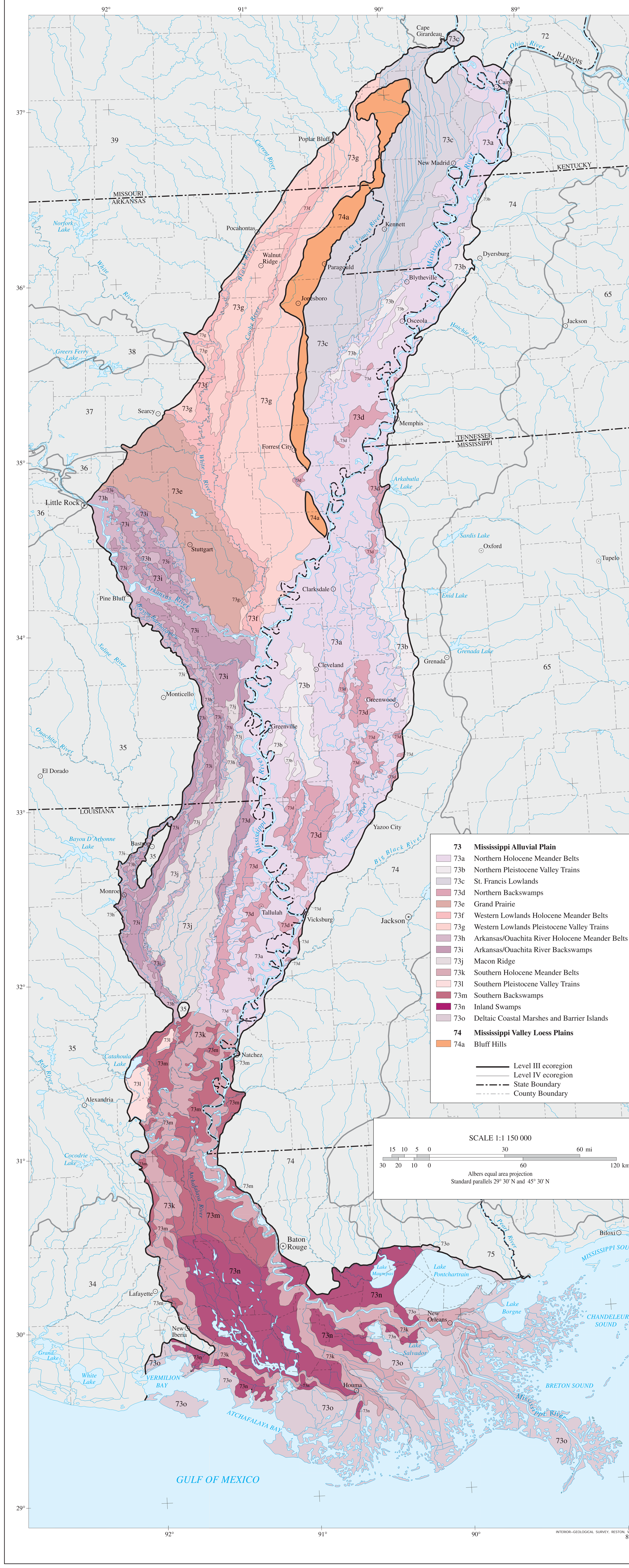

Ecoregions of the Mississippi Alluvial Plain

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources; they are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance (Bryce and others, 1999). These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and non-government organizations that are responsible for different types of resources within the same geographical areas (Omernik and others, 2000).

The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of the spatial patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity (Wiken, 1986; Omernik, 1987, 1995). These phenomena include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. A Roman numeral hierarchical scheme has been adopted for different levels of ecological regions. Level I is the coarsest level, dividing North America into 15 ecological regions. Level II divides the continent into 52 regions (Commission for Environmental Cooperation Working Group, 1997). At level III, the continental United States contains 104 ecoregions and the conterminous United States has 84 ecoregions (United States Environmental Protection Agency [USEPA], 2003). Level IV is a further subdivision of level III ecoregions. Explanations of the methods used to define the USEPA's ecoregions are given in Omernik (1995), Omernik and others (2000), Griffith and others (1994), and Gallant and others (1989).

This level III and IV ecoregion map was compiled at a scale of 1:250,000 and depicts revisions and subdivisions of earlier level III ecoregions that were originally compiled at a smaller scale (USEPA 2003, Omernik, 1987). This poster is part of a collaborative effort primarily between USEPA Region VII, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Mississippi Department of Environmental Quality, Arkansas Department of Environmental Quality, Arkansas Multi-Agency Wetland Planning Team (MAWPT), U.S. Army Corps of Engineers (USACE), U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS), U.S. Department of Interior - Fish and Wildlife Service (USFWS), and U.S. Department of Interior - U.S. Geological Survey (USGS) - Earth Resources Observation Systems (EROS) Data Center.

This project is associated with an interagency effort to develop a common framework of ecological regions. Reaching that objective requires recognition of the differences in the conceptual approaches and mapping methodologies that have been used to develop the most common ecoregion-type frameworks, including those developed by the U.S. Department of Agriculture - Forest Service (USFS) (Bailey and others, 1994), the USEPA (Omernik, 1987, 1995), and the NRCS (United States Department of Agriculture - Soil Conservation Service, 1981). As each of these frameworks is further refined, their differences are becoming less discernible. Regional collaborative projects such as this one in the Mississippi Alluvial Plain, where agreement can be reached among multiple resource management agencies, are a step toward attaining consensus and consistency in ecoregion frameworks for the entire nation.

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73. Mississippi Alluvial Plain

The Mississippi Alluvial Plain (73) ecoregion contains a complex of floodways, drainage ditches, levees, lakes and streams, and some of the most fertile farmland in the country. Much of the once vast bottomland forest has been removed for agriculture. *Photo: Crawford, Johnson, Robinson, and Woods, Arkansas Delta Byways; www.byways.org*

This riverine ecoregion extends from southern Illinois, at the confluence of the Ohio River with the Mississippi River, south to the Gulf of Mexico. The Mississippi River watershed drains all or parts of thirty-one states, two Canadian provinces, and over 1,000,000 square miles before it finally reaches the Gulf. The Mississippi Alluvial Plain is mostly a flat, broad alluvial plain with river terraces and levees providing the main elements of relief. In addition, this ecoregion provides important habitat for fish and wildlife and includes the largest continuous system of wetlands in North America. Soils tend to be poorly drained, except for isolated areas of sandy soils. Winters are mild and summers are hot, with temperatures and annual average precipitation increasing from the north to south. Bottomland deciduous forest vegetation covered most of the region before as much as 80% was cleared and drained for cultivation. Presently, most of the northern and central sections of the region are in cropland and receive heavy treatments of insecticides and herbicides. Soybeans, cotton, and rice are the major crops; however, commercial catfish farms are growing in acreage and economic activity in aquaculture has been a boon to local economies. A linear area known as the "batture lands", the area between the levees on either side of the river, extends virtually the entire length of the alluvial plain along the course of the Mississippi River and its major tributaries. It is generally too narrow to map at the level IV scale; however, it is an important feature and is the primary location of species such as interior least tern and pallid sturgeon, as well as riverfront plant communities. The levees have separated much of the river and its immediate habitat from the rest of the hydrologic system. In addition, large river channel dredging projects remove silt and sediment accumulations from the river channel to facilitate navigation along the Mississippi River. These factors and the large concrete river revetments and channelization have all contributed to the decrease of sediment mobilization within the system, thus altering the delta formation at the mouth of the river and contributing to the loss of habitat for many coastal and estuarine species. This region is also a major bird migration corridor used in fall and spring migrations. Degradation and destruction of forest and wetland habitats and the construction of navigation and flood control systems have had detrimental effects on many of these bird populations.

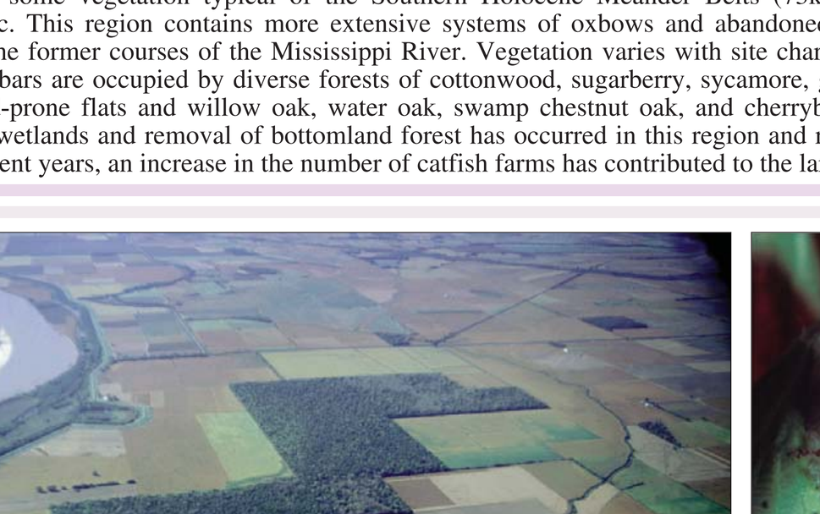
Fingers of swamp forest on slightly elevated land fan out onto a freshwater marsh.These swamp forests are typical of the southern reaches of the Mississippi Alluvial Plain (73). *Photo: James Gosselink*

River meanders, oxbows, and ridge and swale topography are typical of the Northern Holocene Meander Belts (73a) ecoregion. *Photo: USACE*

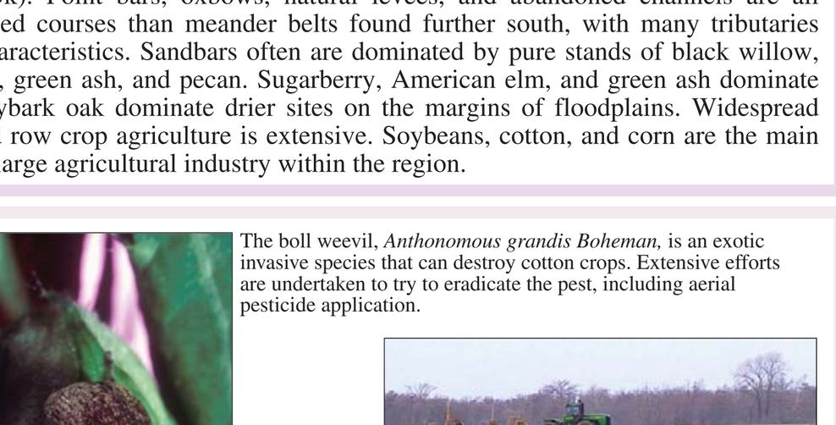
Commercial catfish production has become a thriving industry. A majority of the catfish produced for national distribution is from this region.

The endangered interior least tern, *Sterna antillarum*, is a now a rare summer resident. Channelization, irrigation, and the construction of dams, levees, and reservoirs along the Mississippi River have eliminated most of the habitat suitable for tern nesting. *Photo: USACE*

73a The **Northern Holocene Meander Belts** ecoregion contains the meander belt of the present course of the Mississippi River as well as abandoned channels and courses created during the last 12,000 years. Ecoregion 73a spans the northern two-thirds of the alluvial plain, where winter temperatures restrict the presence of some vegetation typical of the Southern Holocene Meander Belts (73k). Point bars, oxbows, natural levees, and abandoned channels are all characteristic. This region contains more extensive systems of oxbows and abandoned courses than meander belts found further south, with many tributaries occupying the former courses of the Mississippi River. Vegetation varies with site characteristics. Sandbars often are dominated by pure stands of black willow, while point bars are occupied by diverse forests of cottonwood, sugarberry, sycamore, green ash, and pecan. Sugarberry, American elm, and green ash dominate broad, flood-prone flats and willow oak, water oak, swamp chestnut oak, and cherrybark oak dominate drier sites on the margins of floodplains. Widespread draining of wetlands and removal of bottomland forest has occurred in this region and row crop agriculture is extensive. Soybeans, cotton, and corn are the main crops. In recent years, an increase in the number of catfish farms has contributed to the large agricultural industry within the region.



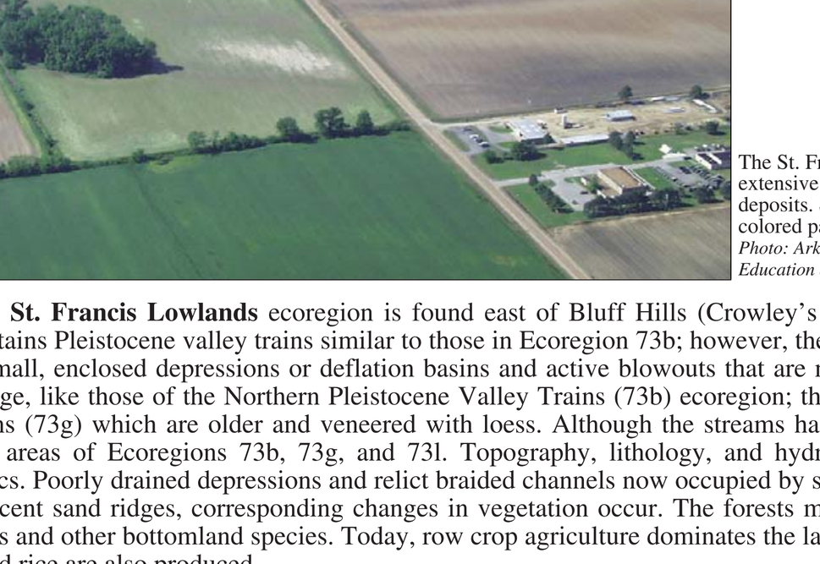
Cropland agriculture, with soybeans and cotton as main crops, is extensive within the Northern Pleistocene Valley Trains (73b) ecoregion. Little bottomland forest remains in this ecoregion.



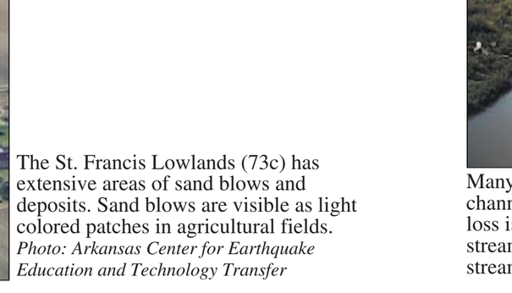
The boll weevil, *Anthonomous grandis Boheman*, is an exotic invasive species that can destroy cotton crops. Extensive efforts are undertaken to try to eradicate the pest, including aerial pesticide application.

Most forests were converted to agriculture through clearing operations that may or may not have included harvest for lumber. Contemporary agricultural land surfaces have been modified by precision land leveling to allow for and to increase the efficiency of flood irrigation. *Photo: NRCS*

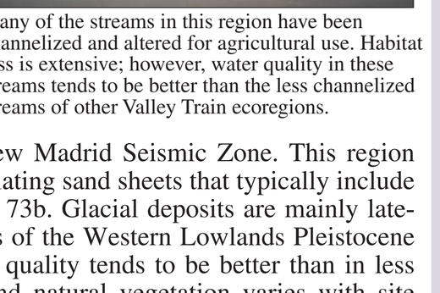
73b The **Northern Pleistocene Valley Trains** ecoregion is composed of scattered small remnants of late-Wisconsin glacial outwash deposits and terraces from the Mississippi and Ohio rivers. Surface features reflect braided stream depositional regimes. Ecoregion 73b is generally higher than the neighboring Northern Holocene Meander Belts (73a) and Northern Backswamps (73d). Ecoregions 73a and 73d are limited and fragmented because the Pleistocene valley trains have been largely eroded away by lateral channel migration or buried by deep sediments during Holocene times. Cropland is extensive; soybeans are the main crop along with areas of cotton. Evidence from the limited remaining forests indicates that original vegetation was primarily species typical of higher bottomlands such as Nuttall oak, willow oak, swamp chestnut oak, sugarberry and green ash.



The St. Francis Lowlands (73c) has extensive areas of sand blows and deposits. Sand blows are visible as light colored patches in agricultural fields. *Photo: Arkansas Center for Earthquake Education and Technology Transfer*



The preferred habitat of the rare Illinois chorus frog, *Pseudacris illinoensis,* includes sandy grasslands, wetlands and the quiet shallow margins of streams with sandy bottoms. Loss of this habitat has forced the frogs to use alternate areas which include the croplands, pastures, and ditches of the St. Francis Lowlands (73c). *Photo: Missouri Department of Conservation*

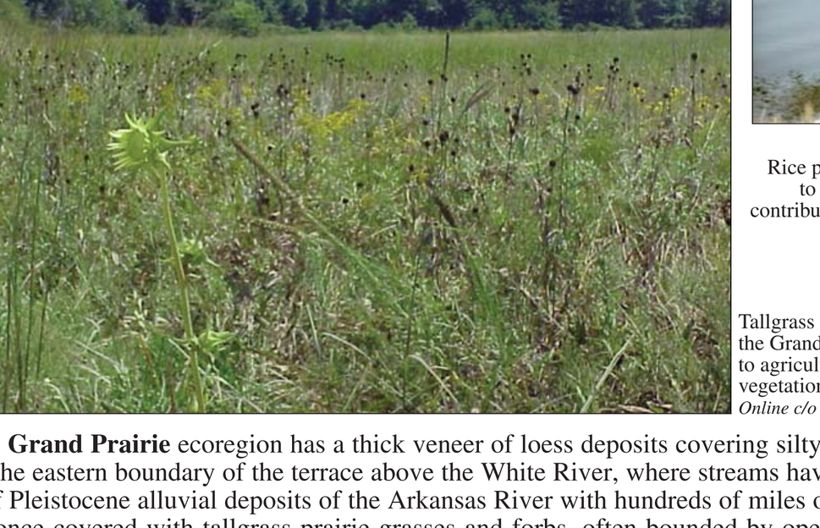


Many of the streams in this region have been channelized and altered for agricultural use. Habitat loss is extensive; however, water quality in these streams tends to be better than in the less channelized streams of other Valley Train ecoregions.

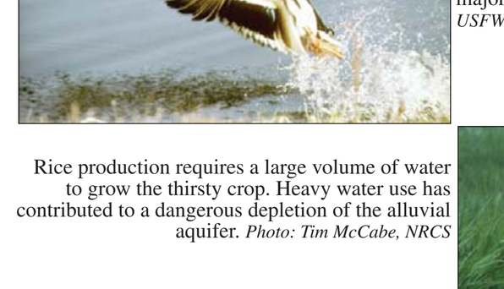
73c The **St. Francis Lowlands** ecoregion is found east of Bluff Hills (Crowley's Ridge) (74a) and is part of the New Madrid Seismic Zone. This region contains Pleistocene valley trains similar to those in Ecoregion 73b; however, there is also an extensive area of undulating sand sheets that typically include numerous small, enclosed depressions or deflation basins and active blowouts that are not found in neighboring Ecoregion 73b. Glacial deposits are mainly late-Wisconsin age, like those of the Northern Pleistocene Valley Trains (73b) ecoregion; they contrast with the glacial deposits of the Western Lowlands Pleistocene Valley Trains (73g) which are older and veneered with loess. Although the streams have been heavily channelized, water quality tends to be better than in less channelized areas of Ecoregions 73b, 73g, and 73l. Topography, lithology, and hydrology vary over short distances and natural vegetation varies with site characteristics. Poorly drained depressions and relict braided channels now occupied by streams often contain bald cypress-water tupelo swamp. As the land surface rises to adjacent sand ridges, corresponding changes in vegetation occur. The forests may include species typical of sandy areas, such as river birch mixed with cypress, oaks and other bottomland species. Today, row crop agriculture dominates the landscape; soybeans, corn and cotton are the most common crops and wheat, sorghum, and rice are also produced.

Bald cypress and tupelo bottomland forests were once common throughout the Northern Backswamps (73d) ecoregion. Forest habitat has been reduced significantly, although areas of bottomland forest still exist, especially in protected regions such as the Delta National Forest in Mississippi. *Photo: Lynn Betts, NRCS*

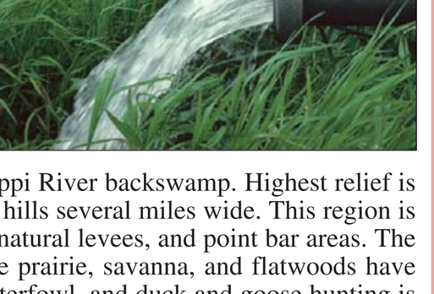
73d The **Northern Backswamps** ecoregion comprises scattered areas of fine-grained substrates of clay in the northern two thirds of the Mississippi Alluvial Plain (73), which are incompletely drained by small streams. Some large areas do not fully drain through channel systems, but remain ponded well into the growing season. Organic matter is abundant, especially in the Yazoo Basin. The soils are mostly gray to black, clayey, and have high shrink-swell potential. The region is also very flat, and water moves slowly into stream channels or collects in low-lying areas. These areas, which can hold water for months at a time after big rain events, make up lakes, swamps and wetland forests. The backswamp areas are very important for processing excess nutrients found in the water and detaining water after heavy rains. Agriculture is not prevalent in this region, and many of the larger blocks of backswamp still support bottomland forests. Forests are generally dominated by bald cypress-water tupelo forest in wettest areas, overcup oak-water hickory forest in slightly higher and drier areas and Nuttall oak forest in the highest and driest areas.



Tallgrass prairies were once extensive throughout the Grand Prairie (73e) ecoregion. Conversion to agriculture has removed most of the natural vegetation. *Photo: Jim Pogue, River Watch Online c/o USACE*

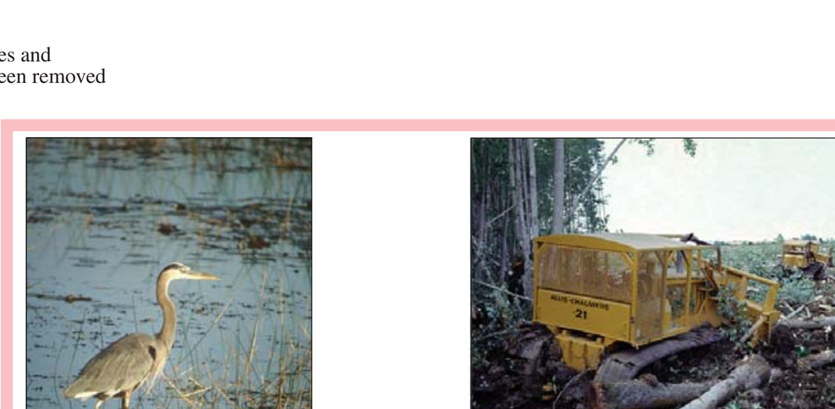


The Grand Prairie (73e) is the winter habitat to one of the largest concentrations of mallard ducks, *Anas platyrhynchos,* in North America. The ducks utilize the wetlands and vast rice fields found throughout the area. The rice fields provide habitat and forage for many types of waterfowl, and duck and goose hunting is a major activity. *Photo: Erwin and Peggy Bauer, USFWS*



Rice production requires a large volume of water to grow the thirsty crop. Heavy water use has contributed to a dangerous depletion of the alluvial aquifer. *Photo: Tim McCabe, NRCS*

73e The **Grand Prairie** ecoregion has a thick veneer of loess deposits covering silty and clayey deposits of old Mississippi River backswamp. Highest relief is on the eastern boundary of the terrace above the White River, where streams have dissected the terrace into a belt of hills several miles wide. This region is a remnant of Pleistocene alluvial deposits of the Arkansas River with hundreds of miles of abandoned meandering channels, natural levees, and point bar areas. The region was once covered with tallgrass prairie grasses and forbs, often bounded by open woodland or savanna. Most of the prairie, savanna, and flatwoods have been replaced with cropland. Rice is now the dominant crop. The rice fields provide habitat and forage for many types of waterfowl, and duck and goose hunting is important to the regional economy. Some prairie species such as the greater prairie chicken have been extirpated, while limited populations of other species exist in the few remnant prairies and other natural habitats of the ecoregion.

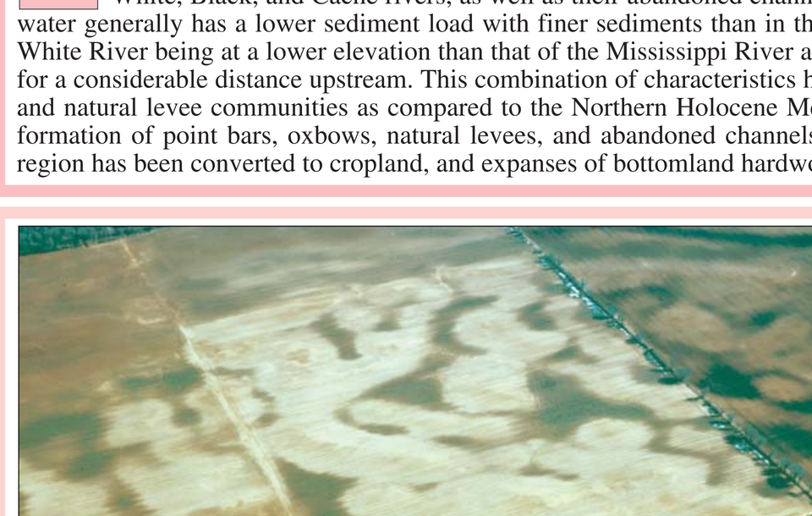


Great blue herons, *Ardea herodias*, make their home in the wetlands of this region. *Photo: Herb Stein, USFWS*

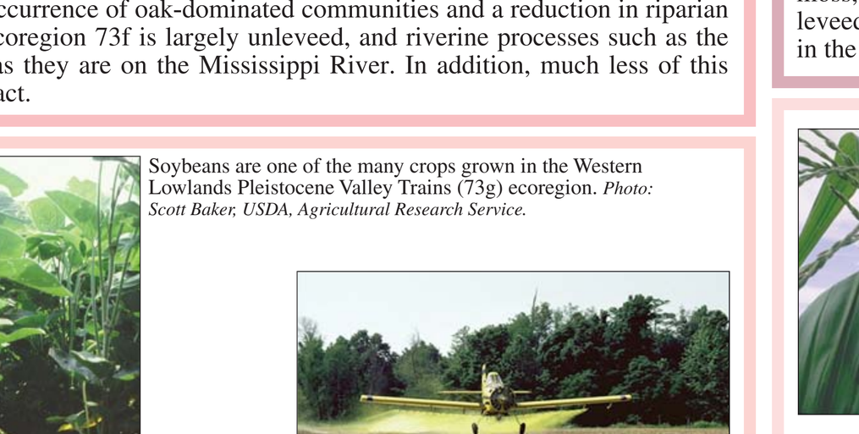
Logging and tree removal for agriculture have contributed to much of the forest habitat reduction in this and many of the other ecoregions of the Mississippi Alluvial Plain (73).

A White River oxbow lake and river section is typical of the meander topography in this region. *Photo: Arkansas Game and Fish Foundation*

73f The **Western Lowlands Holocene Meander Belts** ecoregion is a flat to nearly flat floodplain containing the meander belts smaller in the present courses of the White, Black, and Cache rivers, as well as their abandoned channels and courses. The scale of meanders and oxbows is much smaller in this region and the water generally has a lower sediment load with finer sediments than in the Northern Holocene Meander Belts (73a) to the east. This has resulted in the bed of the White River being at a lower elevation than that of the Mississippi River and consequently backwater flooding of the White River from the Mississippi River occurs for a considerable distance upstream. This combination of characteristics has created a greater occurrence of oak-dominated communities and a reduction in riparian and natural levee communities as compared to the Northern Holocene Meander Belts (73a). Ecoregion 73f is largely unleveed, and riverine processes such as the formation of point bars, oxbows, natural levees, and abandoned channels are not as arrested as they are on the Mississippi River. In addition, much less of this region has been converted to cropland, and expanses of bottomland hardwood forests remain intact.



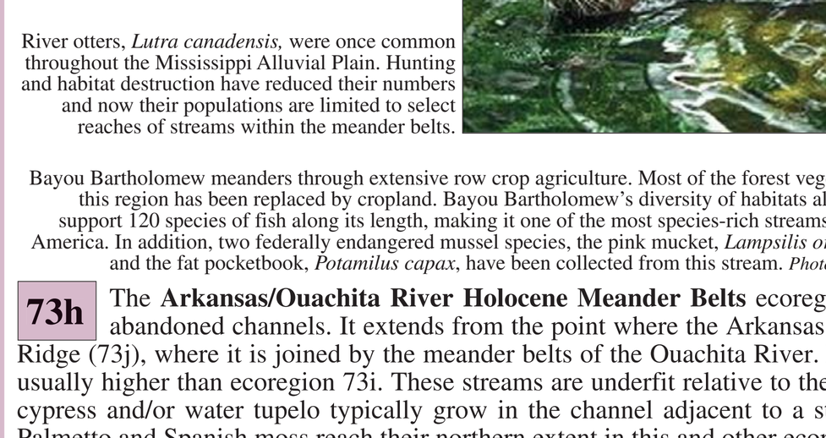
Dune fields on a terrace in the Western Lowlands Pleistocene Valley Trains (73g). *Photo: MAWPT*



Soybeans are one of the many crops grown in the Western Lowlands Pleistocene Valley Trains (73g) ecoregion. *Photo: Scott Baker, USDA, Agricultural Research Service.*

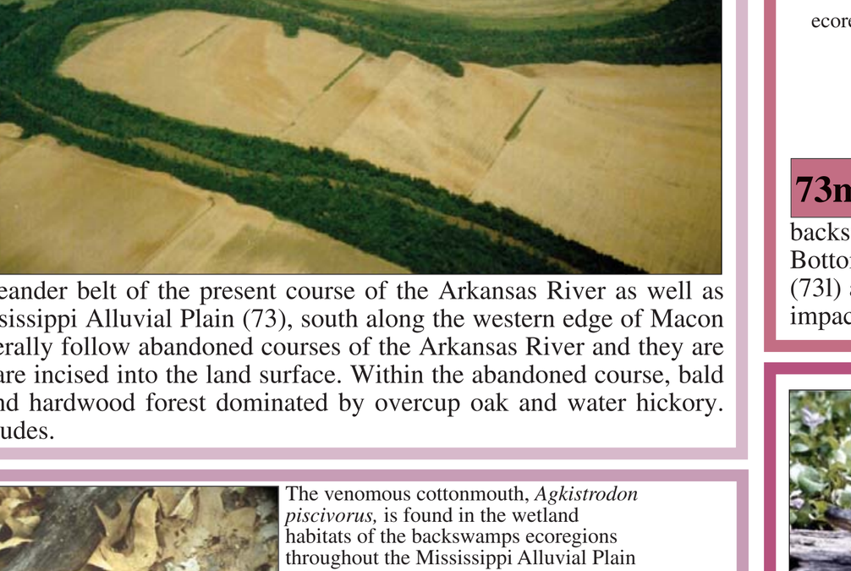
Aerial pesticide applications are part of the intensive agricultural practices of this ecoregion. *Photo: Tim McCabe, NRCS*

73g The terraces of the **Western Lowlands Pleistocene Valley Trains** ecoregion comprise a large expanse of early-Wisconsin glacial outwash deposits (older than 73b, 73c and 73l) reflecting braided stream depositional regimes. Unlike similar surface features of the St. Francis Lowlands (73c), those in 73g tend to be muted and covered by a veneer of loess. In addition, they contain larger areas of sand and sand dunes than found in the St. Francis Lowlands (73c). These unusual surface features support a wetland type that occurs in interdunal depressions called "sandponds" that either are in contact with the water table or have a perched aquifer; these are not found in the neighboring Western Lowlands Holocene Meander Belts (73f) ecoregion. Forests of these "sandponds" are generally dominated by overcup oak, water hickory, willow oak, pin oak and other species. The federally listed endangered pondberry, *Lindera melissifolia*, also occurs in these sand depressions. Much of this ecoregion is not flooded or subject to only infrequent flooding, so plant communities differ from the typical pattern as described in (73a). Post oak covered more area in these flats than is typical elsewhere in the Mississippi Alluvial Plain (73). The only area of native loblolly pine in the Mississippi Alluvial Plain (73) occurred within this ecoregion. Cropland is extensive; soybeans are the main crop along with areas of cotton. Commercial crawfish, baitfish, and catfish farms are located throughout the region. The region provides habitat for wintering waterfowl and duck hunting is widespread.



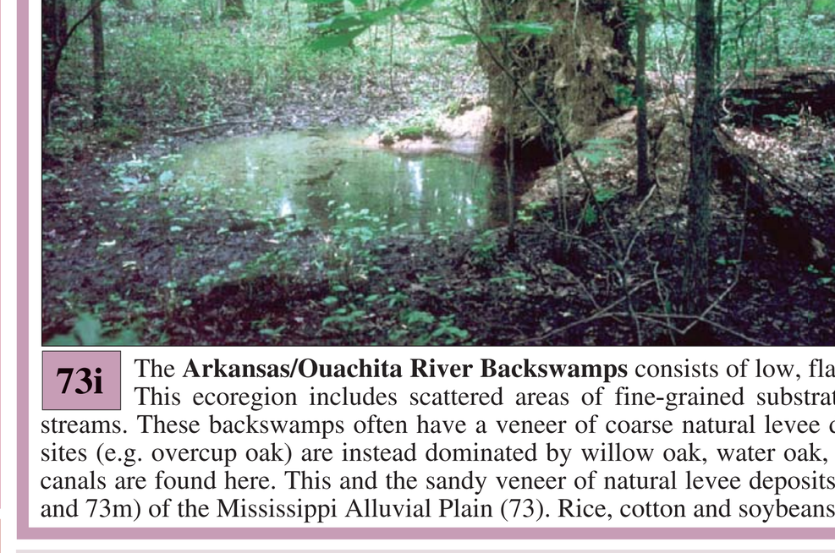
Man-made levees are found throughout this and many of the regions in the Mississippi Alluvial Plain (73). They are used for flood control and roads. This levee used for flood control is undergoing expansion. *Photo: Ann Marino, USACE*

River otters, *Lutra canadensis,* were once common throughout the Mississippi Alluvial Plain. Hunting and habitat destruction have reduced their numbers and now their populations are limited to select reaches of streams within the meander belts.

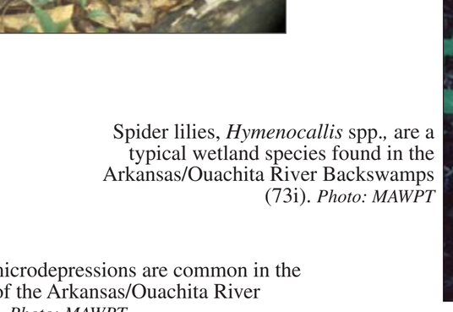


Bayou Bartholomew meanders through extensive row crop agriculture. Most of the forest vegetation of this region has been replaced by cropland. Bayou Bartholomew's diversity of habitats allows it to support 120 species of fish along its length, making it one of the most species-rich streams in North America. In addition, two federally endangered mussel species, the pink mucket, *Lampsilis orbiculata,* and the fat pocketbook, *Potamilus capax,* have been collected from this stream. *Photo: MAWPT*

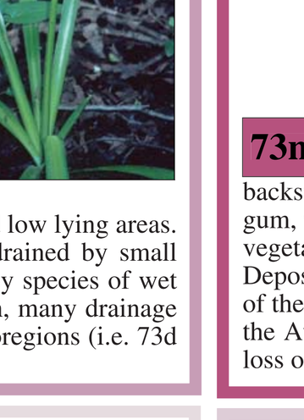
73h The **Arkansas/Ouachita River Holocene Meander Belts** ecoregion comprises the meander belt of the present course of the Arkansas River as well as abandoned channels. It extends from the point where the Arkansas River enters the Mississippi Alluvial Plain (73), south along the western edge of Macon Ridge (73j), where it is joined by the meander belts of the Ouachita River. Modern streams generally follow abandoned courses of the Arkansas River and they are usually higher than ecoregion 73i. These streams are underfit relative to the older channels and are incised into the land surface. Within the abandoned course, bald cypress and/or water tupelo typically grow in the channel adjacent to a strip of wet bottomland hardwood forest dominated by overcup oak and water hickory. Palmetto and Spanish moss reach their northern extent in this and other ecoregions at similar latitudes.



Vernal pools and microdepressions are common in the remaining forests of the Arkansas/Ouachita River Backswamps (73i). *Photo: MAWPT*

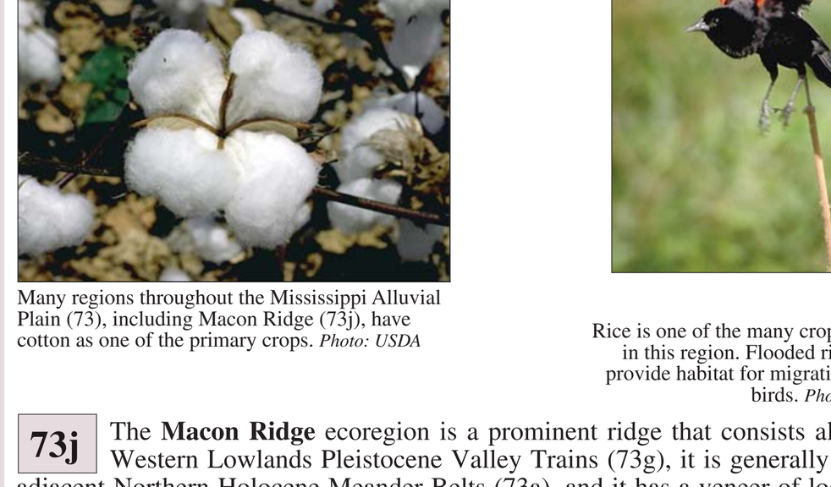


The venomous cottonmouth, *Agkistrodon piscivorus,* is found in the wetland habitats of the backswamps ecoregions throughout the Mississippi Alluvial Plain (73). *Photo: Matthew Perry, USFWS*



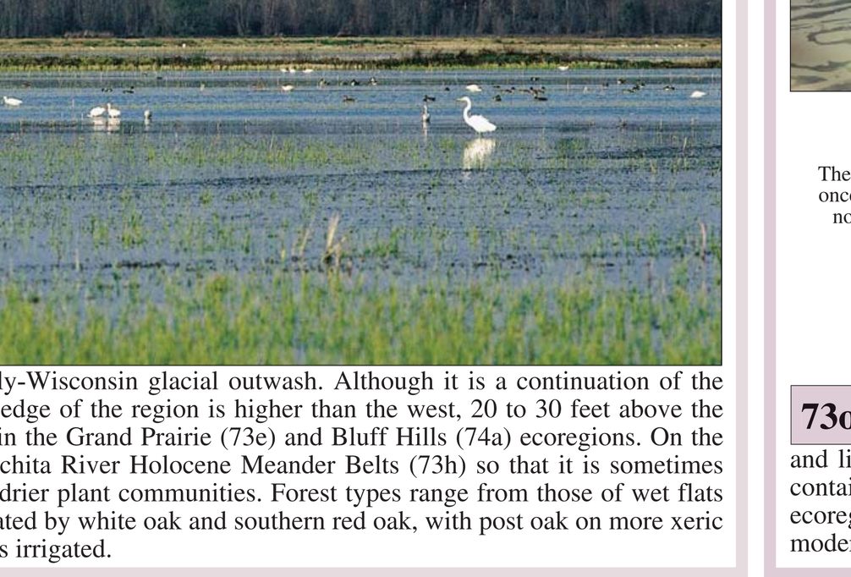
Spider lilies, *Hymenocallis* spp., are a typical wetland species found in the Arkansas/Ouachita River Backswamps (73i). *Photo: MAWPT*

73i The **Arkansas/Ouachita River Backswamps** consists of low, flat, poorly-drained areas where water often collects into lakes, swamps, and low lying areas. This ecoregion includes scattered areas of fine-grained substrates of clay deposited by the Arkansas River, which are incompletely drained by small streams. These backswamps often have a veneer of coarse natural levee deposits. Natural vegetation that otherwise would have been dominated by species of wet sites (e.g. overcup oak) are instead dominated by willow oak, water oak, and delta post oak. Because ecoregion 73i flanks the slightly higher 73h, many drainage canals are found here. This and the sandy veneer of natural levee deposits allow ecoregion 73i to be farmed more easily than other backswamp ecoregions (i.e. 73d and 73m) of the Mississippi Alluvial Plain (73). Rice, cotton and soybeans are all important crops in this region.



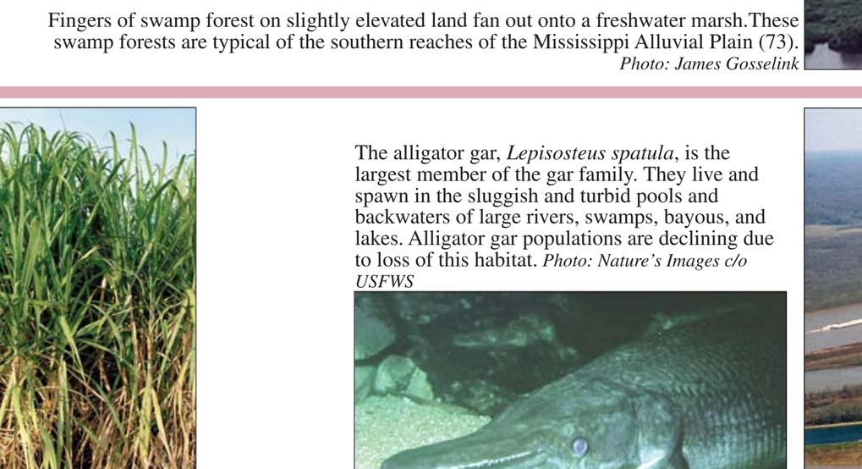
Many regions throughout the Mississippi Alluvial Plain (73), including Macon Ridge (73j), have cotton as one of the primary crops. *Photo: USDA*

Red-winged blackbirds, *Agelaius phoeniceus,* enjoy the habitat provided within Ecoregion 73j. *Photo: Peter S. Weber, www.wildbirdphotos.com*



Rice is one of the many crops grown in this region. Flooded rice fields provide habitat for migrating water birds. *Photo: NRCS*

73j The **Macon Ridge** ecoregion is a prominent ridge that consists almost entirely of early-Wisconsin glacial outwash. Although it is a continuation of the Western Lowlands Pleistocene Valley Trains (73g), it is generally higher. The eastern edge of the region is higher than the west, 20 to 30 feet above the adjacent Northern Holocene Meander Belts (73a), and it has a veneer of loess, similar to areas in the Grand Prairie (73e) and Bluff Hills (74a) ecoregions. On the western side, elevations of the ridge are approximately the same as those in the Arkansas/Ouachita River Holocene Meander Belts (73h) so that it is sometimes difficult to distinguish the two at the surface. Macon Ridge (73j) is better drained and supports drier plant communities. Forest types range from those of wet flats dominated by willow oak, water oak and swamp chestnut oak to upland hardwood forests dominated by white oak and southern red oak, with post oak on more xeric sites. Cropland is extensive; corn, cotton, and rice are prominent crops, and half of the farmland is irrigated.

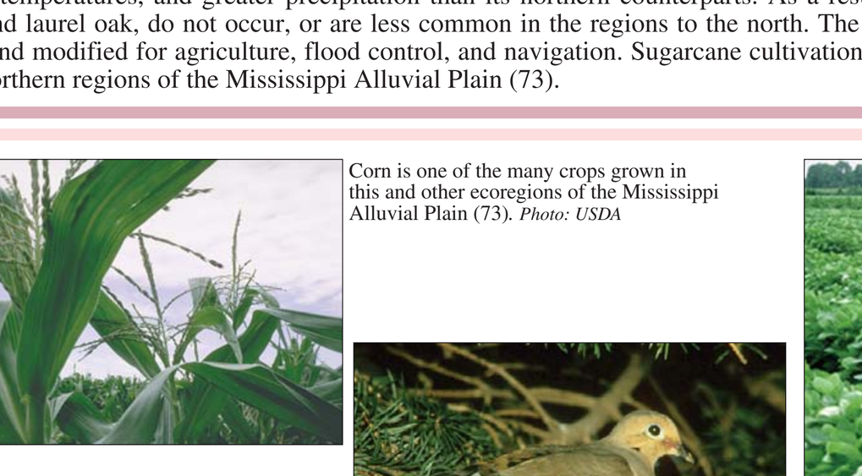


Sugarcane is a major crop in the southern reaches of this ecoregion.

The alligator gar, *Lepisosteus spatula*, is the largest member of the gar family. They live and spawn in the sluggish and turbid pools and backwaters of large rivers, swamps, bayous, and lakes. Alligator gar populations are declining due to loss of this habitat. *Photo: Nature's Images c/o USFWS*

The river complex has been extensively channelized and leveed. *Photo: Michael Maples, USACE*

73k The **Southern Holocene Meander Belts** ecoregion stretches from just north of Natchez, MS south to New Orleans, LA. Similar to the more northerly meander belt regions, such as 73a, point bars, oxbows, natural levees, and abandoned channels occur. However, this region has a longer growing season, warmer temperatures, and greater precipitation than its northern counterparts. As a result, many plant species common in this region, such as live oak, Spanish moss, and laurel oak, do not occur, or are less common in the regions to the north. The bottomland forests have been cleared and the region has been extensively leveed and modified for agriculture, flood control, and navigation. Sugarcane cultivation is common and replaces some of the crops, such as rice and cotton, found in the northern regions of the Mississippi Alluvial Plain (73).

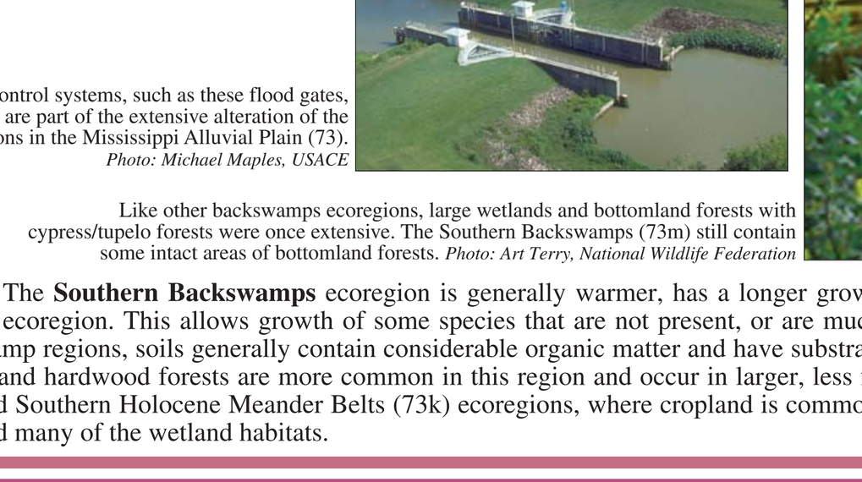


Corn is one of the many crops grown in this and other ecoregions of the Mississippi Alluvial Plain (73). *Photo: USDA*

The mourning dove, *Zenaida macroura,* is a migratory game bird. The dove uses the grain crops grown in the region for forage. *Photo: James Leupold, USFWS*

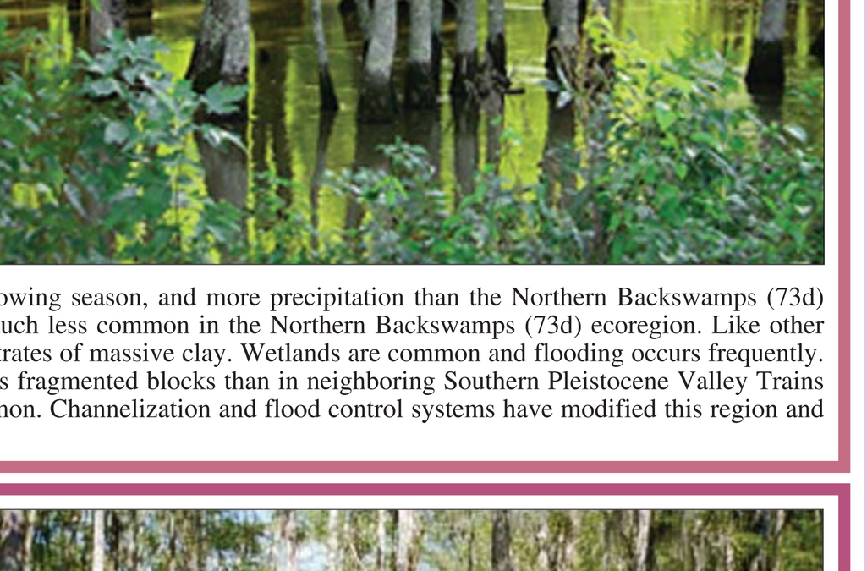
Row crop agriculture is extensive in the Southern Pleistocene Valley Trains (73l) ecoregion. Most of the original bottomland forest has been cleared for agriculture. Soybean fields are found throughout the region. *Photo: USDA*

73l The **Southern Pleistocene Valley Trains** ecoregion is a continuation of the northern valley train regions. It is composed of scattered small remnants of early-Wisconsin glacial outwash deposits, similar to those of Macon Ridge (73j). However, this ecoregion has warmer temperatures, a longer growing season, and higher annual rainfall. Thus, some species occur here that are not present in the Macon Ridge (73j) or the Western Lowlands Pleistocene Valley Trains (73g) ecoregions. This region is generally higher than the surrounding Southern Backswamps (73m) ecoregion and soils are more sandy and better drained than the heavy clay soils of the backswamps. Cropland agriculture is common with corn, soybeans, and rice as the major crops.



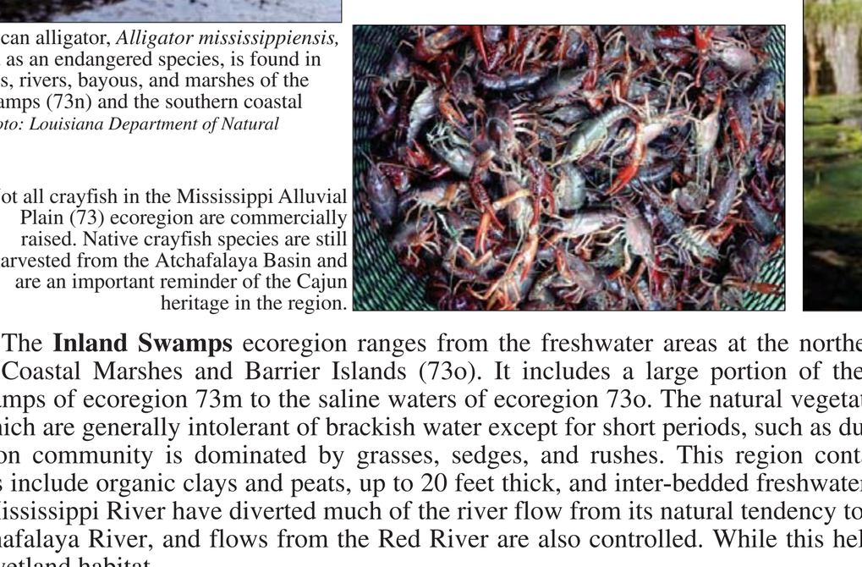
Historically, the Louisiana black bear, *Ursus americanus luteolus*, was common throughout the Mississippi Alluvial Plain (73). Now the endangered bear's preferred woodland habitat is limited to small areas within the backswamps ecoregions. *Photo: Gary M. Stolz, USFWS*

Flood control systems, such as these flood gates, are part of the extensive alteration of the ecoregions in the Mississippi Alluvial Plain (73). *Photo: Michael Maples, USACE*



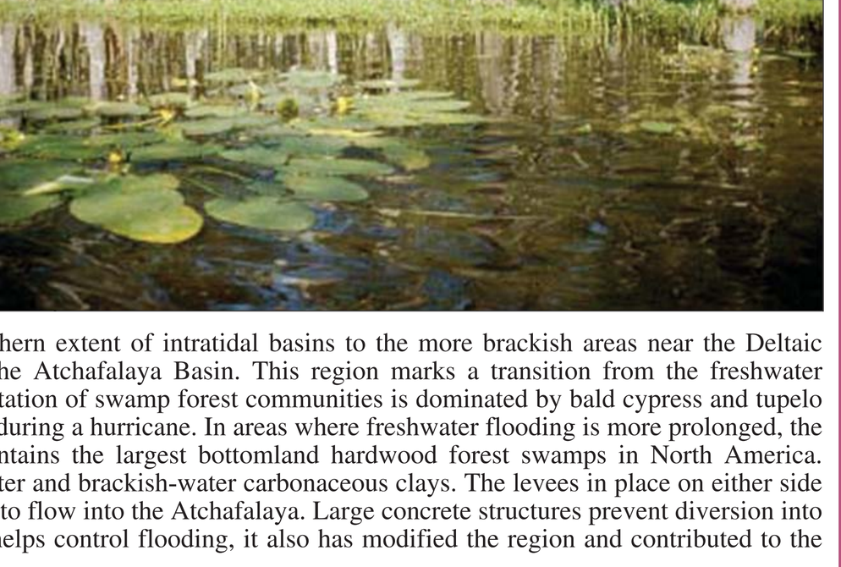
Like other backswamps ecoregions, large wetlands and bottomland forests with cypress/tupelo forests were once extensive. The Southern Backswamps (73m) still contain some intact areas of bottomland forests. *Photo: Art Terry, National Wildlife Federation*

73m The **Southern Backswamps** ecoregion is generally warmer, has a longer growing season, and more precipitation than the Northern Backswamps (73d) ecoregion. This allows growth of some species that are not present, or are much less common in the Northern Backswamps (73d) ecoregion. Like other backswamp regions, soils generally contain considerable organic matter and have substrates of massive clay. Wetlands are common and flooding occurs frequently. Bottomland hardwood forests are more common in this region and occur in larger, less fragmented blocks than in neighboring Southern Pleistocene Valley Trains (73l) and Southern Holocene Meander Belts (73k) ecoregions, where cropland is common. Channelization and flood control systems have modified this region and impacted many of the wetland habitats.



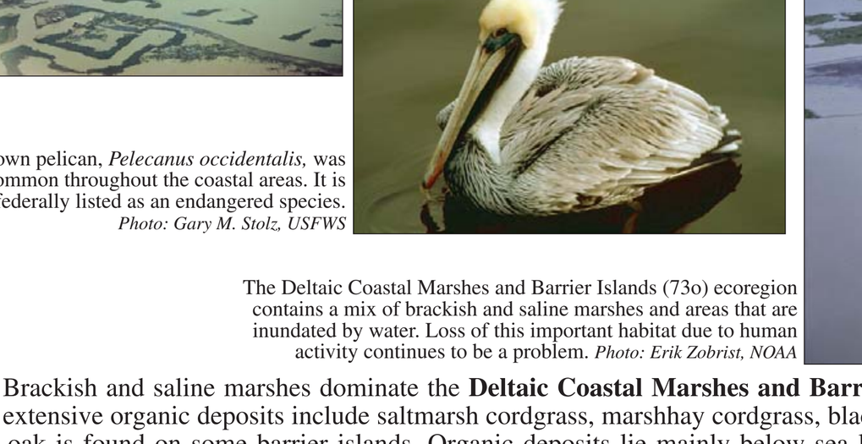
The American alligator, *Alligator mississippiensis,* once listed as an endangered species, is found in the swamps, rivers, bayous, and marshes of the Inland Swamps (73n) and the southern coastal region. *Photo: Louisiana Department of Natural Resources*

Not all crayfish in the Mississippi Alluvial Plain (73) ecoregion are commercially raised. Native crayfish species are still harvested from the Atchafalaya Basin and are an important reminder of the Cajun heritage in the region.



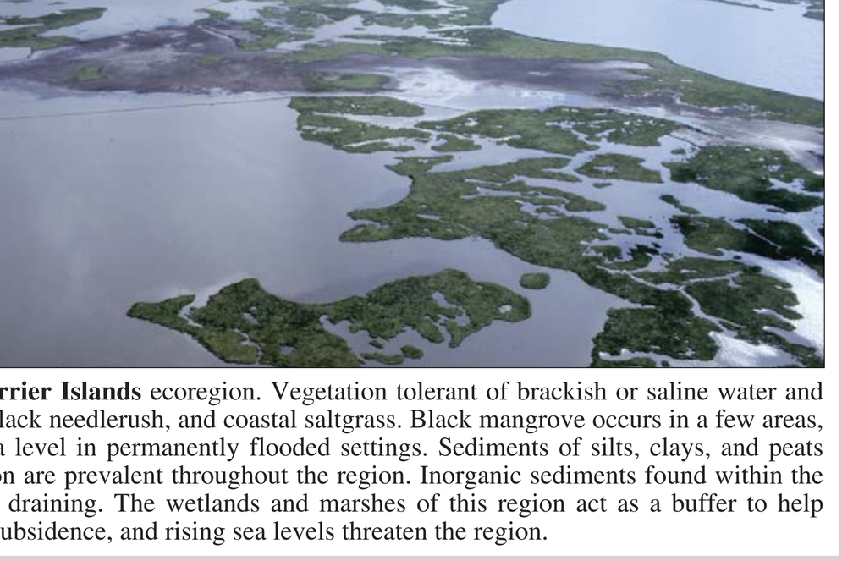
Cypress/tupelo forest with the typical "cypress knees" are characteristic vegetation of the Inland Swamps (73n) ecoregion and provide habitat for a variety of wildlife. This includes reptiles and amphibians that are well adapted to this wetland environment. *Photo: Dr. Bruce E. Fleury, Tulane University*

73n The **Inland Swamps** ecoregion ranges from the freshwater areas at the northern extent of intratidal basins to the more brackish areas near the Deltaic Coastal Marshes and Barrier Islands (73o). It includes a large portion of the Atchafalaya Basin. This region marks a transition from the freshwater backswamps of ecoregion 73m to the saline waters of ecoregion 73o. The natural vegetation of swamp forest communities is dominated by bald cypress and tupelo gum, which are generally intolerant of brackish water except for short periods, such as during a hurricane. In areas where freshwater flooding is more prolonged, the vegetation community is dominated by grasses, sedges, and rushes. This region contains the largest bottomland hardwood forest swamps in North America. Deposits include organic clays and peats, up to 20 feet thick, and inter-bedded freshwater and brackish-water carbonaceous clays. The levees in place on either side of the Mississippi River have diverted much of the river flow from its natural tendency to flow into the Atchafalaya. Large concrete structures prevent diversion into the Atchafalaya River, and flows from the Red River are also controlled. While this helps control flooding, it also has modified the region and contributed to the loss of wetland habitat.



Oil fields and canals in the Deltaic Coastal Marshes. These artificial canals allow access to the oil and gas wells. The levees bordering the canals block the natural water flow to the remaining wetlands. *Photo: James Gosselink*

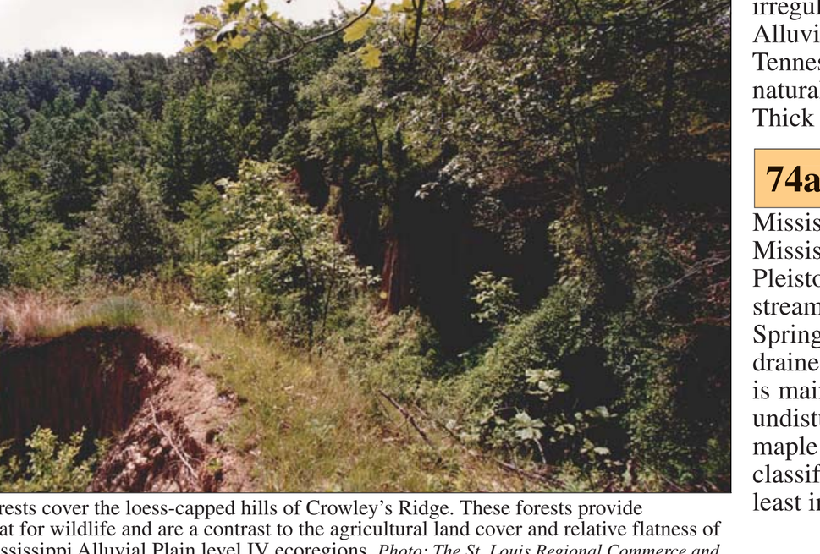
The brown pelican, *Pelecanus occidentalis,* was once common throughout the coastal areas. It is now federally listed as an endangered species. *Photo: Gary M. Stolz, USFWS*



The Deltaic Coastal Marshes and Barrier Islands (73o) ecoregion contains a mix of brackish and saline marshes and areas that are inundated by water. Loss of this important habitat due to human activity continues to be a problem. *Photo: Erik Zobrist, NOAA*

73o Brackish and saline marshes dominate the **Deltaic Coastal Marshes and Barrier Islands** ecoregion. Vegetation tolerant of brackish or saline water and extensive organic deposits include saltmarsh cordgrass, marshhay cordgrass, black needlerush, and coastal saltgrass. Black mangrove occurs in a few areas, and live oak is found on some barrier islands. Organic deposits lie mainly below sea level in permanently flooded settings. Sediments of silts, clays, and peats contain large amounts of methane, oil, and hydrogen sulfide gas. Gas and oil extraction are prevalent throughout the region. Inorganic sediments found within the ecoregion are soft and have high water contents; they will shrink dramatically upon draining. The wetlands and marshes of this region act as a buffer to help moderate flooding and tidal inundation during storm events. Erosion of the delta, land subsidence, and rising sea levels threaten the region.

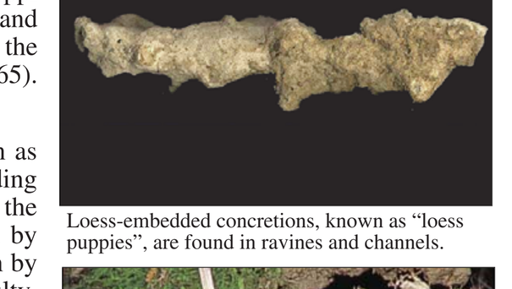
74. Mississippi Valley Loess Plains



Oak-hickory forests cover the loess-capped hills of Crowley's Ridge. These forests provide woodland habitat for wildlife and are a contrast to the agricultural land cover and relative flatness of neighboring Mississippi Alluvial Plain level IV ecoregions. *Photo: The St. Louis Regional Commerce and Growth Association*

This ecoregion stretches from near the Ohio River in western Kentucky south to Louisiana. It consists primarily of irregular plains and bluffs near the Mississippi River, along with some disjoined low hills found within the Mississippi Alluvial Plain (73). Western areas, including Arkansas, have hills, ridges, and bluffs but, further east in Mississippi and Tennessee, the topography becomes flatter. Oak–hickory, oak-hickory-pine, and some mixed mesophytic forests were the natural vegetation cover. Streams tend to have less gradient and more silty substrates than in the Southeastern Plains (65). Thick loess is a distinguishing characteristic of the region.

74a The portion of the **Bluff Hills** ecoregion found within the Mississippi Alluvial Plain (73) is locally known as Crowley's Ridge. It is a disjunct series of loess-capped low hills with much greater relief than the surrounding Mississippi Alluvial Plain (73). Its base is Tertiary sands, gravels and other materials that were never removed by the Mississippi or Ohio rivers. This low ridge formed a barrier that was high enough to catch silt that was blown by Pleistocene winds. Thus the ridge was finally formed by aggregation of silt from these winds and subsequent erosion by streams. The loess is also subject to vertical sloughing when wet; it reaches a stable angle of repose with difficulty. Spring fed streams and seep areas occur on the lower slopes in the sandy and gravelly soils. Soils are generally well drained and loamier and more eroded than those found in the surrounding regions (Ecoregions 73c and 73g). Land cover is mainly pasture and woodland with only limited areas of row crop agriculture. Oak–hickory is the general forest type; undisturbed ravine vegetation is rich in mesophytes, such as beech and sugar maple. Although they are related to beech-maple cove forests of the Appalachians and this association does occur on Crowley's Ridge, the forests here are usually classified as oak-beech. Like the Appalachian cove forests, tulip poplar dominates early successional communities, at least in the southern ridge. Shortleaf pine occurs in the sandier soils of the northern ridge.



Loess-embedded concretions, known as "loess puppies", are found in ravines and channels.

The Louisiana waterthrush, *Seiurus motacilla,* prefers habitats near water. The woodland areas of the Bluff Hills (74a) provide cover and are close to the main streams and wetlands of the Mississippi Alluvial Plain (73).

US Army Corps of Engineers
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ARKANSAS MULTI-AGENCY WETLAND PLANNING TEAM

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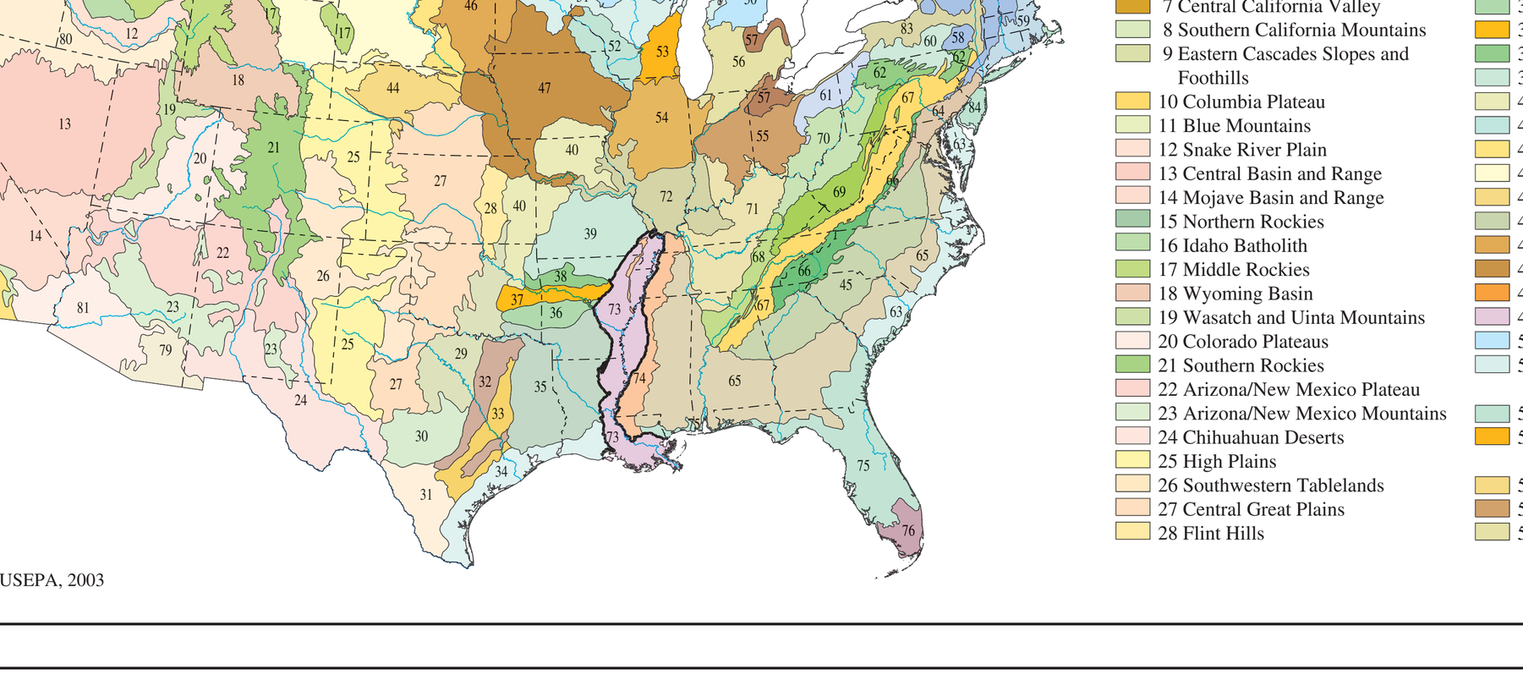
Level III Ecoregions of the Conterminous United States



Map Source: USEPA, 2003

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