial average over each area component of each soil association polygon. There are over 10 thousand soil polygons in the entire map. Soils in the midwest (centered in Iowa) and in the south have the greatest soil water capacities.

Soil Organic Matter Content

A national map of total organic matter in soil was also developed from the **STATSGO database**. The color scale ranges from gray sandy soils to dark brown loamy organic peats. Again the midwest stands out, and so does the Okefenokee swamp in south Georgia and the Everglades of Florida.

Total Kjeldahl Soil Nitrogen

A national soil nitrogen map at 1-km resolution was developed from the May 1994 **National Soil Characterization Database**, linked back to the spatial information in **STATSGO** using soil taxonomic relationships. Soil nitrogen is high in the deep Mollisols of the midwest and in the Pacific Northwest.

Orographically-Corrected Mean Precipitation During the Growing Season

Orographically-corrected monthly mean precipitation from **Chris Daly's PRISM model** gives monthly rainfall equivalent at 4x4 km resolution which has been corrected for elevation effects. Monthly values of corrected precipitation are averaged over the days in the growing season for each cell in the map, so that southern cells are averaged over more months than northern cells, for example. The growing season is defined by the frost-free period, and months are linearly prorated for days when the month is not completely frost-free. Rainfall during the active growing season may be most important to growth of vegetation.

Mean Solar Irradiance at the Ground During the Growing Season

This is mean solar irradiance at the ground, from 2 data sources. The first source is **NASA GISS data from the ISCCP satellite over 7 years**, which includes interception by cloud cover and water vapor; the Pacific Northwest, for example, has relatively low irradiance. This source predicts solar energy interception by a flat plane oriented perpendicularly to latitude. This 1x1 degree map was splined to 20x20 km resolution before use. The second source is the **Swift** (1976) solar F algorithm, which uses the latitude, slope, and aspect at each cell in the map to calculate the ratio of flat plane solar interception to that of a surface oriented at the actual aspect of the cell. Aspect and slope are calculated from the North American portion of the **GTOPO30 global elevation data set**. This input map layer is also a weighted mean over the duration of the frost-free growing season at each cell in the map, assuming that it is the solar energy available to vegetation during the growing season that is important to plant growth.

Degree-Day Heat Sum During the Growing Season

This map is a degree-day heat sum above a threshold temperature of 5.55 degrees C, summed only over the growing season at each location - a seasonally-weighted degree-day map.

A series of 12 monthly national mean temperature maps are initially produced at 1-km resolution to generate the degree-day maps. A **parallel supercomputer** running a **regularized spline with tension and smoothing** produced one national monthly mean temperature map at each of 12 nodes. Monthly maximum and minimum temperature maps were also generated. The **U.S. National 1961 - 1991 Climate Normals**, measured at 4,761 National Climatic Data Center meteorological stations, are the **initial source of data for the monthly temperature maps**. To account for elevation effects on temperature, the adiabatic lapse rate, along with the station elevation from **GTOPO30**, is used to ``correct'' the temperatures measured at the station to an equivalent value for a weather station at mean sea level.

Because the adiabatic lapse rate depends on the amount of moisture in the air, the **mean monthly afternoon relative humidity** at a number of **weather stations** is interpolated to generate monthly maps of average relative humidity across the nation. Adiabatic lapse rates are then spatially and temporally (monthly) customized for the sea level adjustments at each location according to the elevation and appropriate humidity conditions at each cell.

National monthly maps are interpolated on these ``sea-level'' temperatures, and then temperatures at each cell in the maps are once again ``corrected'' back to the appropriate elevation from **GTOPO30** using spatially and temporally customized adiabatic lapse rates. A weighted-average of monthly mean temperatures over the frost-free growing season are calculated at each cell in the map to produce the degree-day maps.

Degree-Day Cold Sum During the Non-Growing Season

This map of degree-day cold sum below a 5.55 degree C threshold temperature is the converse of the last one, yet the two variables contain distinct information. Unlike the heat sum map, the cold sum map is averaged over the non-growing season. Plants are affected by temperature while they are growing, but also by how cold it gets while they are dormant.

Statistical Analysis

Principal component analysis on these nine input variables shows that 3 principal component factors explain more than 98% of the variance, and the variables load nicely on each factor, making them interpretable. Factor 1 is mostly associated with solar and elevation, with some influence of precipitation and water table depth - a sort of physiographic axis. Notice that precipitation is inversely related to depth to water table. Factor 2 loads with soil water, organic matter, and nitrogen, making Factor 2 essentially a soil resource axis. Factor 3 is heat and cold sums, inversely loading to create a thermal axis.

This is how the United States appears when clustered in ecological 3-space defined by the three principal component axes collapsed from the nine input variables. Each spot in this data space represents a mean centroid for one of 3000 clusters, and, in this visualization, the size and color of each of the centroids relates to how many of the 1-km cells are members of this cluster. The largest cluster is 22 thousand square kilometers, and the size distribution of clusters is a negative exponential. The largest cluster ``galaxies'' are close to the center of the data ``universe''. We have repeated this national clustering 5 times, requesting 7000, 5000, 3000, 2000, and 1000 output cluster ecoregions - much finer spatial divisions than provided by classical ecoregion maps.

Multivariate Vegetation Ecoregion Output Maps

This is how the United States appears divided into 3000 ecoregions based on elevation, soil, and climate. This many homogeneous ecoregions are somewhat overwhelming at this scale. Clusters tend to be larger in the central U.S. than other places. Examination of these 3000 ecoregions at smaller scales makes them much more interpretable. Still, we may wish for a way to color clusters not just randomly, but so that each of the colors reflect the values of the input variables within each cluster.

We have 3 principal component factors, and 3 color guns. If we map the 3 factor coordinates at the centroid of each cluster to each color gun, we can create a unique RGB color for each cluster ecoregion which reflects the principal component contributions of variable values within it. Now the map will show the relative importance of each of the 3 suites of variables at each cluster.

Based on the principal component factor loadings, the redder a cluster appears in this map, the higher solar input and elevation, and the drier. Greener areas are lower in soil organic matter, nitrogen, and water-holding capacity. Bluer areas are decreased heat sum, increased cold sum, i.e., colder. So red is hot and dry, green is poorer soil, and blue is cold.

This is the way that the national map of multivariate vegetation patterns appears under the new RGB color scheme. The individual clusters essentially merge with neighbors, and the map changes into a spectrum of color gradients which reflect the dominant suites of variables affecting vegetation growth in each region of the country. The red Southwest is dominated by physiographic factors. The blue Northeast is dominated by thermal factors. The green Southeast has rather poor soils, on the

whole. The upper midwest is very light blue because of the cold continental winter. The Pacific Northwest and the Central California valley are light green - fairly favorable conditions for plants.

If we start to zoom in on the Southeast, we can see the Fall line/Atlantic flatwoods, the Coastal Plain, the Piedmont, the Arkansas Blacklands, and the Ozarks. If we continue to zoom on Tennessee, the whole state appears as shades of green, but we can still see (from east to west) the Appalachians, the Ridge and Valley province, the colder (bluer) Cumberland plateau, the Nashville Basin, the Highland Rim/Pennyroyal plain, the Mississippi uplands, and the fertile light green alluvium of the Mississippi valley.

If we switch back to a random color scheme, we are looking at the same polygons as the last Tennessee map, just colored differently. We're still not close to the full 1-km resolution. There are many clusters in eastern Tennessee, due partly to the elevation gradients present there.

Now what does the United States look like if we **drop** the climate variables and **only** consider elevation and soil factors? Quite different; now spots in Southern Louisiana, Wisconsin, and Maine are all the same color - the same elevation and soil characteristics - but when we included climatic factors, all of these spots diverged radically.
To see any of the cluster maps in more detail, go to **http://www.esd.ornl.gov/projects/clustering/**.

Comparison with Existing Ecoregion Maps at Finer Scales

The Wisconsin Department of Natural Resources has assembled detailed maps of **4 alternative versions of ecoregions for the state of Wisconsin**: Omernick's (1987) ecoregions, Albert's (1995) Regional Landscape Units, Bailey's (1984) ecoregions, and Hole and Germain's (1984) Natural Divisions. Wisconsin was clipped from our national map clustered on the nine factors into 1000 pieces; the coarsest clustering we performed. The four existing alternative ecoregion maps for Wisconsin were overlain as vector lines on top of our randomly-colored cluster ecoregions. Although more finely divided than any of the extant ecoregion schemes, many of the borders of the multivariate vegetation clusters are shared with Albert's, Bailey's, and Hole and Germain's ecoregions. Only Omernick's divisions are a poor fit.

Final Comments

Interestingly, when the RGB color scheme is applied to **any** of the cluster maps (i.e., the 7000, the 5000, the 3000 cluster results, etc.), the resultant maps are visually indistinguishable. The national color pattern is the same, even though the underlying ecoregion polygons are completely different. All maps converge on a single picture of the ecological relationships among the variables. This suggests that, after the United States is divided into more than 1000 ecoregions, we have captured most of the national-scale spatial variance in vegetation patterns.
Multivariate geographic clustering can be used as a way to spatially extend the results of simulation models by reducing the number of runs needed to obtain output over a larger area. Simulation models can be run on each relatively homogeneous cluster rather than on each individual cell. The clustered map can be populated with simulated results cluster by cluster, like a paint-by-number picture. This cluster fill-in simulation technique will be used by the **Integrated Modeling Project** to assess the health and productivity of southeastern forests.
This multivariate geographic clustering technique has several advantages. Clustering is data-driven and empirical. One obtains the same result every time, given the same data and a request for the same number of clusters, in contrast to regions drawn by expert opinion. Users control what data are included for consideration in the clustering process based on what is appropriate for their purposes. Users are also able to select how many homogeneous regions are produced in the final clustered map. Finally, any eclectic combination of continuous variables can be combined to form homogeneous areas on a map.

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LEGEND.TXT
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LEGEND FOR UWGCP WORKING MAPS
Mark Swan 225-3~8-1040
The Nature Conservancy
FEATURES: OVERLYING ONES LISTED FIRST
ELEMENT OCCURRENCE RECO~~S
* identify by a black streak
* narrow end is at geographic origin of record
* direction of thick end identifies major group:
NNE = amphibian
NE = bird
ENE = CCMMUNITY
E = crustacean (crawfish)
ESE = fish
SE = fish "community"
SSE = insect
S = mammal
SSW = mussel
SW = mussel " community"
WSW = nesting site
W = plant
WNW = reptile
NW = rookery
NNW = (no majorgroup)
MAJOR ROADS
* dashed red (over MRLC) or black line (TM)
STATES
* thick black line
COUNTIES
* thick black text
* medium black line
RIVERS
* dull blue line (only over MRLC)
PARKS (refuges, WMAs, parks, preserves)
* some are named
* narrow black line
SOIL ASSOCIATIONS (state soils)
* name of most common soil of an association
* narrow red-brown (over MRLC) or yellow line
GEOLOGY
* codes (see list below)
* medium red-brown line

C	Cambrian
DS	Devonian and Silurian
Ki	Cretaceous intrusive rocks
lKl	Trinity group
lK2	Fredericksburg Group
lK3	Washita Group
M	Mississippian
01	Lower Ordovician (Canadian)
PPl	Atokan and Morrowan Series
Ppla	Atokan and Morrowan Series, Jackfork SS
PP2	Des Moinesian Series
PP3	Missourian Series
Oh	Holocene
Op	Pleistocene
Tel	Eocene Wilcox Group

Te2 Eocene Claiborne Group
Te3 Eocene Jackson Group
Tm Miocene
To Oligocene
Tpc Pliocene continental
Tx Paleocene
uK Upper Cretaceous
uKl Woodbine and Tuscaloosa groups
uK2 Austin and Eagle Ford Groups
uK3 Taylor Group
uK4 Navarro Group

ECOREGION
* thick white line
UWGCP SUBSECTIONS
* thick pink line
1992 MRLC CLASSIFIED IV~-GERY (green is dominant color)
* Water
11 Open Water -Dark (DULL) BLUE
Developed -DARK BROWN
21 Low Density Residential
22 High Density Residential -RED
23 Commercial/Industrial/Transportation -RED
Barren- -DULL WHITE
31 Bare Rock/Sand/Clay
32 Quarries/Strip Mines/Gravel Pits
33 Transitional
Forested Upland
41 Deciduous Forest -LIGHT GREEN
42 Evergreen Forest -DARK GREEN
43 Mixed Forest -MEDIUM GREEN
Shrubland
51 Shrubland
Non-natural Woody
61 Orchards/Vineyards/Other
Herbaceous Upland -YELLOW
71 Grasslands/Herbaceous
Herbaceous Planted/Cultivated -YELLOW
81 pasture/Hay
82 Row Crops
83 Small grains
84 Fallow
85 Urban recreational Grasses
Wetlands
91 Woody wetlands -LIGHT BLUE
92 Emerging Herbaceous Wetlands
1999 Landsat IM IMAGERY (red-brown is dominant color)

Appendix 4:
Data Gaps, Implications, and Solutions

This appendix should be used as a watch list and tracking tool to identify and address the data gaps encountered during the first iteration of the UWGCP Ecoregional Plan. This section is divided into two main areas, process data gaps and individual/EO data gaps.

Process Data Gaps

Data Gap/cause	Result	Plan Solution	Long-term Solution
Inconsistency in state tracked elements	Target species may not be represented by heritage data in particular state, no EOs may give misrepresentation that target is extirpated, outside of range, or is not viable.	Get expert opinion on spp; create proto-EOs for element or population as necessary.	Now that plan has identified certain species as targets, strive for consistency in tracking targets where they occur.
Existing EO records obsolete	Viability status of element misrepresented; experts may be forced to note status of element not based on recorded data.	Interview experts on each EO; provide data to heritage programs	Annotate historic records; update viable records in heritage database; transfer proto-records to heritage database.
Existing EO records obsolete but occurrence reported as viable upon expert query	On paper these EOs appear to be historic and may lead to the conclusion that the target is diminishing. When queried, experts maintain EO is viable.	Gain expert opinion/review on each EO as part of viability process	Move data from a carbon- to a more accessible silicon- based storage and retrieval system. Use data gap as leverage for heritage to ground-truth and update EO's in question.
Elements not attributed to populations; populations not defined	Element appears more viable than it is because of the accumulated number of EOs, most of which are historic or in need of updating; e.g., RCWs	Define or adopt population specifications for elements and apply to EOs with expert opinion.	Add population definitions or attribute data to element records. Update historic populations and EOs.
Lack of current data for certain elements	Large number of elements considered unknown for certain geographic areas; some elements considered possible but not confirmed	Use remote sensing to provide additional data towards expert decisionmaking.	Additional inventory and updates necessary in NW Louisiana, E Texas, Crosstimbers..

Data Gap/cause	Result	Plan Solution	Long-term Solution
Lack of habitat data for certain elements	Unable to make management decisions for elements	Treat elements as unknown/not viable	Gather additional habitat data on these elements.
Lack of community description to association level; described communities known from geographic areas; no consensus on association-level composition	Inconsistent tracking of community elements across state lines; unable to track or manage for fine-filter communities	Tracking and managing for communities at the group level; begin building association-level community descriptions and status.	Arrive at consensus on association-level communities; describe association-level communities throughout ecoregion.
Need to identify sites for their habitat or target viability potential	Expert review focus on current conditions at site, not historic or potential condition with stewardship program.	Decrease emphasis on updated remote sensing imagery	Attempt longer-range or ideal world view.
Lack of EO specifications and separation data	Inconsistency in EO definitions, understanding and meaning.	Review of all EOs; create standardized proto-EOs	Update heritage database, EO records, strive for consensus within states.
Frequent reclassification of community types and composition elements at all scales.	Confusion over community group, association, or target composition; Community EO disregarded based on obsolete data	Attempted to standardize community group and association makeup at the group level, update compositions when necessary.	Standardize community elements and types; update only on predetermined timeframe, i.e., ever 2 years.

Implications of Process Data Gaps

the long-term solution to solving many of these data gaps call for additional funds provided to heritage programs to complete inventory and to work across state lines—within ecoregions—to track and inventory identified species.

The ecoregional necessity to set community target goals at the group level instead of the association level effected a loss of data at the ecoregional level for states managing communities at the association level. The group goals set for the ecoregion were of little use in Arkansas, where communities were already inventoried and managed at the association level. In fact, the summary of communities to a group level represented a loss of data, though statistics for the ecoregion indicate goals were met for most related groups.

Individual/EO Data Gaps

Data Gap/cause	Result	Plan Solution	Long-term Solution
Lack of EOs and habitat data on *Fallicambarus jeanae.*	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Lack of EOs and habitat data on *Fallicambarus strawnii.*	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Lack of EOs and habitat data on *Bouchardina Robisoni.*	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
No data on *Hoperius Planatus.*	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Procambarus regalis only known from plowed fields; best/natural habitat unknown	Unable to properly manage for species	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Fallicambarus gilpini habitat unknown outside of roadside ditches.	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Fallicambarus caesius habitat unknown outside of roadside ditches.	Unable to properly manage for species.	Either use type locality to create proto-EO or reserve management specifications until data gap is filled.	Seek data to support management regime.
Antoine River only river in portfolio that originates in ecoregion, yet few viable EOs.	Elements suspected but not confirmed.	Use type locality to create proto-EOs.	Complete inventory of site.
Bell's Vireo.	Last minute addition—not enough data to list	Last minute addition—not enough data to list.	Add as target for next iteration.

Appendix 5

Ecoregional Targets

Botany Targets

Community Targets

Zoology Targets

Scientific Name	Common name	Fed Status	Current Grank	AR Srank	LA Srank	OK Srank	TX Srank	Final target Status	final distribution	Overall Goal	231A	231B	231C	231D	231E	Rationale	Comments
ASTER PUNICEUS VAR SCABRICAULIS	Rough-Stemmed Aster	C1	G5T2Q				S2	T	L	8						taxanomic Qs have been resolved, just a question of how to recognis	no stratification: most occurances in UWCCP; mostly in E. TX & 1parish in LA.
COREOPSIS INTERMEDIA	Golden Wave Tickseed	C2	G3		S2		S3	T	L	5				3	2	stratify between D&E	
ECHINACEA PURPUREA	Purple Coneflower		G3 G4		S1S2			T	L	5						DZ says important in prairies.	In prairies, woodland edges, openings. more important in xtimbers?
LIATRIS CYMOSA	Gay-Feather	3C	G2				S2	T	L	8							prairies, sandy/rocky soils
LIATRIS TENUIS	Slender Gay-feather	C2	G3		S1		S2S3	T	L	5							no stratification
PRENANTHES BARBATA	Rattlesnake Root	C2	G2 G3	S1	S1		S2	T	W	8	3	2		3		more LWGCP; keep as periferal	savanahs, wet woodlands
LEAVENWORTHIA AUREA	Golden Glade Cress	(PS)	G2			S2		T	L	12		12				only 3 in AR glades.	well represented in ecoregion should keep; check after Eos
LEAVENWORTHIA TEXANA	Golden Glade Cress	C2	G1				S1	T	L	5						no stratification: protect both taxa (leavenworthia) regardless of their names	Pasture seepage areas on ironstone rock in shallow soil from eroding calcareous formations; wf Maher, 1987.
LESQUERELLA ANGUSTIFOLIA	Three-leaved bladderpod		G3			S3		T	L	10						no stratification	change Srank in OK to S1
LESQUERELLA PALLIDA	White bladderpod	LE	G1				S1	T	E	5						same habitat as leavenworthia aurea; 2 populations currently exist	alkaline soils; can occur on edge of shrubs, on eocene-age weches formation outrcops in shaded thickets surrounding open glades
STREPTANTHUS MACULATUS	Clasping jewelflower		G3				S2	T	L	10		2		8		in TX and Ok in sandy soils	on boarder w/ piney--treat as endemic

Scientific Name	Common name	Fed Status	Current Grank	AR Srank	LA Srank	OK Srank	TX Srank	Final target Status	final distribution	Overall Goal	231A	231B	231C	231D	231E	Rationale	Comments
STREPTANTHUS SQUAMIFORMIS	Pine-oak jewelflower		G2			S1		T	L	8		8				primarily in ouachitas & UWGCP in slopes of pine oak forest; rocky soils	periferal, should still target; should probably be G1, state threatened in AR and OK
SILENE SUBCILIATA	Catchfly	C2	G3		S1		S3	T	L	5						dry/mesic prairies, open oak savannahs	nonendemic, no stratification
GEOCARPON MINIMUM	(NCN)	LT	G2	S2	S1			T	L	5						no stratification: a lot of patches at warren prairie but they're all in 1 location. Some good habitat; likes saline prairies.	saline-alkali soils at edges of highly localized surficial concentrations of sodium and magnesium salts; scattered across savannah-like formations / saline soil prairies: occurs with hypericum gentianoides, plantago pusilla; saxifraga texana; selenia aurea
AMORPHA PANICULATA	panicled indigobush		G3	S1		S1		T	L	5		2		3	1	S1, 1 historical 1 recent record,	2 parishes in LA, doesn't show fidelity to any habitat in particular
ASTRAGALUS SOXMANIORUM	a vetch		G3	S2	S2			T	L	5		2		2	1	only in 2 ecoregions	D&E in TX, B in B&D in LA; in miller county sandhills in AR
QUERCUS ARKANSANA	Arkansas Oak		G3	S3	S2			T	L	5		2		3		endemic to ecoregion	
LINDERA MELISSIFOLIA	Pondberry	LE	G2	S2				T	L	5						just found in ecoregion and MS. No stratification.	seasonally flooded wetlands; sandy sinks,calciferous soils, pond margins, swampy depressions. Perched water tables and in association with other bottomland hardwood vegetation.
CALLIRHOE BUSHII	Bush's poppy mallow		G3			S3		T	L	5						nonendemic; Grows in open rocky woodlands, edges of glades, and railroad right-of-ways, mostly in calcareous soils.	no stratification: better populated in Xtimbers; is definitely in ecoregion though; pretty well distributed in W. OK; is S3 now in OK, going towards S2; unless its common in TX
HIBISCUS DASYCALYX	Neches River mallow	C2	G1				S1	T	E	5							no stratification:
THALICTRUM ARKANSANUM	meadowrue	C2	G2Q	S2		S1	S1	T	E	12						only in eco in TX, AR in eco +1 in MSRAP	no stratification: 5 counties all in Ecoregion; 1-2 populations

Scientific Name	Common name	Fed Status	Current Grank	AR Srank	LA Srank	OK Srank	TX Srank	Final target Status	final distribution	Overall Goal	231A	231B	231C	231D	231E	Rationale	Comments
CRATAEGUS WARNERI	Warner's Hawthorne	C2	G2 Q				S2	T	L	8							no stratification: a lot of hybridization
PARNASSIA GRANDIFOLIA	Grass-of-parnassus		G3 G4			S1		T	L								
AGALINIS AURICULATA	Earleaf false foxglove		G3	S1		S1		T	L	5						1 occurance 2 individuals+ what's at grandview (whole population)	no stratification: collected from 1 county in ecoregion.
CAREX DECOMPOSITA	Cypressknee sedge		G3		S1			T	W	5						ephitic, undercollected. on cypress knees. EOs will be captured when capturing cypress communities.	no stratification: only known from 4 counties, 3 definitely in ecoregion; some at grassy lake.
CYPERUS GRAYIOIDES	Illinois flatsedge	C2	G3	S1	S2		S3	T	W	5						no stratification: 6 O in 2 counties, true range in AR not known, tons in TX	in AR at poison springs and AR Oaks; good represenative species
ERIOCAULON KOERNICKIANUM	small headed pipewort	C2	G2	S2		S1	S1	T	L	5						no stratification; hope to get 8	ARgot funding to do studies on species; ecology studies; only known in 1 county in this ecoregion, possibly disjunct; 1 popupation all subject to same envr. Stress
SCHOENOLIRION WRIGHTII	Sunnybell		G3	S2S3	S1			T	W	5	3	1	1			more in AR than other states in eco	likes saline soils; 5 counties. AR in A, TX in B, LA in B, some in C. more in xtimbers and piney
TRILLIUM TEXANUM	Texas trillium / wakerobin	C2	G2 G3		S1		S2S3	T	E	12						close to being an ecoregional endemic, mostly in NE TX	no stratification
CYPRIPEDIUM KENTUCKIENSE	southern lady's slipper	C2	G3	S3	S1	S1	S1	T	W	10	3	4		3		nonendemic, widespread. D and B but mostly historic; A and B in AR.	gets hammered by collectors; keep in mind as target for adjacent ecoregion; check pineywoods; good populations at natatoch.
XYRIS DRUMMONDII	Drummond's yellow-eyed grass		G3		S3			T	W	5						DZ wants in for seeps	
Tetragonotheca ludoviciana	Louisiana Square head		G4	S1	S2		S3	T	L	5						last minute addition	
Talinum rugospermum	Prairie Flame flower		G3 G4	S?	S?		S3	T	L	5						last minute addition	
Texas proposed species																	
AGRIMONIA INCISA	incised agrimony		G3					T	W	5						nonendemic	no stratification

Scientific Name	Common name	Fed Status	Current Grank	AR Srank	LA Srank	OK Srank	TX Srank	Final target Status	final distribution	Overall Goal	231A	231B	231C	231D	231E	Rationale	Comments
AMORPHA LAEVIGATA	smooth indigobush		G3					T	W	10		3		4	3	not in OK, AR, BC not sure where else it would be captured.	narrowly endemic according to Cortez. D&E in TX, Ok, LA. In OK more in xtimbers. Raised goal to ID data gap.
CUCURBITA TEXANA	Texas gourd		G3					T	W	5						no stratification	grows on floodplain detritus
VALERIANELLA FLORIFERA	Cornsalad		G3					T	L	5						no stratification	
Arkansas Proposed Species																	
Papepema Eringii			G1					T	L	5							
Parnassia Asarifolia	Kidneyleaf grass-of-parnassus		??					T	L	5							
Calapogon Oklahomensis	Oklahoma grasspink		??					N	L	5							

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320 series	Southeastern Coastal Plain Upland Longleaf Pinelands	Southeastern Coastal Plain Zeric Longleaf Pine Sandhill Pinelands AND Dry-mesic and mesic longleaf pine clayhill, flat, and swale pinelands	7907	320-10, 320-20	peripheral	small patch	Y	assoc. currently being defined	as need		**6**		EOs are xeric in 231D
365 series	Small Stream Forests	small stream forests	4911, 7976, 7320, 7903, 7980, 7369, 7953, 7900	365-10, 365-20	limited	small patch	Y	group	lose 7984, 7985, 7407 when moved from group to series; add 7900	91	**75**		these are big enough in AR to qualify as a matrix. For 365 as a series, approaching large patch size, actually more of a small patch limited.
CEGL002149	Quercus stellata - Quercus marilandica - Quercus velutina - Carya texana / Schizachyrium scoparium Woodland			II.B.2.N.a.25	limited	small patch		association meets Grank target criteria	changed from endemic to limited	18	**0**	none in OK = BH	DZ= same as 7900
CEGL003559	Pinus echinata / Quercus incana / Selaginella arenicola ssp. riddellii Woodland	Shortleaf Pine / Bluejack Oak / Riddell's Spikemoss Woodland		II.C.3.N.a.8	limited	large patch	Y	G2?	not in OK	9	**9**	BH = bluejack more assoc. w/ shortleaf--not in OK	DG= 1 goal in 231B is expected for Keys et al 231Ek (subsumed into 231EaM)
CEGL003571	Pinus palustris / Schizachyrium scoparium - Liatris pycnostachya Woodland	Longleaf Pine / Little Bluestem - Cattail Gayfeather Woodland		II.A.4.N.a.22	peripheral	large patch	Y	G2G3	RT/LS = peripheral to 40;	18	**6**	1-200 tops	occurs in transitional zone between longleaf and loblolly. Defined by temperature.
CEGL003693	Quercus arkansana - Quercus incana / Selaginella arenicola ssp. riddellii Woodland	Arkansas Oak - Bluejack Oak / Riddell's Spikemoss Woodland		II.B.2.N.a.15	endemic	large patch	Y	G2	LS = caddo, bossier, more lge patch	18	**18**		LS = historic large patch; now fragmented, dependent on soil type
CEGL003836	Arundinaria gigantea ssp. gigantea Shrubland	Giant Cane Shrubland		III.A.2.N.g.1	widespread	small patch	Y	G2?	using instead of 820-10	9	**9**		
CEGL003879	Crataegus spathulata - Cornus drummondii - Berchemia scandens Shrubland			III.B.2.N.a.7	NA		N	LS = not in ecoregion	possible but not described	0	**0**		keefer praire; possible but not seen yet
CEGL003904	Baccharis halimifolia - Crataegus berberifolia / Eleocharis sp. - Tridens strictus - Euthamia leptocephala Shrubland	Groundsel-tree - Barberry-leaf Haw / Spikerush species - Spike Triodia - Bushy Goldentop Shrubland		III.B.2.N.g.2	limited	small patch	Y	G1	changed from endemic to limited	13	**13**		
CEGL004021	Schizachyrium scoparium - Panicum flexile - Carex cherokeensis Herbaceous Vegetation			V.A.5.N.a.8	endemic	small patch	N	LS =not in ecoregion	possible but not described	0	**0**		keefer praire; possible but not seen yet
CEGL004022	Schizachyrium scoparium - Marshallia caespitosa - Nemastylis geminiflora Herbaceous Vegetation	Little Bluestem - Puffballs - Celestial-lily Herbaceous Vegetation		V.A.5.N.a.8	limited	small patch	Y	G1G2	morris red clay prairies; on old red river deps.	13	**13**		more in UW but some in WC. In bodcau bayou. BH= not a standalone community in OK. Nemastolis does better there.
CEGL004171	Eleocharis sp. - Iva angustifolia - Distichlis spicata Herbaceous Vegetation	Spikerush species - Narrowleaf Marsh-elder - Saltgrass Herbaceous Vegetation		V.A.5.N.m.13	endemic	small patch	Y	G1	TF = 231B or D	25	**15**		TF = AR EO is a salt spring; in Saline Parish downslope from dry saline prairie; geologically limited
CEGL004274	Bigelowia nuttallii - Aristida dichotoma - Houstonia rosea / Cladonia spp. Herbaceous Vegetation	Nuttall's Rayless-goldenrod - Forktip Three-awn - Rose Bluet / Reindeer Lichen species Herbaceous Vegetation		V.B.2.N.b.6	limited	small patch	Y	G1	dry phase saline; treating as limited (see distr)	13	**13**		

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CEGL004414	Quercus muehlenbergii - Quercus shumardii - Carya myristiciformis Forest	Chinquapin Oak - Shumard Oak - Nutmeg Hickory Forest		I.B.2.N.a.101	endemic	large patch	Y	G2G3	TF = lge patch	depends on size type	18		
CEGL004526	Thalia dealbata Herbaceous Vegetation			V.B.2.N.e.9	limited	small patch	Y	rank info needed from OK	not in eco in OK	13	13		none in OK
CEGL004624	Panicum virgatum - Tripsacum dactyloides Grand Prairie/Big Barrens Herbaceous Vegetation	Switchgrass - Eastern Gammagrass Grand Prairie/Big Barrens Herbaceous Vegetation		V.A.5.N.a.4	limited	small patch	Y	G2?	changed from endemic to limited	5	5		doubt this type occurs in ecoregion
CEGL007194	Quercus shumardii - Fraxinus americana - Carya myristiciformis / Viburnum dentatum / Carex cherokeensis Forest			I.B.2.N.a.40	endemic		N	LS = not in ecoregion	possible but not described	0	0		cooke mtn. Calcareous forest; not in ecoregion; possible but not described.
CEGL007272	Quercus shumardii - Quercus pagoda - Fraxinus americana / Ostrya virginiana - Cornus florida / Trillium ludovicianum Forest	Shumard Oak - Cherrybark Oak - White Ash / Eastern Hop-hornbeam - Flowering Dogwood / Louisiana Trillium Forest		I.B.2.N.a.40	limited	large patch	Y	G1	LS = changed from endemic to limited	13	5		
CEGL007318	Celtis laevigata - Gleditsia triacanthos - Sapindus saponaria var. drummondii / Lithospermum tuberosum - Carex willdenowii Forest			I.B.2.N.d.8	limited	small patch	N	LS, RT = no	not in ecoregion; in copenhagen in E central.	0	0	unsure until more data on eco is found out.	
CEGL007386	Crataegus opaca - Crataegus viridis Forest	Western Mayhaw - Green Hawthorn Forest		I.B.2.N.e.5	limited	small patch	Y	G1? (G3)	RT = typical mayhaw pond	13	5		RT =on upland landscapes w/ depressions, old stream channels & oxbows, windblown depressions wet in dry/mesic areas.
CEGL007524	Pinus taeda - (Pinus echinata) - Quercus alba - Carya alba / Acer leucoderme Forest	Loblolly Pine - (Shortleaf Pine) - White Oak - Mockernut Hickory / Chalk Maple Forest		I.C.3.N.a.24	limited	large patch	Y	G2G3	LS =not in LA; more in LWGCP	18	9		DG changed from endemic to limited based on subsect
CEGL007549	Quercus lyrata - Quercus phellos - Ulmus americana / Rhynchospora spp. Forest	Overcup Oak - Willow Oak - American Elm / Beaksedge species Forest		I.B.2.N.e.15	endemic	small patch	Y	G2G3	most likely limited; composed of general	13	9		
CEGL007768	Schizachyrium scoparium - Sporobolus compositus - Fimbristylis puberula var. puberula Wooded Herbaceous Vegetation	Little Bluestem - Tall Dropseed - Hairy Fimbry Wooded Herbaceous Vegetation		V.A.6.N.q.101	endemic	small patch	Y	G1G2	RE 370-30 not in assoc list from 9/15	25	25		klimer prairie dominant in Xtimbers.
CEGL007769	Schizachyrium scoparium - Sorghastrum nutans - Echinacea pallida - Dalea purpurea Herbaceous Vegetation	Little Bluestem - Yellow Indiangrass - Pale Purple Coneflower - Purple Prairie-clover Herbaceous Vegetation		V.A.5.N.a.8	endemic	large patch	Y	G2G3	adjust to large patch	depends on size type	13		could be there in OK but hasn't been seen yet.
CEGL007774	Sorghastrum nutans - Andropogon glomeratus - Silphium laciniatum Herbaceous Vegetation	Yellow Indiangrass - Bushy Broomsedge - Compass Plant Herbaceous Vegetation		V.A.5.N.a.8	endemic	small patch	Y	G1?		depends on size type	25		

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CEGL007775	Quercus shumardii - Carya myristiciformis - (Quercus muehlenbergii) / Carex cherokeensis - Sorghastrum nutans Woodland	Shumard Oak - Nutmeg Hickory - (Chinquapin Oak) / Cherokee Sedge - Yellow Indiangrass Woodland		II.B.2.N.a.21	endemic	small patch	Y	G1	RT = unknown toTX border around blacklands?; LS = unsure of in LA	depends on size type	25		ould exist in theory; not seen though possible in OK.
CEGL007777	Quercus stellata / Chasmanthium sessiliflorum - Schizachyrium scoparium Woodland	Post Oak / Longleaf Spikegrass - Little Bluestem Woodland		II.B.2.N.a.25	endemic	small patch	Y	G2?		depends on size type	25		
CEGL007778	Ulmus americana - Fraxinus pennsylvanica - Celtis laevigata / Glyceria striata - (Carex cherokeensis) Riparian Blackland Woodland	American Elm - Green Ash - Sugarberry / Fowl Mannagrass - (Cherokee Sedge) Riparian Blackland Woodland		II.B.2.N.a.101	endemic	small-large	Y	G1?	TF. DZ confirm?	25	15		
CEGL007779	Maclura pomifera - Diospyros virginiana / Glyceria striata - (Carex cherokeensis) Woodland	Osage-orange - Eastern Persimmon / Fowl Mannagrass - (Cherokee Sedge) Woodland		II.B.2.N.a.102	endemic	small?	Y	G2?	TF. DZ confirm?	25	15		
CEGL007797	Sedum pulchellum - Calamintha arkansana - Sporobolus vaginiflorus Herbaceous Vegetation	Widow's-cross - Low Calamint - Poverty Dropseed Herbaceous Vegetation		V.D.2.N.i.2	peripheral	small patch	Y	G1	on boundary.	25	10	RT = 7 known total	RT = formation its on straddles WGC
CEGL007798	Pinus echinata - Pinus taeda - Quercus stellata / Juniperus virginiana var. virginiana / Cornus drummondii Forest	Shortleaf Pine - Loblolly Pine - Post Oak / Eastern Red-cedar / Roughleaf Dogwood Forest		I.C.3.N.a.13	limited	small patch	Y	G1Q	RT = glade openings border; more like G2	25	9		may not all be pristine but there's a lot. Treat as G2
CEGL007800	Pinus echinata - Quercus falcata - Quercus stellata - Carya texana Woodland	Shortleaf Pine - Southern Red Oak - Post Oak - Black Hickory Woodland		II.C.3.N.a.11	limited	large patch	Y	G1	Historic condition of shortleaf	18	18	changed from endemic to limited based on Ecoreg conf	LS = historic woodland; don't know if any are left out there; will be a restoration effort
CEGL007812	Juniperus virginiana - Maclura pomifera / Bouteloua curtipendula - Thelesperma filifolium - Senecio tampicanus Wooded Herbaceous Vegetation	Eastern Red-cedar - Osage-orange / Sideoats Grama - Stiff Greenthread - Great Plains Groundsel Wooded Herbaceous Vegetation		V.A.6.N.q.101		small patch	Y	G1?		25	25	TF	BH = not a natural community in OK; something like that exists, but more as an old field in process of conversion.
CEGL007874	Viburnum nudum var. nudum - Myrica cerifera - Smilax laurifolia Shrubland	Southern Wild Raisin - Wax-myrtle - Blaspheme-vine Shrubland		III.A.2.N.i.3	endemic	small patch	N	G1?	RT = depauperate baygall?	0	0	western moist lower slope forest adjust other baygall assoc. upwards to reflex removing this one.	rare community or depauperate example of baygall?
CEGL007897	Fraxinus americana - Celtis laevigata - Nyssa sylvatica - Quercus shumardii - Ulmus americana Forest	White Ash - Sugarberry - Blackgum - Shumard Oak - American Elm Forest		I.B.2.N.a.40	limited	large patch	Y	G2G3	RT/LS =can't be endemic if in 40/41; general calcarous forest	18	9	changed from endemic to limited based on Ecoreg conf	LS = W. LA; mesic calcarous clays
CEGL007900	Quercus stellata - Quercus marilandica - Pinus taeda Jackson Acidic Clay Forest			I.B.2.N.a.41			N	LS = not in ecoregion	possible but not described	0	0		defined from copenhagen, not seen in 40 though possible

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CEGL007907	(Pinus palustris) - Quercus stellata - Quercus marilandica - Carya texana / Tragia urens Woodland			II.B.2.N.a.25	endemic	small patch	N	LS = definitely not.	consider using grp; RT = no need to go to group	0	**0**		RT = oak dominated dry ridgetops not to far outside of UW but there, ie sandhills in sabine NF
CEGL007950	Ulmus crassifolia - Celtis laevigata - (Ulmus rubra) / Carex digitalis - Geum canadense Silty Bottomlands Forest	Cedar Elm - Sugarberry - (Slippery Elm) / Slender Wood Sedge - Canada Avens Silty Bottomlands Forest		I.B.2.N.d.8	endemic	large patch	Y	G2G3?		18	**18**		
CEGL007952	Quercus pagoda - Liquidambar styraciflua / Ulmus crassifolia - Celtis laevigata - Carex cherokeensis Forest	Cherrybark Oak - Sweetgum / Cedar Elm - Sugarberry - Cherokee Sedge West Gulf Coastal Plain Transition Bottomland Forest		I.B.2.N.d.16	limited	large patch	N	G2G3?	RE derived from RT data? Descr. From 1 plot.	18	**0**		RT = similar to 7950; small stream bottoms
CEGL007955	Pinus taeda - Quercus (nigra, spp.) / Ostrya virginiana - Sabal minor Calcareous Sideslope Forest	Loblolly Pine - (Water Oak, Oak species) / Eastern Hop-hornbeam - Dwarf Palmetto Calcareous West Gulf Coastal Plain Transition Sideslope Forest		I.C.3.N.a.24	endemic	small patch	N	G2G3	run-of-the-mill stuff, nothing special; RT says take off. (maybe add to group)	25	**add to grp.**		
CEGL007956	Quercus stellata - Fraxinus americana - Carya texana / Forestiera ligustrina - Carex cherokeensis Calcareous Woodland	Post Oak - Cedar Elm - Black Hickory / Cherokee Sedge - Sharp-scale Sedge Calcareous Woodland		II.C.3.N.a.12	limited	small patch	N	G1	RE = not as a G1; not in TX	0	**0**		not in ecoregion. Changed from endemic to limited based on subsectconf
CEGL007962	Lythrum alatum - Panicum anceps - Aster lanceolatus Wet-Mesic Blackland Prairie Temporarily Flooded Herbaceous Vegetation	Winged Loosestrife - Beaked Panicgrass - Swamp Aster Wet-Mesic Blackland Prairie Temporarily Flooded Herbaceous Vegetation		V.A.5.N.a.4	endemic	small patch	Y	GHG1?		25	**25**		
CEGL007963	Quercus falcata - Carya illinoensis / Silphium integrifolium - Panicum anceps - (Carex cherokeensis, Festuca arundinacea) Mesic Blackland Savanna	Southern Red Oak - Pecan / Prairie Rosinweed - Beaked Panicgrass - (Cherokee Sedge, Tall Fescue) Mesic Wooded Herbaceous Vegetation		V.A.5.N.a.8	endemic	large patch	Y	G1	TF reviewed	18	**18**		
CEGL007964	Quercus pagoda - (Carya illinoensis) / Ilex decidua / Carex cherokeensis - Leersia virginica Mesic Blackland Woodland	Cherrybark Oak - (Pecan) / Possum-haw / Cherokee Sedge - White Cutgrass Mesic Blackland Woodland		I.B.2.N.a.40	endemic	large patch	Y	G1?	possible but not described in OK	18	**18**		possibly in OK, not actually seen/documented
CEGL007966	Quercus sinuata - Carya myristiciformis Mesic Ravine Woodland	Durand Oak / Eared Goldenrod - Nuttall's Deathcamas Mixed Herb Dry-mesic Blackland Ravine Woodland		II.B.2.N.a.21	endemic	small - large patch	Y	G1?	TF. DZ confirm?	25	**15**		
CEGL007967	Juniperus ashei Dry Chalk Outcrop Woodland	Ashe's Juniper Dry Chalk Outcrop Woodland		II.A.4.N.a.3	endemic	small patch	Y	G1		25	**25**		
CEGL007968	Quercus muehlenbergii - Schizachyrium scoparium Dry Calcareous Woodland	Chinquapin Oak - Durand Oak / Fragrant Sumac / Rough Blazingstar - Meadow Garlic - Little Bluestem Woodland		II.B.2.N.a.21	endemic	small patch	Y	G2	TF reviewed	25	**25**		
CEGL007969	Schizachyrium scoparium Limestone Glade	Upper West Gulf Coastal Plain Limestone Glade		V.A.6.N.q.101	endemic	small patch	Y	G2	note: "OC" type	25	**25**		TF
CEGL007970	Schizachyrium scoparium - Evax prolifera Gravel Glade	Little Bluestem - Big-head Pygmy-cudweed Gravel Glade		V.A.6.N.q.101	endemic	small patch	Y	G1?	note: "OC" type	25	**25**		
CEGL007971	Quercus alba - Carya alba - Fraxinus americana / Arundinaria gigantea - Cypripedium kentuckiense Mesic Ravine Forest	White Oak - Northern Red Oak - White Ash / Eastern Hop-hornbeam / Giant Cane / Wild Comfrey - Green Dragon - Southern Yellow Lady's-slipper Mesic Calcareous Ravine Forest		I.B.2.N.a.26	endemic	large patch	Y	G2		18	**18**		TF set final goals.
CEGL007972	Quercus incana - Quercus margarettiae - (Pinus echinata, Quercus arkansana) - Schizachyrium scoparium Dry Sandhill Woodland	Bluejack Oak - Sand Post Oak - (Shortleaf Pine, Arkansas Oak) - Little Bluestem Dry Sandhill Woodland		II.B.2.N.a.15	endemic	large patch	Y	G2?	LS = not a lot of difference between this and 3693	18	**18**		RT =dry on edge of post-oak savannah

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CEGL007979	Aristida (longispica, purpurascens, oligantha) - Krigia occidentalis - Ambrosia artemisiifolia Xero-Hydric Saline Soil Prairie				endemic	small patch	Y	G1G2		25	**25**		
CEGL008417	CAREX LURIDA - ANDROPOGON GLOMERATUS - SARRACENIA ALATA - SYMPHYOTRICHUM PUNICEUS VAR. SCABRICAULE - DOELLINGERIA SERICOCARPOIDES HERBACEOUS VEGETATION	Sallow Sedge - Bushy Broomsedge - Trumpet Pitcherplant - Purple-stem American-aster - Southern Whitetop Herbaceous Vegetation		V.A.5.N.m	peripheral	small patch	Y	G1	RT = cross-timbers description; treat as peripheral	25	**3**		
CEGL008419	ARISTIDA LONGESPICA - SCHIZACHYRIUM SCOPARIUM - DIODIA TERES SALINE HERBACEOUS VEGETATION	Slimspike Three-awn - Little Bluestem - Rough Buttonweed Saline Herbaceous Vegetation		V.A.6.N.q	limited	small patch	Y	G1G2	may only be AR; 4274 c/b LA version	13	**7**		
CEGL008421	SPOROBOLUS CLANDESTINUS - CALAMINTHA ARKANSANA - CAMASSIA SCILLOIDES - SABATIA CAMPESTRIS - TALINUM CALYCINUM - LICHENS NEPHELINE SYENITE HERBACEOUS VEGETATION	Secret Dropseed - Low Calamint - Atlantic Camas - Texas-star - Limestone Fameflower - Lichens Nepheline Syenite Herbaceous Vegetation		V.D.2.N.d	endemic	small patch	Y	G1		25	**25**		
CEGL008422	QUERCUS STELLATA) / SCHIZACHYRIUM SCOPARIUM - PIPTOCHAETIUM AVENACEUM - ARISTIDA PURPURASCENS - DELPHINIUM CAROLINIANUM NEPHELINE SYENITE WOODED HERBACEOUS VEGETATION	(Post Oak) / Little Bluestem - Eastern Speargrass - Arrowfeather Three-awn - Prairie Larkspur Nepheline Syenite Wooded Herbaceous Vegetation		V.A.6.N.q	endemic	small patch	Y	G1		25	**25**		
CEGR030510	Southeastern Coastal Plain Xeric Sandhill Woodlands and Forests	Southeastern Coastal Plain Xeric Sandhill Woodlands and Forests	7973; 3693; 7972; 3559	305-10	endemic	small patch	Y	group	sandhill community	100	**50**	xeric sandhill communities	treating as small-patch
CEGR030520	Southeastern Coastal Plain Dry-mesic Oak Forests and Woodlands	Southeastern Coastal Plain Dry-mesic Oak Forests and Woodlands	4543, 8414, 8415	305-20	endemic	large patch	N	group	oak dominated	54	**50**		common oak community.
CEGR030540	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	0	305-40	endemic	large patch	N			0	**0**		
CEGR030550	Southeastern Coastal Plain Dry-mesic Shortleaf Pine / Hardwood Forests and Woodlands	Southeastern Coastal Plain Dry-mesic Shortleaf Pine / Hardwood Forests and Woodlands	4713, 7947, 4444, 7525, 7499, 7800, 7957	305-50	endemic	large patch	Y	group		90	**42**		at 1,000 acres we don't need that many, need multiple viable examples more.
CEGR030560	Southeastern Coastal Plain Dry-mesic Loblolly Pine / Hardwood Forests	Southeastern Coastal Plain Dry-mesic Loblolly Pine / Hardwood Forests	7948, 7957, 7528	305-60	endemic	large - matrix	Y	combined w/ 305-50	combined w/ 305-50	54			
CEGR031010	Southeastern Coastal Plain Upland Mesic/Acidic Mixed Hardwood Forests and Hammocks	Southeastern Coastal Plain Upland Mesic/Acidic Mixed Hardwood Forests and Hammocks	7208, 7959	310-10	endemic	large patch	Y	group		72	**70**		weighted 231D.
CEGR031020	Southeastern Coastal Plain Upland Calcareous Mixed Hardwood Forests	Southeastern Coastal Plain Upland Calcareous Mixed Hardwood Forests	7207; 7971, 7897; 7524, 7955	310-20	endemic	small patch	Y	group		90	**70**	not necessarily prairie; more mesic less fire	7897 = not bottomland; more upland. 7524 = upslope from 7207
CEGR033040	Southeastern Coastal Plain Wet Hardwood Flatwoods	Southeastern Coastal Plain Wet Hardwood Flatwoods	7371, 7961	330-40	endemic	matrix	Y	group		20	**55**	weighted 231B, A, D	in AR on terraces along Ouachita (also falcon bottoms--in stream floodplain; in LA at LAAP--broader open woodland flatwood.
CEGR034010	Southeastern Coastal Plain Upland Depression Forested Ponds	Southeastern Coastal Plain Upland Depression Forested Ponds	7386, 7363	340-10	limited	small patch	Y	group	changed from endemic to limited	50	**20**		

Element Code	Scientific Name	Gcomname	Element Code in CEGR (group) *this field applies to CEGR only	Classif Code	Distribution	Pattern	Target Stat	Rationale	Comments	Default Conservation Goal	Final Conservation Goal	Final Goal Rationale	Final Comments
CEGR034530	Southeastern Coastal Plain Emergent Ponds and Marshes	Southeastern Coastal Plain Emergent Ponds and Marshes	4139	345-30	endemic	small patch	N	covered by 385-10	default too large	25	0	if we cover bottomlands we will cover this in 385-10	
CEGR034710	Southeastern Coastal Plain Herbaceous Seepage Bogs	Southeastern Coastal Plain Herbaceous Seepage Bogs	7974; 8417; 4916	347-10	endemic	small patch	Y	group	saline prairie	75	22	8417 endemic to 231E	8417 seen as separate from wooded seep. 4916 not in LA7974 present in AR as Traskwood seep
CEGR035010	Southeastern Coastal Plain Carbonate Glades and Barrens	Southeastern Coastal Plain Carbonate Glades and Barrens	7967, 7812, 7969, 7970	350-10	endemic	small patch	Y	group	7970 added from 350-20	100	20		these become more bare rock further west. Weches should definitely be in there.
CEGR035030	Southeastern Coastal Plain Salt Glades and Barrens	Southeastern Coastal Plain Salt Glades and Barrens	7979, 8419, 3904, 4274, 4171, 8418	350-30	limited	large & small	Y	group	large in AR, small in LA	78	14		
CEGR035040	Southeastern Coastal Plain Nepheline Syenite Glades and Barrens	Nepheline Syenite Herbaceous Glades	8422, 8421	350-40	endemic	small	Y	group/assoc		50	2		only 2 in existance
CEGR035730	Southeastern Coastal Plain Circumneutral/Basic Upland Forests and Woodlands	Southeastern Coastal Plain Circumneutral/Basic Upland Forests and Woodlands	3879, 7798, 8420, 7963, 4414, 7968, 7964, 7956, 7775,	375-30	limited	small to matrix	Y	group	set goals same as 375-20		52	mix of size types	A, B,C= small patch; F=matrix. D = 5 for LA, 15 for TX
CEGR036010	Southeastern Coastal Plain Baygalls and Bayheads	Southeastern Coastal Plain Baygalls and Bayheads	7982, 7474, 3530, 7975, 7904, 7874	360-10	endemic	small patch	Y	group		150	60		need largest blocks for highest quality. Ross foundation (AR) has 1~ 40acres
CEGR036510	Southeastern Coastal Plain Loblolly Pine – Hardwood Small Stream Forests	Southeastern Coastal Plain Loblolly Pine – Hardwood Small Stream Forests	7910, 4911, 7990	365-10	endemic	large patch	N	in 365 series		36	0	made one 365 series.	added 7990 from 340-50
CEGR036520	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	7407, 7369, 7985, 7984, 7903, 7320, 7980, 7953, 7976	365-20	endemic	large patch	N	in 365 series		162	0		
CEGR037520	Southeastern Coastal Plain Calcareous Patch Prairies	Southeastern Coastal Plain Calcareous Patch Prairies	8420, 7962, 4624, 4022, 4021, 7769, 7768, 7774, 2099	375-20	limited	small to matrix	Y	group		very hig	52	mix of size types	A, B,C= small patch; F=matrix. 7774, 7768, 7769 blacklands. D = 5 for LA, 15 for TX
CEGR037530	Southeastern Coastal Plain Circumneutral/Calcareous Prairie-Associated Upland and Slope Forests and Woodlands	Southeastern Coastal Plain Circumneutral/Calcareous Prairie-Associated Upland and Slope Forests and Woodlands		375-30			Y						
CEGR037540	Southeastern Coastal Plain Patch Circumneutral /Basic Ravine and Riparian Woodlands and Forests	Southeastern Coastal Plain Patch Circumneutral /Basic Ravine and Riparian Woodlands and Forests	8444, 7318, 7779, 7780, 7778	375-40	endemic	small patch	Y	group		25	35	mix of size types	C, D = large patch F, B = small patch
CEGR038510	Southeastern Coastal Plain Backswamp/Slough Floodplain Forests	Southeastern Coastal Plain Backswamp/Slough Floodplain Forests	7429, 2419, 7434, 7422, 2420	385-10	endemic	matrix/ large patch	Y	group	such a broad group need lgr goals		23		river corridor--still need unit of measurement
CEGR038520	Southeastern Coastal Plain Bottomland Hardwood Forests	Southeastern Coastal Plain Bottomland Hardwood Forests	7426, 7989, 7988, 7981, 7921, 7370, 4619, 2424, 7142, 7954, 2423, 7986, 7916, 2102, 7977, 7952, 7869, 7921,	385-20	limited	matrix/ large patch	Y	group			23		
CEGR038535	Southeastern Coastal Plain Circumneutral/Calcareous Bottomland Hardwood Forests	Southeastern Coastal Plain Circumneutral/Calcareous Bottomland Hardwood Forests		385-35			Y						
CEGR038530	Southeastern Coastal Plain Riverfront and Levee Bottomland Forests	Southeastern Coastal Plain Riverfront and Levee Bottomland Forests	2431, 7983, 7987, 4618, 7841, 7335, 7346, 7549, 7039	385-30	endemic	matrix/ large patch	Y	group	many types never resolved in classification		40		TF=riverfront communities not as common as in MSRAP; incorporate into bottomlands; use 8 in each associaton w/ matrix-forming bottoms

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CEGR048010	Eastern Wide Ranging Open Marshes and Ponds	Eastern Wide Ranging Open Marshes and Ponds	4527, 7835, 4323, 2386	480-10	widespread	matrix	Y	group			15		covers beaver ponds and sloughs
CEGR051010	Cross Timbers Oak Forests and Woodlands	Cross Timbers Oak Forests and Woodlands	4938, 2324, 2147	510-10	limited	matrix	Y	group		72	10		
CEGR052010	Crosstimbers Tallgrass Clay Prairies	Crosstimbers Tallgrass Clay Prairies	2217	520-10	limited	small patch	Y	group	treat as peripheral	50	10		
CEGR058010	Great Plains Herbaceous Aquatics	Great Plains Marshes and Open Ponds	4529, 2281	580-10	widespread	small patch	Y	group			6		
CEGR082010	Miscellaneous Wide-ranging Aquatic Shrub Swamps	Eastern Wide-ranging Shrub Swamps	3836	820-10	widespread	small patch	Y	group			15		

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PLETHODON KISATCHIE	Louisiana Slimy Salamander		G2 G3 Q		S1S2				L			L	T	should stay as target. Habitat: southern temperate evergreen/hardwood forests protected from fire, high humidity, confined to ravines or hillsides w/ leaf cover.	6	4 viable targets total; 6 would be applicable; mostly Louisiana, 2-3 records, unsure of managed area status.
HYLA AVIVOCA	Bird-Voiced Treefrog		G5	S2?		S2		L	P	L		L	T	Found mostly in high qual cypress byous, fragmented west of MS. 1 Population around Lorance creek, 1 in southern 1/2 of McCurtain county, also along Little River. Found at Little River, 231eb, Ai, EaM, El, Ec.	5	protecting G5 that's periferal but is indicator of good habitat.
RANA AREOLATA	Crawfish Frog		G4				S3		W	W		W	T	Some widespread declines in LA/piney; Known from Warren Prairie in AR; In prairies, woodlands, brushy fields in hardpan clay soils in low wet areas.	5	Consider as non-endemic G3
ELANOIDES FORFICATUS	Swallow-Tailed Kite		G5		S1S2	SH	S2B					L	T	LA has lge nesting population. known from Pond Creek Bottoms & Sulfur River.	5	guild species for large EOs --100,000 acres or more
STERNA ANTILLARUM ATHALASSOS	Interior Least Tern	PS: LE	G4T 2Q	S2B	S1B		S1		W	L		L	T	beaches, sandbars, sandy areas along rivers; FWS calls for 150 nesting adults along AR R., 300 along Red R.; essential breeding habitat = riverine sandbars, river channel envir.--100% dependent for food and nesting.	all viable	may be just 1 population; conserving this species means dealing w/ USACE; however it is protected. by stream; restoration will call for more than 1
PICOIDES BOREALIS	Red Cockaded Woodpecker	LE	G3	S2	S2	S1	S2B		P	W		L	T	units. Needs some restoration sites in AR, possibly in TX. Nonendemic G3; substantially declining in BBS; will give us need to protect mature pine woodlands. 1 in bellsenthal; population to N that potlatch is working on,	all viable	60 populations?
LIMNOTHLYPIS SWAINSONII	Swainson's Warbler		G4	S3B	S4B	S1B	S3B	L	P	L	L	L	T	3 in AR; Warren, Kingsland, & Grandview Prairie. 2ndary growth, dense swamps; like canebrakes; damp bottomland hardwoods or dense understory w/ little herbaceous ground cover.	5	Keep as guild bird for oak/gum/cypress, also highy priority for PIF
AIMOPHILA AESTIVALIS	Bachman's Sparrow		G3	S3B	S3	S2?			P	L		W	T	Should occur w/ RCW but not in old trees like RCW. dropping out in BBS trends, substantial declines; picked up in LRWR.	5	OK w/ younger trees open forest w/ clearcut. pine savannahs, undergrowth; mature open pine forests w/ dense grasses & forbs
AMMODRAMUS HENSLOWII	Henslow's Sparrow		G4	S1B,	S3N		S2S3N		P			L	T	wintering bird; esp s. of ecoregion; WH reports it S of Texarkana.	5	wet weedy fields, drier grassy areas

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SCAPHIRHYNCHUS PLATORYNCHUS	Shovelnose Sturgeon		G4	S3?	S4	S1	S4	L	W	L	L	L	T	most likely only in Red R. Red White, AR rivers: a large river fish; threats include damming. Likes strong current over gravel/sand, high turbidity tolerant.	5	difficulties in aquatics is they're only going to be found in sections anyway--streams broken up. 5 segments of 1 EO
POLYODON SPATHULA	Paddlefish		G4	S2?	S3	S1S2	S3		W			L	T	large, low-gradient rivers; strongly migratory, likes gravel substrate. Red, Ouachita, AR, Saline	5	
LEPISOSTEUS SPATULA	Southwest Alligator Gar		G5	S2	S4S5	S1	S4		W			L	T	no indication species still breeding, hit/miss?	5	
ALOSA ALABAMAE	Alabama Shad	C	G4		S1	S2			P			W	T	Only tracked anadromous fish in ecoregion--big river fish; distribution transverse across AR, couple for upper ouachita.	4	Possibly only western population remaining is in Ouachita R. above Rimmel dam--needs management plan.
NOTROPIS ATROCAUDALIS	Blackspot shiner		G4	S3	S3S4	S1	S3	L	L	L	L	L	T	essentially endemic; habitat Runs and pools of creeks and small to medium, shallow flowing rivers with bottom ranging from sand, gravel, and mud to rubble	5	
NOTROPIS BAIRDI	Red River shiner		G3	SH		S3	S3		L	L	L	L	T	populations, looks like main stem; 5 sections of the main stem	5	
NOTROPIS HUBBSI	Blacknose Shiner		G3	S3	S2	S1	S1		E			L	T	almost regional endemic; 10 populations	10	
NOTROPIS MACULATUS	Taillight Shiner		G5	S3		S1			W			W	T	common in ouachita and red drainage; mostly a tributary fish? Not really a mainstem fish, intolerant of silt?historically mainstream now confined to tributaries	2	
NOTROPIS SHUMARDI	Silverband shiner		G5			S2			W			W	T	split between 2; good reps in different parts of eco. Shumardi only in red while maculatus only in ouachita	2	
HYBOPSIS AESTIVALIS australis	Speckled Chub											L	T	australis is only ssp. In ecoregion, in Red R.	5	
CYCLEPTUS ELONGATUS	Blue Sucker		G4	S2	S2S3	S3			W			W	T	big river fish guild	8	
NOTURUS ELEUTHERUS	Mountain Madtom		G4			S2			W			W	T	disjunct on OK/AR otherwise not out of MS; prefers large streams, fast/clear sections, possibly get 5 separate streams.	5	
FUNDULUS BLAIRAE	Western Starhead Topminnow		G3 G4 Q			S2			P			P	T	still part of the guild, slow-moving water, large river	5	
CRYSTALLARIA ASPRELLA	Crystal Darter		G3	S2?		S1			W			L	T	indicative of large clear streams, clean sand/gravel	8	

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AMMOCRYPTA CLARA	Western Sand Darter		G3	S2?	S2	S2?			W			W	T	tributary of Ouachita	6	
MYOTIS AUSTRORIPARIUS	Southeastern Myotis Bat	C2	G3 G4	S2?		S1	S3			L		L	T	in Pond Creek bottoms	5	
CORYNORHINUS RAFINESQUII	Southeastern Big-Eared Bat	C2	G3 G4	S2		S1	S3		W	P		W	T	at LAAP	5	
URSUS AMERICANUS	American Black Bear	(PS)	G5			S1				W		W	T	indicator/large mammal/potential for reintroduction	4	
SPILOGALE PUTORIUS	Eastern Spotted Skunk		G5		S2				W	P		W	T		5	
FELIS CONCOLOR	Mountain Lion	(PS)	G5			S1			W				N			
FELIS CONCOLOR CORYI	Florida Panther	LE	G5T1	S1	SH								N	maybe for extirpated list; need to reintroduce on large landscape		hardwood bottomlands, mixed hardwood/pine, oak/pine, wet prairie; large acreage range
MACROCLEMYS TEMMINCKII	Alligator Snapping Turtle	C2	G3 G4		S3	S2	S3		W	L		W	T		5	
PITUOPHIS MELANOLEUCUS RUTHVENI	Pine Snake	C2	G4T3		S2S3		S2		P			P	T	only 4 viable exant populations known.	all viable	populations in area that will be managed as part of LWGCP.
ORCONECTES MALETAE	Crayfish		G2		S2							L	T	LA species; listed as G2, not necessarily AR endemic. Almost all LA endemic; mostly in in lower gulf. One record from Upshur county TX.	all viable	
PROCAMBARUS ELEGANS	Crayfish		G4		S2				E			E	T	mostl likely endemic, stream species	5	
PROCAMBARUS GEMINUS	Crayfish		G3 G4		S2S3				E			E	T	could be endemic; sluggish backwater/standing water	6	
FALLICAMBARUS JEANAE	Crayfish		G2	S2					E			E	T	ecoregional endemic	all viable	
FALLICAMBARUS STRAWNI	Crayfish		G1 G2	S1?					E			E	T	ecoregional endemic	all viable	
BOUCHARDINA ROBISONI	Crayfish		G1	S1?					E			E	T	ecoregional endemic	all viable	
FAXONELLA BEYERI	Crayfish		G4		S1S2				E			E	T	ditch crawfish--possibly endemic to ecoregion in LA and TX, may reach LWGCP.	all viable	
FAXONELLA BLAIRI	Crayfish		G2						E			E	T	SE OK and SW AR	all viable	
FAXONELLA CREASERI	Crayfish		G2		S2				L			L	T	G2 nonendemic	8	

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HOPERIUS PLANATUS	Predacious water beetle		G?	S?									??	predacious water beetle, G? seems to be east coast critter, ephemeral wetlands; need more info about range, Grank, state rank., occurances.		may end up taking out--need to see EORs. Any info on this spp. Would be helpful!
NICROPHORUS AMERICANUS	American burying beetle	LE	G1	S?		S1			W	L		W	T	burying beetle; AR, OK. oak/hickory forests, forest/savannah, open prairie; 500 adults per population	all viable	
BRACHYCERCUS FLAVUS	yellow mayfly, no common name		GH		S1?							L	T	yellow mayfly; known from 1 collection; bayou d'arbonne	all viable	
GOMPHUS OZARKENSIS			G4	S2?								L	N			
SOMATOCHLORA MARGARITA	dragonfly	C2	G2				S2					L	T	is this extinct? nonendemic G2? We need more info	8	
ARKANSIA WHEELERI	Ouachita rock-pocketbook mussel	LE	G1	S1		S1			E			L	T	only in 2 streams; pools, backwaters, side channels of rivers and large creeks; stable substrates w/ gravel, sand.	all viable	
CUMBERLANDIA MONODONTA	spectaclecase		G2 G3	S1								L	T	found in Oauchita R, 2 sites above Camden. in ecoregion? --seems to be a fairly widespread and EOs N. of AR in MO, TN, IL, etc. Suspect presence in eco is peripheral. Usually in clear fast streams, ie not uwgcp.	5	JLH found
CYPROGENIA ABERTI			G2	S2?					E?			L	T	found in ouchita and saline river guilds from JLH; taxa study indicating 2 separate species currently	5	in 4 states
ELLIPSARIA LINEOLATA			G4		S1	S2			W			W	T	widespread, nationally a species of special concern	5	contracting range nationally; manage before listing is necessary. Good to monitor.
ELLIPTIO DILATATA	Spike/Ladyfinger mussel		G5		S2S3	S1			W			W	T		5	
LAMPSILIS ABRUPTA	pink mucket/pearly mussel	LE	G2	S2	S1				W			W	T	in the red and the upper ouachita	all viable	1 occurrence = 1,000 linear meters w/ no barriers
LAMPSILIS POWELLII		LT	G1 G2	S2?								L	T	is in saline in upper part of ecoregion. Part of saline river guild.	5	
LEPTODEA LEPTODON	Scaleshell mussel	PE	G1 G2	S?		S1						L	T		all viable	
OBOVARIA JACKSONIANA	Southern Hickorynut mussel		G1 G2			S2						L	T		10	
PLEUROBEMA CORDATUM	Ohio Pigtoe mussel		G3			S2						L	T		5	
PLEUROBEMA RUBRUM			G2		S2							L	T	JLH confirms presence in ecoreion	8	in Saline river guild. Not in heritage Db

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PLEUROBEMA RIDDELLII	Louisana Pigtoe mussel		G1 G2		S1S2				L			L	T		all viable	
POTAMILUS AMPHICHAENUS	Texas Heelsplitter		G1			S1			P			P	T		all viable	
PTYCHOBRANCHUS OCCIDENTALIS	Ouachita Kidneyshell mussel		G3 G4		S1	S2			L			L	T		5	as nonendemic
QUADRULA CYLINDRICA	Rabbitsfoot	(PS)	G3		S1	S1			W			L	T		5	in Spring and black river drainage
QUADRULA CYLINDRICA CYLINDRICA			G3T3	S?								L	T		5	lump/roll into Q. cylindrica
QUADRULA FRAGOSA	winged mapleleaf	LE	G1	S1		S1						L	T		5	found in Quachita below camden and in Little missouri
VILLOSA ARKANSASENSIS			G2			S1S2						E	T	found in MTN fork, little river, OK AR	5	endemic to AR butmore in the ouachitas; most likely a ouachitanian species. Is also in OK (JLH. Vaughn, 2000)
Addition:																
crotellus artis	Timber Rattlesnake						LT					W	T	middle guild bird representative	all viable	good large habitat patch critter; viability in trouble. May be in Linux woods, some in IP areas that are not roadless but fairly secure.
fallicambarus caesius	crayfish											E	T		10	AR eco endemic
fallicambarus petillicarpus	Crayfish											L	T		10	AR eco endemic
fallicambarus gilpini	Crayfish											L	T		10	AR eco endemic
procambarus regalis	Crayfish											L	T		10	AR eco endemic

UWGCP Systems Targets

Elcode	Gname	Gcomname	Grank	Distribution	Goal
320 series	Southeastern coastal plain upland longleaf pinelands	SOUTHEASTERN COASTAL PLAIN ZERIC LONGLEAF PINE SANDHILL PINELANDS AND DRY-MESIC AND MESIC LONGLEAF PINE CLAYHILL, FLAT, AND SWALE PINELANDS	NA	peripheral	6
365 series	Small stream forests	SMALL STREAM FORESTS	NA	limited	75
CEGR030510	Southeastern coastal plain xeric sandhill woodlands and forests	SOUTHEASTERN COASTAL PLAIN XERIC SANDHILL WOODLANDS AND FORESTS	NA	endemic	50
CEGR030550	Coastal plain upland pine and pine-hardwood forests	COASTAL PLAIN UPLAND PINE AND PINE-HARDWOOD FORESTS	NA	endemic	42
CEGR030560	Southeastern coastal plain dry-mesic loblolly pine / hardwood forests	SOUTHEASTERN COASTAL PLAIN DRY-MESIC LOBLOLLY PINE / HARDWOOD FORESTS	NA	endemic	54
CEGR031010	Southeastern coastal plain upland mesic/acidic mixed hardwood forests and hammocks	SOUTHEASTERN COASTAL PLAIN UPLAND MESIC/ACIDIC MIXED HARDWOOD FORESTS AND HAMMOCKS	NA	endemic	70
CEGR031020	Southeastern coastal plain upland calcareous mixed hardwood forests	SOUTHEASTERN COASTAL PLAIN UPLAND CALCAREOUS MIXED HARDWOOD FORESTS	NA	endemic	70
CEGR033040	Southeastern coastal plain wet hardwood flatwoods	SOUTHEASTERN COASTAL PLAIN WET HARDWOOD FLATWOODS	NA	endemic	55
CEGR034010	Southeastern coastal plain upland depression forested ponds	SOUTHEASTERN COASTAL PLAIN UPLAND DEPRESSION FORESTED PONDS	NA	limited	20
CEGR034710	Southeastern coastal plain herbaceous seepage bogs	SOUTHEASTERN COASTAL PLAIN HERBACEOUS SEEPAGE BOGS	NA	endemic	22
CEGR035010	Southeastern coastal plain carbonate glades and barrens	SOUTHEASTERN COASTAL PLAIN CARBONATE GLADES AND BARRENS	NA	endemic	20
CEGR035030	Southeastern coastal plain salt glades and barrens	SOUTHEASTERN COASTAL PLAIN SALT GLADES AND BARRENS	NA	limited	14
CEGR035040	Southeastern coastal plain nepheline syenite glades and barrens	NEPHELINE SYENITE HERBACEOUS GLADES	NA	endemic	2

Elcode	Gname	Gcomname	Grank	Distribution	Goal
CEGR035730	Southeastern coastal plain circumneutral/basic upland forests and woodlands	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/BASIC UPLAND FORESTS AND WOODLANDS	NA	limited	52
CEGR036010	Southeastern coastal plain baygalls and bayheads	SOUTHEASTERN COASTAL PLAIN BAYGALLS AND BAYHEADS	NA	endemic	60
CEGR037520	Southeastern coastal plain calcareous patch prairies	SOUTHEASTERN COASTAL PLAIN CALCAREOUS PATCH PRAIRIES	NA	limited	52
CEGR037530	Southeastern coastal plain circumneutral/calcareous prairie-associated upland and slope forests and woodlands	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS PRAIRIE-ASSOCIATED UPLAND AND SLOPE FORESTS AND WOODLANDS	NA	limited	15
CEGR037540	Southeastern coastal plain patch circumneutral / basic ravine and riparian woodlands and forests	SOUTHEASTERN COASTAL PLAIN PATCH CIRCUMNEUTRAL /BASIC RAVINE AND RIPARIAN WOODLANDS AND FORESTS	NA	endemic	35
CEGR038510	Southeastern coastal plain backswamp / slough floodplain forests	SOUTHEASTERN COASTAL PLAIN BACKSWAMP/SLOUGH FLOODPLAIN FORESTS	NA	endemic	23
CEGR038520	Southeastern coastal plain bottomland hardwood forests	SOUTHEASTERN COASTAL PLAIN BOTTOMLAND HARDWOOD FORESTS	NA	limited	23
CEGR038530	Southeastern coastal plain riverfront and levee bottomland forests	SOUTHEASTERN COASTAL PLAIN RIVERFRONT AND LEVEE BOTTOMLAND FORESTS	NA	endemic	40
CEGR038535	Southeastern coastal plain circumneutral/calcareous bottomland hardwood forests	SOUTHEASTERN COASTAL PLAIN CIRCUMNEUTRAL/CALCAREOUS BOTTOMLAND HARDWOOD FORESTS	NA	limited	5
CEGR048010	Eastern wide ranging open marshes and ponds	EASTERN WIDE RANGING OPEN MARSHES AND PONDS	NA	widespread	15
CEGR051010	Cross timbers oak forests and woodlands	CROSS TIMBERS OAK FORESTS AND WOODLANDS	NA	limited	10
CEGR052010	Crosstimbers tallgrass clay prairies	CROSSTIMBERS TALLGRASS CLAY PRAIRIES	NA	limited	10
CEGR058010	Great plains herbaceous aquatics	GREAT PLAINS MARSHES AND OPEN PONDS	NA	widespread	6
CEGR082010	Eastern wide-ranging shrub swamps	EASTERN WIDE-RANGING SHRUB SWAMPS	NA	widespread	4

Appendix 6

Explanation of Heritage Element Ranking

Each species and natural community is given two ranks, a global (G) rank reflecting its rarity throughout the world, and, a state (S) rank reflecting its rarity at the state level.

Global Rank

G1-Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor of its biology making it especially vulnerable to extinction.

G2-Imperiled globally because of rarity (6-20 occurrences for few remaining individuals or acres) or because of other factors demonstrably making it very vulnerable to extinction throughout its range.

G3-Either very rare and local throughout its range, or found locally (even abundantly at some of its locations) in a restricted range, or because of other factors making it vulnerable to extinction throughout its range; in the range of 21-100 occurrences.

G4-Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5-Demonstrably secure globally, though it may be quite rare imparts of its range, especially at the periphery.

GH-Historically known, with the expectation that it may be rediscovered.

GX-Believed to be extinct.

GU-Not yet ranked.

?-There is a question about the given rank.

Q-There are taxonomic questions concerning a species.

T-Associated with global rank, indicating a global rarity for a particular subspecific taxon.

State ranks (S) are the same, substitute the name of the state for globally.

Explanation of Federal and State Status Abbreviations.

Federal

LE-Listed Endangered.

PE-Proposed for listing as Endangered.

LT-Listed Threatened.

PT-Proposed for listing as threatened.

LELT-Listed Endangered in some USFWS regions and Threatened in others.

C1-Category 1 species for listing. Species determined to be in need of protection by listing as Endangered or Threatened.

C2-Category 2 species for listing. Species needs additional study to determine whether it should be listed as endangered or threatened.

3C-Category 3 species. Currently, the species is not recommended for listing as Endangered or Threatened.

State-Arkansas does not give status to animals.

SE-Endangered in State

ST-Threatened in State

SS-species of special concern.

SS1-A species that current evidence indicates is especially vulnerable to extirpation because of limited range, low population or other factors.

SS2-A species identified by technical experts as possible threatened or vulnerable to extirpation but for which additional information is needed.

Appendix 7
Ecoregional Plan Partnership Members and Contact List

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- Pine Bluff Arsenal
- Louisiana Army Ammunition Plant
- Barksdale Air Force Base
- Naval Space Command, Lewisville, Arkansas
- Red River Army Depot
- Lone Star Army Ammunition Plant

U.S. Environmental Protection Agency, Region 6
U.S. Fish and Wildlife Service
U.S. Forest Service

State Partners
Arkansas Game and Fish Commission
Arkansas Department of Environmental Quality
ARDEQ Watershed Advisory Group
Arkansas Forestry Commission
Arkansas Natural Heritage Commission
Arkansas Soil and Water Commission
Arkansas State Highway and Transportation Department
Oklahoma Biological Survey
Louisiana Natural Heritage Program
Texas Natural Resources Conservation Commission
Texas Parks and Wildlife Division

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Association for Biodiversity Information
The Audubon Society
The Freshwater Initiative
Mississippi Valley Regional Joint Venture Program
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Local Nonprofit Partners
Bayou Bartholomew Alliance
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Appendix 8

Crossover Elements with Neighboring Ecoregions

Scientific name	Common name	Grank	Target in what other ecoregions? (goal) (viable)
Leavanworthia Texana	Golden glade cress	G1	Lower West Gulf Coastal Plain (12)(2)
Lesquerella Padilla	White bladderpod	G1/LE	Lower West Gulf Coastal Plain (12)(4)
Straptanthus Maculatus	Clasping jewelflower	G3	Lower West Gulf Coastal Plain (5)(1)
Streptanthus squamiformis	Pine-oak jewelflower	G2	Ouachita Highlands
Silene subciliata	Catchfly	G3	Lower West Gulf Coastal Plain (10)(20)
Geocarpon minimum	Geocarpon	G2/LT	Lower West Gulf Coastal Plain (8)(2)
Amorpha paniculata	Panicled indigobush	G3	Lower West Gulf Coastal Plain (5)
Quercus arkansana	Arkansas oak	G3	Lower West Gulf Coastal Plain (5)
Lindera melissifolia	Pondberry	G2/LE	Mississippi River Alluvial Plain (5)
Callirhoe Bushii	Bush's poppy mallow	G3	Ouachita Highlands
Hibiscus dasycalyx	Neches River mallow	G1	Lower West Gulf Coastal Plain (8)(1)
Thalictrum arkansanum	Meadowrue	G2Q	Ouachita Highlands
Parnassia Grandifolia	Grass-of-Parnassus	G3G4	Ouachita Highlands
Carex decomposita	Cypress-knee sedge	G3	Lower West Gulf Coastal Plain (5) Mississippi River Alluvial Plain (5)
Cyperus crayiodes	Illinois flatsedge	G3	Lower West Gulf Coastal Plain (5)(14)
Eriocaulan koernickianum	Small-headed pipewort	G2	Ouachita Highlands
Schoenolirion wrightii	Sunnybell	G3	Lower West Gulf Coastal Plain (5)
Trillium texanum	Texas trillium / wakerobin	G2G3	Lower West Gulf Coastal Plain (8) Ouachita Highlands
Cypridium Kentuckiense	Southern lady's slipper	G3	Lower West Gulf Coastal Plain (5)(7) Ouachita Highlands
Xyris drummondii	Drummond's yellow-eyed grass	G3	Lower West Gulf Coastal Plain (5)(40)
Agrimonia incisa	Incised agrimony	G3	Lower West Gulf Coastal Plain (1)(2)
Cucurbita texana	Texas gourd	G3	Lower West Gulf Coastal Plain(5)
Plethadon Kisatchie	Louisiana slimy salamander	G2G3	Lower West Gulf Coastal Plain (10)
Elanoides forficatus	Swallow-tail kite	G5	Lower West Gulf Coastal Plain(1)
Sterna antillarum athalassos	Interior least tern	G4T2	Mississippi River Alluvial Plain (8)
Picoides borealis	Red cockaded woodpecker	G3/LE	Lower West Gulf Coastal Plain (5)
Limnothlypis swainsonii	Swainsons's warbler	G4	Ouachita Highlands
Aimophila aestivalis	Bachman's sparrow	G3	Lower West Gulf Coastal Plain(5) Ouachita Highlands
Ammodramus henslowii	Henslow's sparrow	G4	Ouachita Highlands Lower West Gulf Coastal Plain(5)
Scaphirhynchus platorynchus	Shovelnose sturgeon	G4	Ouachita Highlands
Polydon Spathula	Paddlefish	G4	Ouachita Highlands
Lepisosteus spatula	SW alligator gar	G5	Ouachita Highlands
Notropis Bairdi	Red River shiner	G3	Ouachita Highlands
Notropis Hubbsi	Blacknose shiner	G3	Mississippi River Allival Plain (10)
Notropis maculatus	Taillight shiner	G5	Ouachita Highlands
Cycleptus Elongatus	Blue Sucker	G3G4	Ouachita Highlands

Appendix 9
Target List additions for Next Iteration of UWGCP Ecoregional Plan

Planning technical expert teams should consider the addition of the following targets. Also note that all targets should be reviewed upon initiation of next plan iteration.

Mussels
IMBIV17010 *Fusconaia askewi* Texas Pigtoe
Thought not to be in ecoregion, during initial target selection. Now, "Known from the western Gulf drainages of Texas and Louisiana. Most of the Texas records are from the Neches and Sabine rivers (Howells et al. 1997); possibly occurs in the southern portion of the Mississippi Interior Basin drainage (Vidrine 1993). A report from Oklahoma (Valentine and Stansberry 1971) is the only record of it north of the Sabine River and the taxonomic status of fusconaids from Big Cypress Bayou in Texas remains to be resolved." –Natureserve

IMBIV17060 *Fusconaia ebena* Ebonyshell G4G5 Alabama (S5), Arkansas (S3S4), Georgia (S?), Illinois (S2), Indiana (S4), Iowa (SU), Kentucky (S4S5), Louisiana (S3), Minnesota (S1), Mississippi (S4), Missouri (S1?), Ohio (S1), Oklahoma (S1), Tennessee (S4S5), West Virginia (S1), Wisconsin (S1)

ABPBW01110 *Vireo bellii* Bell's vireo G5 S3 (TX), S1 (LA), S3 (AR)
Breeding populations have steadily declined across its range in the last several decades. Threats include fragmentation and loss of riparian habitat, and brood parasitism by cowbirds.

Fish:
AFCJC05010 *Erimyzon oblongus* Creek chubsucker G5 S2S3 (TX)
On the TX state threatened list, declining due to siltation of stream habitat. (removed in 1st iteration).

Plants:
PDSCR1L1F0 *Penstemon cobaea v. purpurea* PDSCR1L1F0 COBAEA BEARDTONGUE G4 S3 (AR) patch prairie/barrens indicator

PDAST96020 *Tetragonotheca ludoviciana* Louisiana squarehead G4 S1(AR), S2(LA), S3(TX) A West Gulf Coastal Plain endemic, threatened by fire suppression, plantation forestry.

PDPOR080G0 *Talinum rugospermum* Prairie flame-flower G3G4 S2(TX), S?(LA) Rare within its range, restricted habitat.

Insects
IIPLE0B200 *Leuctra szczytkoi* Schoolhouse Springs Leuctran Stonefly G2 S2 (LA). The name pretty much says it all, this stonefly is a posterchild for restricted endemism. Its

elusive nature allowed it to slip past target review, but should be managed for at the TNC preserve and portfolio site.

IITRI03020 *Chimarra holzenthali* a Caddisfly C2 G1 S1(LA) Another rare and endemic found at Schoolhouse Springs in Louisiana.

IITRI22060 *Cheumatopsyche morsei* a Common Net-Spinning Caddisfly G1 S1 (LA) This globally rare caddisfly is endemic to Louisiana and Texas and is found at the Schoolhouse Springs portfolio site in Louisiana. The SCP for Schoolhouse Springs should take these three insects into consideration.

Appendix 10

List of Expert Teams

UWGCP Timeline

Budget

UWGCP List of Expert Teams

Teams were created in August, 2000 at the UWGCP kick-off meeting. Present at the meeting were Dave Gosse, Lance Peacock, Mark Gallyoun, Amalie Couvillion, Paul Wagner, Troy Ettel, Lane Patterson, and Rob Evans (via telephone).

Core Team:
Dave Gosse, Lance Peacock, Rob Evans, Dan Weber, Amalie Couvillion/Rick Turner, Mark Gallyoun.

Terrestrial Community Team:
Rob Evans, Latimore Smith, Tom Foti, Rick Turner, Doug Zollner, Bruce Hoagland, Lance Peacock, Dave Gosse.

Botany Team:
Bill Carr, Paul Kores/Bruce Hoagland, Theo Whitsel, Scott Simon, Latimore Smith, Dave Gosse

Zoology Team:
Troy Ettel, Mark Lomolino, Doug Zollner, Rich Martin, Paul Wagner, Steve Shively, Bill Holimon, Dave Gosse.

Aquatics Team:
Paul Wagner, Amalie Couvillion, Mark Gallyoun, Russell McDowell, John Harris, Paul Robison, Malcom Vidrine.

Data Management Team:
Russell McDowell, Mark Gallyoun, Steve Gilbert, Shannon Woolfe, Mark Swan, Bob Doran.

Implementation Team:
Dave Gosse, Lance Peacock, Dan Weber, Diane Schenke, Nancy DeLamar, Keith Ouchley, Stephen Forsythe, Robert Potts, Jim Sulentich, Chris Wilson, Jonathan Dearbone, Chris Hise.

DOD Legacy requirement	TNC step	Date due	Date complete	GIS Component	GIS needed by	who is involved?	Status
	Summarize/understand ecoregion basics, review Phase I data	July 1, 2000	July 1, 2000			DG	done
	contact TX, LA FOs	July 1, 2000	July 1, 2000			AR, TX, LA FO	done
	contact all TNC ecoregional team members	July 1, 2000	July 1, 2000			AR, TX, LA, OK FO	done
	Share data sources; assess stakeholders & partners	August 1, 2000	August 1, 2000			AR, TX, LA FO; expteams	done
	Core planning team establishment			establish working relationship w/ TX, LA GIS experts	TX done, LA next week.	begin w/ TX trip	done
	preliminary demographic/ socioeconomic factor assessment	July 15, 2000	July 15, 2000			DG/LaP	done: LDP to TX for additional data rev.
	Identify terrestrial ecological systems					zoo, bot, core, data team	done: systems identified, under review; final by 11/4
	Identify aquatic communities and ecological systems				by 11/10	zoo, bot, core, data team	
	ID viable imperiled, threatened, endangered species					zoo, bot, core, data team	done
	select representative subset of declining, endemic, disjunct, vulnerable, focal (keystone/wide-ranging) species					core team	done
	select species aggregations, groups, hot spots		(May 2001)			core team, state sci. reps	done during site selection
	Identify species targets	August 30, 2000	September 20, 2000	Subregions GIS map	08/11/00	core, zoo, bot, teams	done
				DoD/USACE lands map	822/00		
	list all conservation targets		December 1, 2000			core, data, zoo, bot teams; sci staff	done
	ID community ecogroups targets		December 1, 2000			core, SRO ecologists, sci staff	done: final review by 2/4/01
	develop centralized ecoregional geospatial database	continuous	continuous	get data/access to data from LA, AR, TX, OK	end of aug.	Data team	in TX w/ asst. from LA
	analyze data & record geospatial methodology	continuous	continuous			Data team	continued throughout plan
	develop centralized ecoregional Heritage techncial database	continuous	continuous	develop data management/sharing		Data team	continued throughout plan
	analyze data & record heritage technical methodology	continuous	continuous			Data team	continued throughout plan
	Assign attributes of scale/pattern and range/distribution for each community/system		November 1, 2000			zoo, bot, com, teams, SRO ecologist	done
	stratify the ecoregion into subunits (ecoregional sections/subsections)		September 1, 2000	map of community distributions	mid-sept.	Data team	done
	set quantitative conservation goals for each ecological community or system		December 1, 2000		11/15/00	core, bot, zoo, com teams	done

DOD Legacy requirement	TNC step	Date due	Date complete	GIS Component	GIS needed by	who is involved?	Status
	get sci. staff input/OK on goals		January 30, 2001	incorporate any changes to community distributions to community maps; keep for final rept.	by 11/15	core, bot, zoo, data teams	done
	Determine goals for ecological communities and systems	August 31, 2000	January 30, 2001	incorporate target and community data to GIS maps	by 11/15	core, bot, zoo, data teams	done
	categorize species by rangewide distribution for each target	August 31, 2000	February 10, 2001			core, bot, zoo, data teams	done
	review against gov/default/fed recovery plans and population viability analyses	August 31, 2000	February 10, 2001			core, bot, zoo, data teams, sci staff	done
	Set baseline conservation goals for species	August 31, 2000	March 1, 2001			core team	done
	develop baseline quantitative goals for each target species in terms of #s of population and distribution		March 1, 2001			core, data teams, state sci staff	done
	set goals for wide-ranging species		March 1, 2001			core, data teams, Partners in flight, other applicable outside orgs	done
	data acquisition status meeting	August 14, 2000	ongoing			core, data	ongoing
	develop ranking specifications for ecological systems; assign ranks for size, condition, and landscape	out by 9/1/00	out by 9/1/00	map ranks	mid-sept	core, com, data teams	done
	use element occurrence ranks for community targets		January 10, 2001	map of EOR s for final target species	end-sept	core team, sci staff	done
	use pass/fail for viability: combine methodologies as per Rob Evans' recommendations	used modified pass/fail	used modified pass/fail	map viable targets		core team, bot, zoo teams	done
	use GIS as needed	ongoing	ongoing	see above		data team	
	Assess viability of ecological communities and systems	September 22, 2000	March 20, 2001			core, zoo, bot, teams; implementation team as needed	done
	assess viability of aquatic systems	out by 9/1/00; back by 9/22/00	out by 9/1/00; back by 9/22/00	any specialized aquatic populations, mussel pools, etc.		core, zoo, bot, teams; implementation team as needed	done
	Assess viability of species populations	out by 9/1/00; back by 9/22/00	out by 9/1/00; back by 9/22/00			core, zoo, bot, teams; implementation team as needed	done
Quarterly status report		September 30, 2000	September 30, 2000				done
	identify additional sources of funding for ecoregional plan implementation		ongoing			core, FO development members	
	map targets			map ecoregional targets	mid-oct	core, implemenation teams	done
	assess ownership					core, implemenation teams	done

DOD Legacy requirement	TNC step	Date due	Date complete	GIS Component	GIS needed by	who is involved?	Status
	select sites, alternatives			adjust map	end-oct	core, implemenation teams	done
	design and evaluate portfolio			adjust map	end-oct	core, implementation teams, FO sci staff members as needed	done
	Assemble site portfolios *Round 1*	week of 10/23-27/00	week of 10/23-27/00	incorporate round 1 results	end-oct	core team	done
	Assemble site portfolios *Round 2*	week of 12/4-8/00	week of 12/4-8/00	incorporate round 2 results	end-Nov.	core team	
Meet w/ DoD contacts		December 31, 2000	December 31, 2000	provide map of DoD/USACE holdings in ecoregion	end-Nov.	DG, LP	done
Complete GIS analysis	gathering data; for this we'll need location, topo, geology (?), target species, communities, occurances, gaps, PIF data, any others		April 1, 2001	GIS for DoD	early march	DG, LaP	done
		January 1, 2001					
	select action sites	February 15, 2001	February 15, 2001	map action sites	early Feb	core team	done May 2001
	determine site responsibility	March 1 2001	March 1 2001			core, implementation teams	done May 2001
	determine site acquisition/ management strategy	March 31, 2001	March 31, 2001			core, implementation teams	done May 2001
	site threat assessment		February 1, 2001			core, zoo, bot, implementation teams	done May 2001
		March 31, 2001					
	complete draft ecoregional plan for TNC review	April 1, 2001	April 1, 2001	**adjust TNC GIS products as needed**	**mid march**	core team	
	evaluate/incorporate peer review comments	May 20, 2001	May 20, 2001			core team	
	Final Draft Ecoregional Plan	July 1, 2001	July 1, 2001	**incorporate changes to GIS as needed**	**end of may**	core team	
	Plan at Ecoregional Roundtable	September 1, 2001	September 1, 2001			core team	
Literature review & bibliography		September 30, 2001	September 30, 2001				started literature review
Quarterly status report		September 30, 2001	September 30, 2001				
	begin plan implementation/ portfolio building/ecoregional scale site management					core, implementation teams	
Quarterly status report		January 1, 2002	January 1, 2002				
Identify critical conservation areas		March 1, 2002	March 1, 2002	additional maps as needed	mid-march	DG, LP, DZ,	
Major stresses analysis		March 1, 2002	March 1, 2002			DG, LP, DZ	
Gap analysis/tech suppt		March 1, 2002	March 1, 2002	GIS input to gap analysis	mid-march	DG, LP, DZ, BD	
Multi-site Management Plan Delivery		**March 1, 2002**	**March 1, 2002**			DG, LP	
Final Management Plan		**March 31, 2002**	**March 31, 2002**	adjustments to existing map products as needed	mid-march	DG, LP	
Quarterly status report--final for contract		April 1, 2002	April 1, 2002			DG	

UWGCP Budget FY2001

breakdown by team member time — percent of time broken down by process/activity

	% time	hours est.	cost	A	B	C	D	E	F	G	H	check
Proj. Manager	100	2100	$47,000	8%	8%	8%	12%	7%	9%	8%	40%	100%
ARFO GIS	30	594	$10,000				25%		25%	25%	25%	100%
ARFO Sci.	30	714	$15,000	5%	1%	3%	11%	10%	10%	10%	50%	100%
SRO IS manager	20	400	$6,640	30%	10%	30%	30%					100%
SRO ecology	20	400	$8,000	40%		30%	30%					100%
TXFO Data manag	20	400	$9,500	20%		20%	25%	15%	10%		10%	100%
TXFO GIS	15	300	$6,200			5%	25%		15%	15%	40%	100%
TXFO sci.	15	300	$25,000	10%	5%	15%	15%	10%	15%	15%	15%	100%
LAFO sci	7	140	$3,168	5%	5%	15%	25%	10%	15%	15%	10%	100%
LAFO GIS	40	300	$10,000			25%	50%		15%	5%	5%	100%
LAFO Minden	10	100	$2,046			5%	15%		10%	40%	30%	100%
OKFO sci.	10	200	$4,092	5%	5%	15%	25%	10%	15%	15%	10%	100%
all travel			$5,000	25%			25%				50%	100%
total			$151,646									

breakdown by process/activity

identify target species and communities (A)						Total time:		check	
staff time*	$14,465	staff time breakdown:	SRO:	280		SRO	800	800	
travel	$1,500		ARFO	203.7		ARFO	3408	3408	
conference calls/updates	$664		TXFO	110		TXFO	1000	1015	
expert conf. calls.	$1,000		LAFO	7		LAFO	540	540	
subtotal		$17,629	OKFO	10	610.7	OKFO	200	200	
set conservation goals (B)									
staff time	$6,187	staff time breakdown:	SRO:	40					
travel	$0		ARFO	175.14					
conference calls/updates	$250		TXFO	30					
expert conf. calls/meetings	$500		LAFO	7					
subtotal		$6,937	OKFO	10	262.14				
viability assessments (C)									
staff time	$18,253	staff time breakdown:	SRO:	240					
travel	$500		ARFO	189.42					
conference calls/updates	$250		TXFO	140					
expert conf. calls.	$500		LAFO	101					
subtotal		$19,503	OKFO	30	700.42				
portfolio assembly (D)									
staff time	$28,978.90	staff time breakdown:	SRO:	240					

conference calls/meetings round 1	$1,000		ARFO	479.04	
conference calls/meetings round 2	$1,000		TXFO	220	
	subtotal	$30,979	LAFO	200	
			OKFO	50	1189.04
threat assessment (E)		staff time breakdown:	SRO:	0	
staff time	$9,441.00		ARFO	218.4	
conference calls	$400		TXFO	90	
	subtotal	$9,841.00	LAFO	14	
			OKFO	20	342.4
action site assessment (F)		staff time breakdown:	SRO:	0	
staff time	$16,653.60		ARFO	408.9	
conference calls	$500		TXFO	130	
	subtotal	$17,153.60	LAFO	76	
			OKFO	30	644.9
site acquisition/management strategy (G)		staff time breakdown:	SRO:	0	
staff time	$14,847.40		ARFO	387.9	
conference calls	$500		TXFO	90	
	subtotal	$15,347.40	LAFO	76	
			OKFO	30	583.9
write draft, incorporate comments, final plan (H)		staff time breakdown:	SRO:	0	
staff time	$37,319.80		ARFO	1345.5	
conference calls	$500		TXFO	205	
	subtotal	$37,820	LAFO	59	
			OKFO	20	1629.5
Project Total:		$155,210			5963

* staff time includes email generation and response and conference calls.
Conference call cost includes only administrative cost of setting up call.

Appendix 11

List of Implementation Reference Material

This material is included in the UWGCP CD and can be used during the implementation phase as well as reference material for the next plan iteration.

- Botany, Community, Zoology target spreadsheets (Microsoft Excel files)
- Community Descriptions (Microsoft Word file)
- Access database containing all supporting tabular data for plan and all data used in generating rollout reports (Microsoft Access 97 Database)
- Arcview Shapefiles, including ecoregion definition, digital elevation model, satellite imagery, element occurrences, landcover, hydrology, managed areas, and portofolio conservation areas (ESRI Arcview 3.2 shapefiles)
- TNC internal Guidance for Ecoregional and Site Conservation Planning
- USFWS species recovery plans for federally listed species (Adobe Acrobat files)

Appendix 12: Explanation of Elements Not Targeted in the UWGCP

Element Code	Scientific Name	Common name	Elcode or Fed Rank	Rank	Rationale	Comments	Data Gaps
CEGR036510	Southeastern Coastal Plain Loblolly Pine -- Hardwood Small Stream Forests	Southeastern Coastal Plain Loblolly Pine -- Hardwood Small Stream Forests	365-10		contained in 365 series: added 7990 from 340-50	Endemic LP;	
CEGR036520	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	365-20		contained in 365 series.	Endemic LP;	
CEGR030540	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	305-40			Endemic LP;	
CEGL007318	Celtis laevigata - Gleditsia triacanthos - Sapindus saponaria var. drummondii / Lithospermum tuberosum - Carex willdenowii Forest			G1	not in ecoregion; in copenhagen in E central.		possible but not described
CEGL007907	(Pinus palustris) - Quercus stellata - Quercus marilandica - Carya texana / Tragia urens Woodland		320-10	G2	consider using grp; RT = no need to go to group	RT = oak dominated dry ridgetops not to far outside of UW but there, ie sandhills in sabine NF	possible but not described
CEGL004021	Schizachyrium scoparium - Panicum flexile - Carex cherokeensis Herbaceous Vegetation		375-20	G1	LS =not in ecoregion	keefer praire; possible but not seen yet	possible but not described
CEGL007194	Quercus shumardii - Fraxinus americana - Carya myristiciformis / Viburnum dentatum / Carex cherokeensis Forest		375-30	G1Q	LS = not in ecoregion	cooke mtn. Calcareous forest; not in ecoregion; possible but not described.	possible but not described
CEGL003879	Crataegus spathulata - Cornus drummondii - Berchemia scandens Shrubland		375-30	G2Q	LS = not in ecoregion	keefer praire; possible but not seen yet	possible but not described
CEGL007900	Quercus stellata - Quercus marilandica - Pinus taeda Jackson Acidic Clay Forest		390-10	G2?Q	LS = not in ecoregion	defined from copenhagen, not seen in 40 though possible	possible but not described
CEGR82010	Eastern Wide-ranging Shrub Swamps	Eastern Wide-ranging Shrub Swamps	820-10	NA	3836 is a better representation.		
CEGL007955	Pinus taeda - Quercus (nigra, spp.) / Ostrya virginiana - Sabal minor Calcareous Sideslope Forest	Loblolly Pine - (Water Oak, Oak species) / Eastern Hop-hornbeam - Dwarf Palmetto Calcareous West Gulf Coastal Plain Transition Sideslope Forest	310-20	G2G3	Add to group.	run-of-the-mill stuff, nothing special; RT says take off.	
CEGL007874	Viburnum nudum var. nudum - Myrica cerifera - Smilax laurifolia Shrubland	Southern Wild Raisin - Wax-myrtle - Blaspheme-vine Shrubland	360-10	G1?	sounds like a depauperate baygall.	2 existing bayalls: 1 w/ ilex coryacea and 1 without.all forested seeps came up without. Don't see a reason to keep it.	aberta macrifolium, magnolia grandiflora, not sure whether this is really a separate group

Element Code	Scientific Name	Common name	Elcode or Fed Rank	Rank	Rationale	Comments	Data Gaps
CEGL007952	Quercus pagoda - Liquidambar styraciflua / Ulmus crassifolia - Celtis laevigata - Carex cherokeensis Forest	Cherrybark Oak - Sweetgum / Cedar Elm - Sugarberry - Cherokee Sedge West Gulf Coastal Plain Transition Bottomland Forest	385-20	G2G3?	Seems to be derived from RT's data, described from 1 plot.	RT = similar to 7950; small stream bottoms, described elsewhere.	
CEGR030540	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	Southeastern Coastal Plain Xeric Shortleaf Pine / Hardwood Forests and Woodlands	305-40				
CEGR034530	Southeastern Coastal Plain Emergent Ponds and Marshes	Southeastern Coastal Plain Emergent Ponds and Marshes	345-30		covered by 385-10		
CEGR036510	Southeastern Coastal Plain Loblolly Pine – Hardwood Small Stream Forests	Southeastern Coastal Plain Loblolly Pine – Hardwood Small Stream Forests	365-10		covered by 365 series		
CEGR036520	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	Southeastern Coastal Plain Mixed Hardwood Small Stream Forests	365-20		covered by 365 series		
AMAJH01020	FELIS CONCOLOR	Mountain Lion	(PS)	G5; TX, AR, LA = S1; OK = S2	need to reintroduce on larger landscape when available.	increased sitings and habitat restoration call for management consideration next iteration. Will facilitate Florida panther reintroduction	
AMAJH01021	FELIS CONCOLOR CORYI	Florida Panther	LE	G5T1	western extent original range; need to reintroduce on larger landscape when available.	consider extirpated for this iteration.	
IIODO08170	GOMPHUS OZARKENSIS	Ozark clubtail	S2	G4	more likely ozark spp		
AMALE01010	BOS BISON	American Bison	N4 , SX	G4	on target list, but realistic reintroduction is at least 1 iteration away	range and needs require planning and habitat restoration now for eventual reintroduction	