

Wilhelmina Conservation Area

Ten-Year Area Plan
FY 2016-2025



Jusi B Allen

Forestry Division Chief

2-11-16

Date

Wilhelmina Conservation Area Management Plan Approval Page

PLANNING TEAM

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SOUTHEAST REGION

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Signature


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OVERVIEW

- **Official Area Name:** Wilhelmina Conservation Area, #7943
- **Year of Initial Acquisition:** 1980
- **Acreage:** 1,476 acres
- **County:** Dunklin, Butler
- **Division with Administrative Responsibility:** Forestry Division
- **Division with Maintenance Responsibility:** Forestry Division
- **Statement of Purpose:**
 - A. Strategic Direction**

Manage and sustain the Wilhelmina Conservation Area's (CA's) existing natural communities, and enhance the quality of wildlife habitat for a variety of species through forest and open field management. Emphasis will be on forest and wetland wildlife that occur in St. Francis River forested wetlands.
 - B. Desired Future Condition**

The desired future condition of Wilhelmina CA is a diverse bottomland hardwood forest habitat that will support and sustain all of the natural communities and associated wildlife, a productive and diverse fishery and opportunities for the public to utilize and enjoy the area's natural resources.
 - C. Federal Aid Statement**

N/A

GENERAL INFORMATION AND CONDITIONS

- I. Special Considerations**
 - A. Priority Areas:** Wilhelmina Terrestrial Conservation Opportunity Area
 - B. Natural Areas:** None

- II. Important Natural Features and Resources**
 - A. Species of Conservation Concern:** Species of conservation concern are known from this area. Area Managers should consult the Natural Heritage Database annually and review all management activities with the Natural History Biologist.
 - B. Caves:** None
 - C. Springs:** None
 - D. Other:** Wet and wet-mesic bottomland forest, old channel and oxbow of St. Francis River

- III. Existing Infrastructure**
 - 3 gravel parking lots
 - 1 small concrete pad with 2 picnic tables

IV. Area Restrictions or Limitations

- A. Deed Restrictions or Ownership Considerations:** None
- B. Federal Interest:** Federal funds may be used in the management of this land. Fish and wildlife agencies may not allow recreational activities and related facilities that would interfere with the purpose for which the State is managing the land. Other uses may be acceptable and must be assessed in each specific situation.
- C. Easements:** M & A Electric Power Cooperative electric line easement
- D. Cultural Resources Findings:** No known cultural resources.
- E. Hazards and Hazardous Materials:** None observed.
- F. Endangered Species:** None observed.
- G. Boundary Issues:** None

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

The area consists of 11 management compartments (Figure 2), ranging in size from 35 to 200 acres. Natural communities on this area include wet and wet-mesic bottomland forests, swamp and shrub swamp.

Challenges and Opportunities:

- 1) Manage bottomland hardwood forest. Most of the area is either wet or wet-mesic bottomland forest. Dominant tree species include pin/nuttall oak, willow oak, overcup oak, shellbark hickory, elm, red maple, swamp chestnut oak, green ash, sweetgum and baldcypress. The western part of the area was heavily cutover before the Missouri Department of Conservation's (the Department's) purchase in 1980. These stands are currently in pole and small saw timber sized growing stock. Some of these stands have received light forest-stand improvement thinning to remove excess undesirable growing stock. The forest of the southern and eastern parts of the area was not cut as heavily before the Department's purchase and contains a considerable amount of saw timber trees. Some of these stands were lightly thinned in 1982 and 1983. Most of the soils on this forest are highly productive for growing trees and vegetation. During the 1980s and early 1990s, 200 acres of old fields scattered throughout the area were reforested to native bottomland trees species, primarily pin/nuttall oak, cherrybark oak, willow oak, sweetgum and green ash.
- 2) Manage habitat for the area's wildlife species. Wildlife species using the area are typical of most Lower Mississippi Alluvial Valley forested wetlands. Mallard and other waterfowl use the area during winter and wood ducks are permanent residents. Herons, some shorebirds, prothonotary warblers, and other interior songbirds use the forest cover and associated wetlands. Alligator snapping turtles

and many other amphibians and reptiles use the channels, sloughs and old river. Deer, turkey, squirrels, cottontail and swamp rabbits use the forest and some of the old fields that have been planted to trees on the area. Many other species of wildlife depend on this forested wetland and open water habitat.

- 3) Maintain and restore drainage on the area. Major St. Francis River flooding in 2002 and again in 2007 created large sand deposits in the old St. Francis River channel south of the area (Figure 4). These deposits have acted as a plug that prevents the old channel high water from flowing back out into the St. Francis River. After spring flood events, high water is held in the old channel throughout most of the growing season and prevents drainage of the slough that drains most of Wilhelmina CA. This has the potential to compromise the area's bottomland forest communities, create tree mortality and potentially shift the community to a wetter environment over time.
- 4) Manage a demonstration pecan orchard.

Objective 1: Manage bottomland hardwood forest for a species mix characteristic of the natural communities (wet or wet-mesic bottomland forest). Priority species should be those that depend on and utilize lowland wetland forests and their associated open wetlands (swamps, old river channels, oxbows, sloughs).

Strategy 1: Follow the Southeast Region Forest Inventory schedule. Inventory each compartment on a 10- to 20-year re-entry. (Forestry)

Strategy 2: Uneven aged (or all aged) harvests and forest thinning will be used to create forest habitat conditions suitable for wetland forest wildlife species. A long term goal is to have 35 to 50 percent of forested acres meet the desired stand structure conditions, following recommendations of *Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat* (Lower Mississippi Valley Joint Venture Forest Resource Conservation Working Group, 2007). (Forestry)

Strategy 3: From inventory data, develop and implement forest management actions (harvest and forest thinning), as budget and time constraints allow. (Forestry)

Strategy 4: Continue the old growth designation for the wet-mesic bottomland forest in Compartments 8 and 9. (Forestry)

Objective 2: Manage the existing open land and old fields to enhance wildlife habitat.

Strategy 1: Manage open areas (i.e., stands 6, 7, 8 in Compartment 7; stand 9 in Compartment 3, and possibly some of the old field stands in Compartment 8 and 9) through periodically planted food plots, prescribed fire, or mechanical setback (disking or dozing of vegetation) to create partially open field conditions. (Forestry)

Strategy 2: Where giant cane occurs along old field borders, conduct a partial release of some of these cane patches from dense overstory cover. (Forestry)

Objective 3: Maintain and restore drainage on the area that will sustain current natural communities.

Strategy 1: Control beaver and remove beaver dams that impede water flows and create high water (ponding) conditions into the growing season.(Forestry)

Strategy 2: Keep Department Policy Coordination and U. S. Army Corps of Engineers personnel aware of the sand plug on the lower section of the old St. Francis River channel that is impeding drainage through and off the area (Figure 4). (Forestry)

Strategy 3: Investigate options to allow for more water level control on Wilhelmina CA, which would benefit the ecosystem by simulating more natural hydrology. Pursue funding for remediation efforts and control structures. (Forestry)

Objective 4: Manage the pecan plantation in Section 22 as a demonstration orchard.

Strategy 1: Continue grafting improved varieties onto approximately 70 additional 2009 storm damaged trees. (Forestry)

Strategy 2: Plant 50 improved variety seedlings into storm damaged tree spaces. (Forestry)

Strategy 3: Control weeds and rodents in the orchard. (Forestry)

VI. Aquatic Resource Management Considerations

Fisheries management potential is limited on the area. Permanent surface water is found in the Wilhelmina Cutoff, the old St. Francis River channel, an oxbow lake and a small pond resulting from the damming of an old drainage ditch. The old St. Francis River no longer flows; the river was diverted into the Wilhelmina Cutoff channel. This creates very little water flow, very low water levels (at times), and turbid conditions in the old channel. The fast-flowing Wilhelmina Cutoff has considerable bank erosion and contains very little fish habitat. However, anglers do use the pond and the old river channel, which is essentially an overflow fishery dominated by sunfish species.

Challenges and Opportunities:

- 1) Manage the area's fishery resources.
- 2) Conserve the area's aquatic species of conservation concern.

Objective 1: Manage fishery resources to provide unique angling opportunities and conserve aquatic species of conservation concern.

APPENDICES

Area Background:

The Wilhelmina Conservation Area is a predominantly forested area. It is a remnant of the bottomland forest that originally covered most of the Missouri Bootheel region. The area is the largest block of forest cover in northern Dunklin County, a county with only 3% forest cover.

The area is adjacent to the small community of Wilhelmina. The community was established around 1908 by Catholic settlers from Missouri, Indiana and Holland immigrants. By 1975, most of the forestland around this area had been cleared for agriculture. In 1960, the Armstrong Cork Company acquired the 858 acres that would later become the first block of the conservation area. The company intended to cut all the merchantable timber from the land and subsequently establish improved cottonwood or other poplar plantations. In 1965, most of the merchantable timber was cut off this tract. In 1974, Armstrong Cork Company changed their plans and traded this tract to Westvaco Corporation for other lands near its holdings in South Carolina. Westvaco eventually decided this tract was too far from their Wickliffe, Kentucky mill and in 1979 traded the land to First Royal Enterprises. In 1980, the land was sold to the Department along with other holdings in Butler County. Two additional tracts were added to the area in 1982 and another tract was purchased in 1987.

Current Land and Water Types:

| Land/Water Type | Acres | % of Area |
|---|--------------|------------|
| Bottomland Forest | 1,084 | 74 |
| Old Tree Plantations | 257 | 17 |
| Open Land | 77 | 5 |
| Water (old slough, pond, old river channel) | 58 | 4 |
| Total | 1,476 | 100 |

Public Input Summary:

The draft Wilhelmina Conservation Area Management Plan was available for a public comment period October 1-31, 2015. The Missouri Department of Conservation received no comments during this time period.

References:

Lower Mississippi Valley Joint Venture Forest Resource Conservation Working Group. (2007). *Restoration, management and monitoring of forest resources in the Mississippi Alluvial Valley: Recommendations for enhancing wildlife habitat*. R Wilson, K. Ribbeck, S. King, & D. Twedt (Eds.). LSU Printing Services.

Maps:

Figure 1: Area Map

Figure 2: Forest Stand Map

Figure 3: Soil Units Map and Soils Information

Figure 4: Drainage Map

Figure 1: Area Map

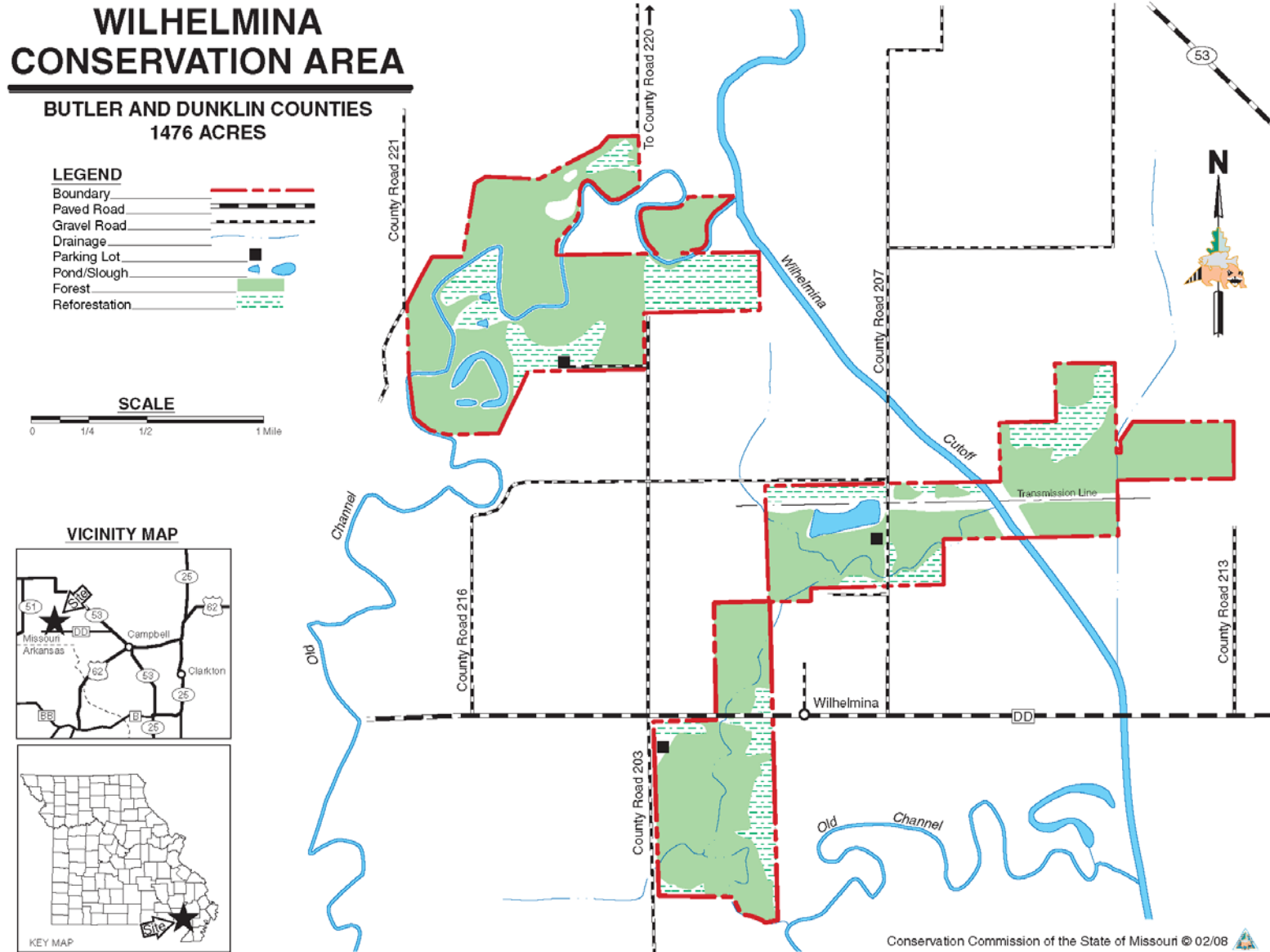


Figure 2: Forest Stand Map

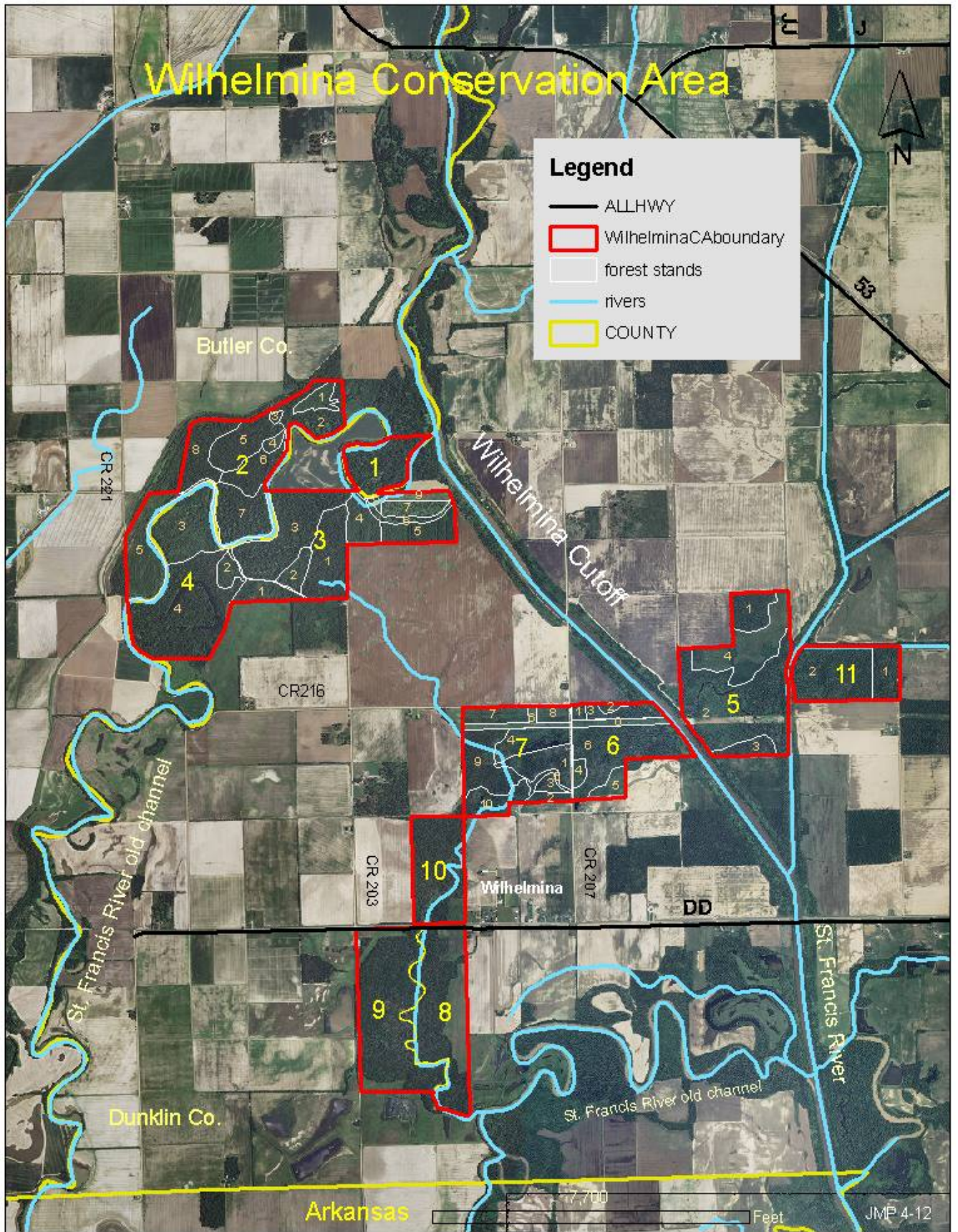
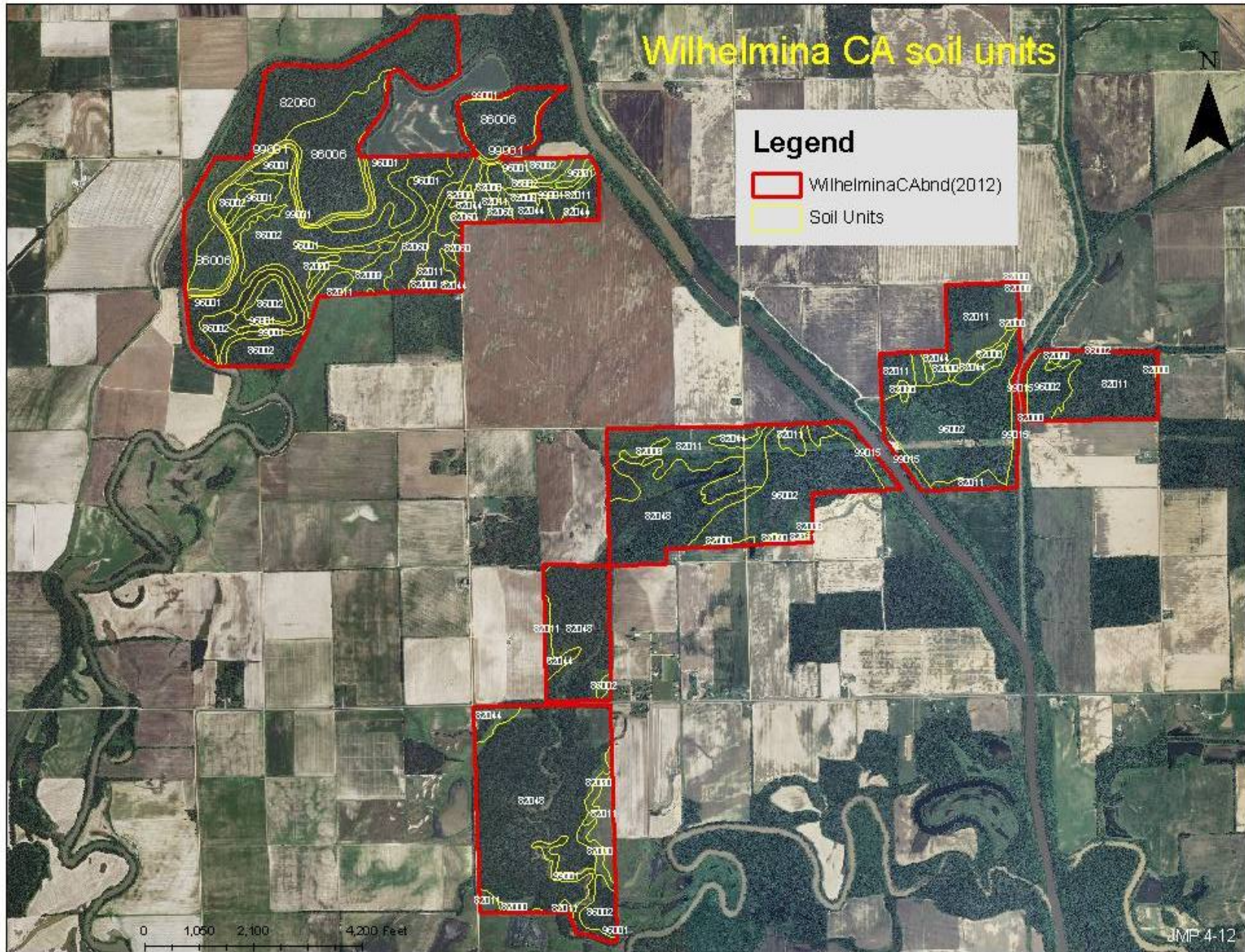


Figure 3: Soil Units Map



Soils Information

A brief description of Wilhelmina CA soil types is given below. These condensed descriptions are included for quick reference. See fig. 3 for the location of the soils found on the area.

Complete descriptions can be found on the internet at

<http://soils.missouri.edu/survey/missouri.asp>.

82060 Calhoun silt loam, 0 to 1 % slopes, ; approximately 140 acres

This soil is formed from loess over silty alluvium and occurs on backswamps and stream terraces. It does not flood nor pond. Available water capacity is high and depth to water table is 0 to 9 inches. It is associated with bottomland trees with a land capability class of 3w.

86006 Adler silt loam, 0 to 1% slopes, occasionally flooded; approximately 119 acres

This soil is formed from silty alluvium and occurs in backswamps. It is occasionally flooded but rarely ponds. Available water capacity is very high and depth to water table is about 24 to 36 inches. It is associated with bottomland trees and has a land capability class of 2w.

99001 Water ; approximately 68 acres

82000 Dubbs silt loam, 0 to 1% slopes,; approximately 53 acres

This soil is formed from silty alluvium on natural levees on stream terraces. It is well drained and receives no flooding or ponding. Available water capacity is very high and depth to water table is more than 80 inches. It is associated with bottomland trees and has a land capability class of 1.

82011 Crowley silt loam, 0 to 1% slopes, ; approximately 252 acres

This soil is formed from silty alluvium over clayey alluvium and occurs in point bars on stream terraces. It is poorly drained, but receives little flooding or ponding. Available water capacity is low and depth to water table is 0 to 15 inches. It is associated with bottomland trees and has a land capability class of 4w.

82044 Foley silt loam, 0 to 1% slopes, ;approximately 60 acres

This poorly drained soil is formed from silty alluvium and occurs in point bars on stream terraces. It is rarely flooded or ponded. Available water capacity is very low and depth to water table is 0 to 12 inches. It is associated with bottomland trees and has a land capability class of 4w.

86002 Falaya silt loam, 0 to 1% slopes, occasionally flooded, ; approximately 147 acres

This somewhat poorly drained soil is occasionally flooded and is formed from silty alluvium in backswamps and flood plain steps. Available water capacity is very high and depth to water table is 12 to 24 inches. It is associated with bottomland trees and has a land capability class of 2w.

96001 Collins silt loam, 0 to 1% slopes, rarely flooded, ; approximately 104 acres

This moderately well drained soil is formed from silty alluvium on stream terraces. Available water capacity is high and depth to water table is 24 to 49 inches. It is associated with bottomland trees and has a land capability class of 1.

82048 Jackport silty clay loam, 0 to 1% slopes, rarely flooded,; approximately 339 acres

This poorly drained soil is formed from clayey alluvium in channels and backswamps on stream terraces. Available water capacity is moderate and depth to water table is about 4 to 12 inches. It is associated with bald cypress, water tupelo, and other bottomland trees and has a land capability class of 3w.

96002 Fountain silt loam, 0 to 1% slopes, ; approximately 210 acres

This poorly drained soil is formed from silty alluvium in stream terraces. It has no flooding or ponding. Available water capacity is high and depth to water table is 0 to 18 inches. It is associated with bottomland trees and has a land capability class.

Figure 4: Drainage Map

