Ecological Site Description

Wet Braided Terrace Forest F131AY006MO

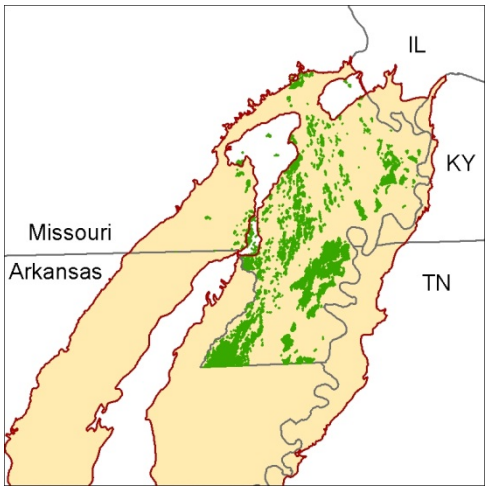
- *(Liquidambar styraciflua - Quercus phellos/Ilex decidua/Carex - Impatiens pallida)*
- (sweetgum – willow oak/possum haw/sedge – pale touch-me-not)

An Ecological Site Description (ESD) is a reference document of ecological knowledge regarding a particular land area (ecological site). An ESD describes ecological potential and ecosystem dynamics of land areas and their potential management. Ecological sites are linked to soil survey map unit components, which allows for mapping of ecological sites. (***NOTE:*** *This is a "provisional" ESD, and is subject to change. It contains basic ecological information sufficient for conservation planning and land management in Missouri. After additional information is developed and reviewed, a "Correlated" ESD will be published and will be available via the Web Soil Survey* http://websoilsurvey.nrcs.usda.gov .)

Major Land Resource Area: 131A – Southern Mississippi River Alluvium

Introduction

The Southern Mississippi River Alluvium (area outlined in red on the map; northern portion only) is a vast alluvial plain, stretching from the confluence of the Mississippi and Ohio Rivers to tidewater areas of the Gulf of Mexico. The area is formed primarily in sediments deposited by the Mississippi River, with significant contributions from the St Francis and Black Rivers west of Crowley's Ridge, in the northern part of the area. A variety of alluvial landforms are present, including natural levees, sand splays, backswamps, channels, swales, stream terraces and braided terraces. Dunes have formed from wind redistribution of alluvial sands, and loess deposits overlie older terraces to the west. Elevation ranges from about 330 feet in the north to sea level in the south. Local relief is low, and much of the area appears flat, although low escarpments and other slight changes in elevation often indicate major changes in hydrology and soils.



Wet Braided Terrace Forests are within the green areas on the map (Missouri portion only; distributions farther south are currently under review). These sites are widely distributed on braided stream terraces and floodplains throughout the area, especially east of Crowley's Ridge. They are closely associated with Braided Terrace Channel ecological sites. Soils are very deep with seasonal high water tables.

Physiographic Features

These sites are on nearly level braided stream terraces and floodplains. Some areas not protected by levees are subject to flooding.

Soil Features

These soils have no major rooting restriction. The soils were formed under forest vegetation, and have thin, light-colored surface horizons. They have loam to silty clay loam surface horizons, and loamy subsoils. Parent material is loamy alluvium. They are affected by a seasonal high water table. Soil series associated with this site include Baldwin, Dundee, Fountain, and Waverly.

Ecological Dynamics

Information contained in this section was developed using historical data, professional experience, field reviews, and scientific studies. The information presented is representative of very complex vegetation communities. Key indicator plants, animals and ecological processes are described to help inform land management decisions. Plant communities will differ across the MLRA because of the naturally occurring variability in weather, soils, and aspect. The Reference Plant Community is not necessarily the management goal. The species lists are representative and are not botanical descriptions of all species occurring, or potentially occurring, on this site. They are not intended to cover every situation or the full range of conditions, species, and responses for the site.

Wet Braided Terrace Forests in the eastern lowlands are on landscape positions that historically flooded nearly annually. Much of the flooding was from ponding of rainfall and sheet flow across these landscapes. The historic flood regime was mainly in late fall and winter and its duration was for a couple of months.

Wet Braided Terrace Forests are similar to Wet Loess Terrace Forests west of Crowley's ridge, but had a little wetter hydrologic regime. Consequently, these sites have a wide variety of somewhat flood tolerant species such as willow oak, sweetgum, pin oak, Nuttall oak, water oak, American elm, sugarberry, and green ash. Trees are generally 70 to 90 feet tall with a canopy closure of 80 to 100 percent. The understory is relatively open, and a diverse array of ground flora species, especially sedges are interspersed with patches of barer ground in lower wetter areas.

Flooding, wind and ice storms were likely the most important disturbances in this region. All would have created occasional canopy gaps so that the oak species could regenerate.

Today most floodplain forests in the Mississippi Alluvial Plain are cleared and converted to cropland. However occasional remnants do exist, and because their flood regime relies on ponding and movement of rainfall, their hydrology may be minimally altered. These blocks of forest play an important role as a source of food and shelter for migrating birds.

Planting of intermediate flood tolerant species on the appropriate landscape position and soils has proven to be quite successful.

Reference State Plant Community

Canopy Trees

Common Name	Botanical Name	Cover % (low-high)	Canopy Height (ft)
SWAMP WHITE OAK	*Quercus bicolor*	5-20	80
GREEN ASH	*Fraxinus pennsylvanica*	5-20	80
WATER OAK	*Quercus nigra*	5-20	80
NUTTALL OAK	*Quercus nuttallii*	5-20	70
SUGARBERRY	*Celtis laevigata*	5-20	80
SHELLBARK HICKORY	*Carya laciniosa*	5-20	70
SWEETGUM	*Liquidambar styraciflua*	5-20	90
PIN OAK	*Quercus palustris*	5-20	80
AMERICAN ELM	*Ulmus americana*	5-20	80
SWAMP CHESTNUT OAK	*Quercus michauxii*	5-20	80
WILLOW OAK	*Quercus phellos*	5-20	90
SWAMP RED MAPLE	*Acer rubrum v. drummondii*	5-20	70

Understory Trees

Common Name	Botanical Name	Cover % (low-high)	Canopy Height (ft)
RED ELM	*Ulmus rubra*	10-20	50
BLACK WILLOW	*Salix nigra*	10-20	50

Shrubs

Common Name	Botanical Name	Cover % (low-high)	Canopy Height (ft)
BUTTONBUSH	*Cephlanthus occidentalis*	0-10	8
GRAY DOGWOOD	*Cornus foemina*	5-10	10
POSSUM HAW	*Ilex decidua*	5-10	10

Vines

Common Name	Botanical Name	Cover % (low-high)
FOX GRAPE	*Vitis vulpina*	10-20
RACOON GRAPE	*Ampelopis cordata*	10-20
POISON IVY	*Toxicodendron radicans*	10-20

Forbs

Common Name	Botanical Name	Cover % (low-high)
CLEARWEED	*Pilea pumila*	10-20
WHITE WOODLAND ASTER	*Aster lateriflorus*	10-20
WOOD NETTLE	*Laportea canadensis*	10-20
GOLDENGLOW	*Rudbeckia laciniata*	10-20
WATERLEAF	*Hydrophyllum virginianum*	10-20
HISPID BUTTERCUP	*Ranunculus hispidus*	10-20
YELLOW IRONWEED	*Verbesina alternifolia*	10-20
TOUCH-ME-NOT	*Impatiens pallida*	10-20
FALSE NETTLE	*Boehmeria cylindrica*	10-20

Grasses and sedges

Common Name	Botanical Name	Cover % (low-high)
RICE CUTGRASS	*Leersia oryzoides*	5-20
FOX SEDGE	*Carex vulpina*	5-20
HOP SEDGE	*Carex lupulina*	5-20
WOOD REED GRASS	*Cinna arundinacea*	5-20
INDIAN WOODOATS	*Chasmanthium latifolium*	5-20

Site Interpretations

Wildlife

- This ecological site is a forest with snags and cavities and down dead wood that provides habitat for many species requiring cool, rich, moist conditions.
- Periodic inundation and acorns provide important habitat for migrating ducks (especially mallards) and breeding ducks including wood ducks and hooded mergansers.
- Important migratory songbird stopover sites and seasonal inundation important for waterbirds.
- Birds associated with late-successional Wet Floodplain Forests are Wood Duck, Hooded Merganser, Barred Owl, Cerulean Warbler, Yellow-throated Warbler, Prothonotary Warbler, Pileated Woodpecker, Swainson's Warbler (sites with giant cane or sapling/brambles dominated understory), Yellow-throated Vireo, Brown Creeper, and Yellow-crowned Night Heron.
- Reptiles and amphibians associated with Wet Floodplain Forests include: marbled salamander, mole salamander, small-mouthed salamander, central newt, midland brown snake, broad-banded water snake, western mud snake, gray tree frog, northern spring peeper, blanchard's cricket frog, southern leopard frog, western painted turtle, and red-eared slider.

Forestry

- Management: Estimated site index values range from 50 to 90. On the wettest sites, timber management opportunities may be limited. Management of these groups is often difficult because of the great variation in species, age, stocking levels and seasonal wetness. Use seed-tree, group selection, or clear cutting regeneration methods. Maintain adequate riparian buffer areas.

- Limitations: Wetness from flooding; high water table. Use of equipment may be restricted in spring and other excessively wet periods. Restrict activities to dry periods or surfaced areas. Equipment use when wet may compact soil and damage tree roots. Unsurfaced roads and traffic areas tend to be slippery and form ruts easily. Access to forests is easiest during periods in late summer or winter when soils are frozen or dry. Planting is extremely difficult during spring periods. Seedling mortality may be high due to excess wetness. Unsurfaced roads and skid trails may be impassable during rainy periods.

Glossary

Backslope – a hillslope profile position that forms the steepest and generally linear, middle portion of the slope.

Backswamp – marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces

Calcareous – the presence of calcium carbonate in the soil parent material within the rooting zone; relatively alkaline

Claypan – a dense, compact, slowly permeable layer in the subsoil having much higher clay content than the overlying material

Chert – hard, extremely dense or compact crystalline sedimentary rock, consisting dominantly of interlocking crystals of quartz

Cliff – a significant vertical, or near vertical, rock exposure

Dolomite – a type of sedimentary rock that is a carbonate mineral composed of calcium magnesium carbonate

Drainageway – the upper most reach of a stream channel system characterized by little meandering

Dry – a site where soil moisture is limiting during the growing season; low available water capacity

Dune – a low mound, ridge, bank or hill of loose, wind-blown sand

Exposed – steep, south and west-facing slopes, which are warmer and drier than other slope aspects

Flatwoods – a type of woodland that occurs on soils with a root restricting subsoil layer within 20 to 30 inches, resulting in very slow runoff and ponding that remains saturated for most of the winter and early spring months but dries out and becomes very dry in the summer months; plants that grow there must be adapted to both conditions

Floodplain – the nearly level plain that borders a stream and is subject to inundation under flood-stage conditions

Footslope – a hillslope position at the base of a slope where hillslope sediment (colluvium) accumulates

Forest – a vegetative community dominated by trees forming a closed canopy and interspersed with shade-tolerant understory species

Fragipan – a dense, brittle subsoil horizon that is extremely hard and compact when dry

Glade – open, rocky, barren vegetative community dominated by drought-adapted forbs and grasses, typically with scattered, stunted woody plants
Igneous –bedrock formed by cooling and solidification of magma. Granite and rhyolite are typical igneous bedrocks in Missouri

Limestone – a type of sedimentary rock composed largely of calcium carbonate

Loess – material transported and deposited by wind and consisting predominantly of silt-size particles

Loamy – soil material containing a relatively equal mixture of sand and silt and a somewhat smaller proportion of clay

Marsh – a type of wetland that is dominated by herbaceous rather than woody plant species

Moist – a site that is moderately well to well drained and has high available water capacity, resulting in a well-balanced supply of moisture (neither too dry nor too wet).

Mudstone – blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal

Natric – a soil horizon that displays a blocky, columnar, or prismatic structure and has a subhorizon with an exchangeable-sodium saturation of over 15%

Outwash – stratified sediments of sand and gravel removed or "washed out" from a glacier by melt-water streams

Prairie – a vegetative community dominated by perennial grasses and forbs with scattered shrubs and very few trees

Protected – steep, north- and east-facing slopes, which are cooler and moister than other slope aspects

Residuum - unconsolidated, weathered, or partly weathered mineral material that accumulates by disintegration of bedrock in place

Riser – a component of terraces and flood-plain steps consisting of the steep side slope; the escarpment

Riverfront – a vegetative community in the floodplain immediately adjacent and generally parallel to a river or stream channel

River hills – a geographic area characterized by thick, dissected loess deposits, formed immediately adjacent to the edges of the Missouri and Mississippi River floodplains

Sandy – a coarse-sized soil containing a large mixture of sand and gravels and a somewhat smaller proportion of silts and clays with excessive drainage

Sandstone – a sedimentary rock containing dominantly sand-size particles

Savanna – grasslands interspersed with open-grown scattered trees, groupings of trees, and shrubs

Shale – a sedimentary rock formed from clay, silty clay, or silty clay loam deposits and having the tendency to split into thin layers

Shallow – a site with bedrock within 20 inches of the surface

Shoulder – the slope profile position that forms the convex surface near the top of a hill slope; it comprises the transition zone from summit to backslope

Sinkhole – a closed, circular or elliptical depression, commonly funnel-shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock or by collapse of underlying caves within bedrock

Summit – the top or highest area of a hillslope

Swale –shallow, closed depressions irregularly spaced across a floodplain or terrace with an irregularly undulating surface.

Swamp – an area of low, saturated ground, intermittently or permanently covered with water, and predominantly vegetated by shrubs and trees.

Talus – rock fragments of any size or shape (usually coarse and angular) derived from and lying at the base of a cliff or very steep rock slope.

Terrace – a step-like surface, bordering a valley floor that represents the former position of a flood plain

Till – dominantly unsorted and unstratified soil material deposited directly by a glacier

Upland – a general term for the higher ground of a region, in contrast with a low-lying, adjacent land such as a valley or floodplain

Wet – a somewhat poorly, poorly or very poorly drained site that has an oversupply of moisture during the growing season

Woodland – a highly variable vegetative community with a canopy of trees ranging from 30 to 100 percent closure with a sparse midstory and a dense ground flora of grasses, sedges and forbs

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