

PRAIRIE FORK CREEK CONSERVATION AREA

AREA PLAN

1998-2008

Central Region Wildlife Division Supervisor

Date

Central Region Forestry Division Supervisor

Date

Central Region Fisheries Division Supervisor

Date

Central Region Protection Division Supervisor

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PRAIRIE FORK CREEK CONSERVATION AREA

AREA PLAN

I. INTRODUCTION AND BASE INFORMATION

A. Official Area Name

Prairie Fork Creek Conservation Area

B. Location

1. County

Callaway

2. Proximity

The area is located 6 miles southwest of Williamsburg. (see Figure 1). Nearby Conservation Areas include, Marshall Diggs, Whetstone Creek, Reform and Danville.

3. Acreage, section, township and range

Prairie Fork Conservation area contains 711 acres in one tract, lying within Township 48 North, Range 7 West and is found in parts of the following sections: 5, 6, 31 and 32.

C. General Area Background Information

1. Donation

The area was donated by Hilda Jones primarily to provide a natural laboratory to be available for teaching the public, especially small children, about wildlife habitat, soils and conservation with the hope that it will be a place where small children can experience the pleasures and excitement of, and stimulate their interest in, Missouri's wildlife and wildlife habitat and natural history. She wants innovative programs of research and teaching in the areas of natural history and conservation. She further hopes and intends for the University of Missouri-Columbia faculty and students will participate in the research. Jones wants to ensure the work they have begun on their farm will continue and their farm will be used to educate Missouri citizenry, especially its youth, in the needs and benefits of natural resources conservation.

2. History

The Pat and Ted Jones farm is located in North Central Callaway County . This 711 acre farm lies within the oak-hickory forest/prairie transition zone. Prairie Forks lies at the southern border of what was once the Grand Prairie, in an area known as Nine-Mile Prairie. The original prairie was quite large and was transected by wooded draws along drainages and steams. About 70% of the land is open and had been row cropped until the early 1990's. The remainder of the land is in forest cover. The area just south of Prairie Fork Creek Conservation Area is the northern most expanse of the Ozark Border Region, an area with large expanse of oak-hickory forest broken only by small prairies, savannas and the Missouri River.

Pat and Ted Jones have made natural resource conservation a lifetime commitment. This is evident by the conservation practices they use on their land as well as their support for conservation actions at the regional, state and national levels. An endowment trust has been created along with the donation that provides funding for research, education and interpretation. The endowment trust income will be managed by a representative from the University of Missouri and the manager of the Prairie Fork Creek Conservation Area.

3. Structures, buildings, facilities

There is a 3 bedroom house, 2 bedroom guest house, barn, two machine sheds, and one grain bin. The two houses are part of the life estate.
(see Figure 2).

D. Management Constraints and Considerations

The donation is subject to the following reservations for Mrs. Hilda P. Jones:

- ◆ A life estate on the main residence, guest house, and approximately one acre surrounding them.
- ◆ An easement for ingress and egress along the driveway from Highway D to the house and guest house.
- ◆ The right to keep horses in the horse barn and to graze horses in the pasture on the north side of the driveway leading to the house, and to mow and harvest the hay in the pasture.
- ◆ The right to cut firewood from the property for her personal use.
- ◆ The right to access all parts of the property for her personal use and for the use of her guests, including the right to mow foot paths and horse trails laid out or approved by the Conservation Commission.

The donor requests that a management plan for the property be developed

in cooperation with an advisory board that should include the donor, the donors representative Mr. Truman P. Young III, a representative at the University of Missouri, and others as the Commission shall deem appropriate. The area will be closed to hunting and fishing until the management plan is completed and approved.

The donor requests that the property be used for conservation education and research, especially research on native plants, wildlife habitat and soils, including any program she may fund. Therefore, management of the property is expected to be labor intensive.

The property has been named the Prairie Fork Creek Conservation Area at the request of the donor.

2. Hazards

No known hazards

3. Cultural Resources

4. Demographics

Over 350,000 people live within a 50 mile radius of Prairie Fork Creek Conservation area. The largest population centers are Jefferson City, Mexico, Fulton, Warrenton and Columbia. Agriculture is the primary land use within a 25 mile radius of the area. In recent years there has been a significant increase in the breakup of the more rugged farms into small acreages owned by absentee landowners. With driving distances of only 70 to 80 miles to the large urban populations of St. Louis and St. Charles Counties, we see this trend increasing.

There are several Colleges and Universities within an hour drive of the area.

E. Acquisition Plan

1. Expansion boundaries. (see Figure 3) The Commission acquires land only from willing sellers and makes annual payments to compensate local governments and schools for lost tax revenues at assessment levels current when acquired. Every effort will be made to address expansion needs without direct purchase.

Expansion of the area is based on the following criteria:

a. Access to Prairie Fork Creeks Conservation Area is a problem on the East side. Tracts adjoining the area on the northeastern and

east side are high priority.

b. Control of the watershed to protect Prairie Fork Creek from degradation. Prairie Fork Creek is home to the Blacknose Shiner and protection of the watershed will ensure the habitat conditions for the Blacknose Shiner are protected and enhanced.

c. Increase the size of the grassland communities to manage for the critical habitat needs for many declining species dependent on grassland communities.

d. Increase the size of the area to allow more public use opportunities.

2. Prioritized Acquisition Units (see Figure 3)

Tract A (313 acres) - Priority 1 - Includes over 300 acres of unplowed native grasslands. Is currently grazed and is in good condition.

Tract B (205 acres) - Priority 1 - Along with tract A. Provides most of the watershed into Prairie Fork Creek. Acquisition of this tract would provide a greater level of protection for the watershed.

Tract C (80 acres) - Priority 1 - Provides access to a gravel road on the East side of the area.

Tract D (223 acres) - Priority 1 - Provides access to a gravel road on the East side of the area and adds a critical stretch of Prairie Fork Creek. Creek banks still have a good woodland corridor, but cattle have access to the creek.

Tract E (301 acres) - Priority 2 - Two existing large lakes will provide significant public fishing opportunity.

D Tract F (85 acres) - Priority 3 - Provides additional access to Highway and adjoins the west side of the area adjacent to the dam of a the larger lake on the area. Addition of this property would provide protection for this lake and add 80 acres of good oak hickory forest.

II. RESOURCE MANAGEMENT

A. Goals and Emphasis

The Prairie Forks Conservation Area will be managed to provide educational and

recreational opportunities associated with its unique natural, cultural, and historical resources; particularly the prairie-savanna landscape. We believe that education and interpretation with a solid research foundation that emphasizes experiential learning is vital to the future of conservation of natural resources. We want to encourage cooperative efforts between educational, governmental and private institutions, to build a foundation of natural resources management that will reach well beyond the confines of this area.

B. Soils

There are nine major soil types that occur on the area, with Keswick loam being the most dominant covering around 390 acres. The following is a description of the most common soils. (see Figure 4 and Appendix A)

10C2-Armstrong loam,

Armstrong loam makes up approximately 25 percent of the northeast portion of the area. This is a prairie soil and is poorly drained. Permeability is slow, and surface runoff is rated medium. This soil tends to be erosive if tilled, but has good productivity for agricultural crops.

15B-Calwoods silt loam,

Located in the northwest part of the area, this soil is poorly drained with slow permeability. The surface runoff is medium. Although a productive soil for agricultural crops, erosion can be a problem. This is a prairie soil suitable for warm season grasses and forbes.

19C2-Gorin Silt loam,

Also occurring in the northwest section of the area, this soil is deep and moderately well drained. Permeability is slow and surface runoff is medium. Well suited for warm season grasses.

22C2&22D2-Keswick loam,

The most frequently occurring soil on the area. Keswick loam makes up approximately 1/3 of the soil types found on the area. Keswick loam is a deep and moderately well drained soil with a slow permeability. Surface runoff is rapid and natural soil fertility is low. Most of the areas where this soil occurs were heavily cropped in the past. The soil is well suited to corn soybean and small grains.

27B-Mexico silt loam

Mexico is poorly drained and has a very slow permeability. Natural fertility is

moderate and is suited for most agricultural crops. Mexico is a prairie soil and is excellent for plantings of warm season grasses and forbes.

29-Landes loam.

This soil is level, well drained with a high permeability. This soil occurs along Prairie Fork Creek and is frequently flooded. Most areas in this soil were used for agricultural crops and is suited for warm season grasses and forbes. Trees suited to these sites are Eastern cottonwood, American sycamore, Green ash, and Black walnut.

49D-Armster cobbly loam.

A moderately well drained soil with moderate permeability. Natural fertility is low. Most areas were used for pasture, hay and or timber. This soil is suited for trees and will support White oak, Black oak and Northern red oak. This soil is also suited for warm season grasses and forbes.

C. Fisheries

The Prairie Fork Creek Conservation Area lies within and drains the southeastern margin of the Dissected Till Plains in association with the Prairie Faunal Region. Pennsylvanian shales and thin sandstones are the principal bedrocks over much of the region. Outcroppings of Mississippian limestones are occasionally found along the lower Missouri River. Generally speaking, there is a transition from north to south and from west to east in stream conditions, with streams to the north and west being less clear and with a greater proportion of sand and silt substrates. Those to the south and east tend to be clearer and often have extensive exposures of bedrock, cobble and gravel in their channels. Most of the streams originate on level uplands underlain by shales and descend into rolling to hilly terrain underlain by limestones. This transition can be seen to some extent on Area streams. Some unnamed first order tributaries and the very upper portion of Prairie Fork Creek have substrates composed of shale, sand, and silt while the lower portion of Prairie Fork Creek is primarily cobble, gravel and some bedrock.

Area streams flow through fairly wide, shallow valleys and have moderate gradients that range from 64 to 210 feet per mile. There are a total of 2.65 stream miles on the Area (USGS topographic map, Williamsburg Quadrangle, revised 1982) representing eight different drainages. Of these drainages, seven are 1st order intermittent streams (1.6 miles) and one is a 2nd order intermittent stream (Prairie Fork Creek, 1.05 miles). Prairie Fork Creek, a direct tributary of the Loutre River, is the largest stream on the Area. Its watershed at the point where it leaves the Area (stream mile 10.9) is approximately 1,166 acres (1.8 square miles)

in size. Prairie Fork Creek has an average gradient on the Area of 64 feet/mile which is fairly typical for headwater streams.

Prairie Fork Creek appears to be a “losing stream” at some locations on the Area, however, it does maintain several permanent pools. These permanent pools support what seems to be a limited, yet fairly diverse fish community. Tributaries to Prairie Fork Creek on the Area have gradients that range from 120 to 210 feet/mile. Accurate measurements of land use practices within Prairie Fork Creek’s watershed are lacking, however, use appears to be similar to that in Callaway County as a whole (Timber Resource of Missouri’s Prairie, 1989). Approximately 20 to 25% of the watershed is forested with the remaining area principally devoted to row cropping and pasture. About 73% of the Area’s pasture and cropland has been converted to old field and native prairie. The remaining land on the Area is forested.

An on-site examination of Prairie Fork Creek and its tributaries during February, 1998 indicated good forested riparian corridors along most reaches of Area streams. There are a few sites, however, where the riparian corridor needs to be widened to meet Forest Land Management Guidelines (1986) or Fisheries Guidelines for Stream Side Management Zones (1997). Only a few minor bank stability problems were encountered on Prairie Fork Creek and its tributaries. No serious evidence of stream degradation was found on the Area. In fact Area stream health is excellent compared to most other streams in the region. This quality habitat is probably responsible for Prairie Fork Creek being able to support the state-listed rare blacknose shiner. Blacknose shiners were first sampled in Prairie Fork Creek by MDC Ichthyologist William L. Pflieger in 1961 (Pflieger, W. L. 1971). Recent sampling done by MDC staff in 1992 (Pflieger), 1994 (Bruenderman and Pflieger, Bruenderman and Faiman), and 1995 (Bruenderman and Faiman, Faiman and Leach) revealed a rapid decline in the range of the blacknose shiner in Missouri. Loss of suitable habitat is thought to be the predominant reason for their decline. The last remaining strongholds for this rare species are the headwater streams of Auxvasse Creek and Loutre River. Therefore it’s essential that Area management include protection of the blacknose shiner. This will help ensure its continued existence in Missouri. Other local streams where blacknose shiners have been collected in the past include Whetstone Creek (1961, 1977, 1992, 1997,), Fonso Branch (1961), and Dry Fork Creek (1962, 1992).

Prairie Fork Creek’s fish community appears to be characteristic of Prairie headwater streams having diverse habitat and good water quality. Recent fish sampling (1997) done by University of Missouri students revealed the presence of blacknose shiners on the Area (see Appendix C). Other species collected included creek chub, spotted bass, yellow bullhead, green sunfish, bluegill, hybrid sunfish, orangethroat darter and suckers (not keyed to species). The only species verified to date, however, has been the blacknose shiner. The fish fauna in Area

streams is expected to be similar to other headwater Loutre River basin streams such as nearby Whetstone Creek, Clarks Branch, and Fonso Branch. Fish species taken during sampling in these streams included, largemouth bass, white sucker, black bullhead, green sunfish, bluegill, longear sunfish, central stoneroller, red shiner, western redbfin shiner, bleeding shiner, bigeye shiner, sand shiner, creek chub, blacknose shiner, southern redbelly dace, northern studfish, brook silverside, bluntnose minnow, and the Ozark minnow (see Appendix D-F).

Lentic (Ponds) Resources

There are 20 small ponds and one wetland on the Area (see Figures 5 and 6). Most of the ponds are less than $\frac{1}{4}$ acre, however there are five larger ponds (P2, P5, P6, P13, and P20) which range in size from 2 to 7 acres (see Figure 5). Total acreage for all Area impoundments is approximately 25 acres. The wetland is about $\frac{1}{2}$ acre and is located just northeast of the house near Prairie Fork Creek. This man-made wetland was constructed sometime during the 1980s. The five largest ponds are the most suitable for establishing or maintaining quality fisheries. As a result, most future management effort will be directed toward these ponds. Even though Area fishing opportunities are limited, the larger ponds will provide some angling for the general public and/or special user groups. These ponds will also be very beneficial for research and education purposes.

All Area ponds were built or physically renovated sometime after 1955 (personal communication with Mrs. Jones). Most of the larger ponds have been built fairly recently. Ponds P13 and P20 were constructed in 1995; pond P2 was built in 1991; pond P5 was constructed in the early 1980s; and pond P6 was built during the early 1960s. All Area ponds, with the exception of a few smaller ones, were stocked with fish. Largemouth bass, bluegill, and channel catfish combinations were stocked in most ponds, however, a few ponds also received redear and hybrid sunfish. Pond P6 was originally maintained as a channel catfish only pond until it had to be stocked with largemouth bass and bluegill to control catfish recruitment. Pond P7 was stocked on a fairly frequent basis with channel catfish and hybrid sunfish and maintained primarily for kids fishing.

Very little fish community information has been collected for any of the ponds so their status is yet to be determined. As a result, inventory work will be a high priority for University and Department staff. Some fish sampling has been done by University students in a few Area ponds but results have not been verified or summarized. Most of the ponds sampled by the students contained at least one or more of the following species: largemouth bass, bluegill, channel catfish, green sunfish, and hybrid sunfish. A more thorough sampling of all Area ponds may reveal the presence of additional species.

Tract Statistics

- 5 fishing ponds totaling 18 acres
- 15 wildlife ponds totaling 7 acres
- 1 wetland area totaling 0.5 acre
- 2.65 miles of 1st and 2nd order intermittent streams

Special Features

- Prairie Fork Creek

Fisheries Goals

- 1.) Manage the Area to enhance biodiversity and ecosystem integrity.
- 2.) Provide for a broad range of research, recreational and educational opportunities compatible with Goal 1 and the Prairie Fork Conservation Area's mission and goals.
- 3.) Conserve and enhance the existing aquatic resources and provide high quality angling opportunities which are compatible with resource capabilities and public need.

Aquatic Resource Management

Whenever possible, Area aquatic resource management will be coordinated with approved research, educational, and recreational projects.

FISHERIES OBJECTIVES and STRATEGIES NATURAL RESOURCES

Lentic Resources

Objective 1:

Inventory all permanent lentic resources to collect baseline data and determine status and fisheries potential by the end of FY 00. All biotic and abiotic information necessary for pond management will be collected in cooperation with University staff to avoid duplication of effort. Inventorying will include the gathering of various physical, chemical and biological data.

Strategies:

1.1 Sample fish communities in all ponds by boat or back pack electroshocker, seine, gill net, hoop net, or trap net according to Fisheries Management Standardized Sampling Guidelines or guidelines established in “Characterization of Aquatic Resources of the Jones Farm/Prairie Forks Conservation Area” (Hayward, R.S. and Noltie, D.B. 1996).

1.2 Cooperate with University staff to collect physical measurements on pond surface area, basin morphometry, littoral area, inflow/outflow patterns, flooding, drying, aquatic vegetation, substrates, and siltation. This information will be used to evaluate physical status and determine appropriate management direction.

1.3 Cooperate with University staff to collect chemical data for pond water quality assessments. This would include gathering the following information: temperature and dissolved oxygen profiles, conductivity, alkalinity, pH, nitrogen, phosphorous, secchi disc readings and chlorophyll *a*. Water, substrate, fish and invertebrates will be collected for contaminant analysis if deemed necessary. Data collected will be used to evaluate conditions and determine appropriate management direction.

Objective 2:

Establish and maintain quality fisheries in the five largest Area ponds (P2, P5, P6, P13, and P20; see Figures 5 and 6) by FY 00. These fisheries will provide quality angling opportunities for special events, kids fishing clinics, and the general public.

Strategies

2.1 Adopt statewide fishing regulations for any fishing done on Area ponds.

2.2 Monitor fish communities in Area fishing ponds, as needed, based on their designation as priority 3 impoundments under the Fisheries Management Standardized Sampling Guidelines.

Objective 3:

Provide and maintain suitable habitat for aquatic life in all Area ponds by FY 03.

Strategies:

3.1 Reestablish and maintain aquatic plants in Area ponds lacking vegetation. Only suitable, native aquatic vegetation should be transplanted in ponds or wetlands.

3.2 Monitor aquatic vegetation on a periodic basis and control plant growth when appropriate. Aquatic plants in ponds P2, P5, P6, P13, and P20 should be maintained so coverage does not exceed 20-25% of the pond's basin or surface area. Appropriate chemical or biological methods will be used depending on time of year, plant coverage and plant species being controlled. Aquatic plant management will be coordinated with any approved research project.

3.3 Establish and/or maintain hard cover in all Area ponds for fish, reptiles, amphibians and invertebrates. Brush piles will be created by using hardwood, cedar and Christmas trees and installed at a rate of 2-3 small brush piles per surface acre of water.

3.4 Small ponds with undesirable fisheries will be chemically renovated and maintained fishless for amphibians, reptiles and other wildlife. Management of these ponds should be done based on recommendations provided in the publication "Amphibian and Reptile Management on Conservation Department Impoundments" (Johnson, T.R. 1994).

Objective 4:

Minimize impacts of Area impoundments on Prairie Fork Creek to provide quality blacknose shiner habitat by FY 05.

The decline of the blacknose shiner is probably due to a number of factors related to land use, including destruction, degradation and fragmentation of habitat, siltation, reduced water quality, tributary impoundments, and reduction of base flows. These habitat alterations may be caused by intensive agriculture, urbanization, logging, and highway construction.

Construction of watershed impoundments and reduction of base flows resulting from irrigation have also contributed to their decline. Watershed impoundments serve as a source for colonization of stream pools by predators. Creation of watershed impoundments also has a negative effect on stream hydrology. As water is trapped in the impoundments, runoff is impeded which does not allow downstream flushing and maintenance of pools that this species requires.

Strategies:

4.1 Minimize new construction and physical renovation of impoundments in the Prairie Fork Creek watershed.

4.2 Encourage the use of terraces, dry ponds, grass waterways, wetlands, etc. on the Area instead of conventional silt basins or ponds to reduce erosion and improve water quality but still allow for more natural runoff.

4.3 Limit the introduction of predatory fish in Area ponds and eliminate fish from

ponds no longer capable of supporting desirable fish communities. There should be no maintenance stocking of channel catfish in Area ponds.

4.4 Drain aging impoundments that no longer support desirable fish communities or convert them to wetlands.

4.5 Educate landowners and the general public about the adverse impacts impoundments are having on streams in the basin, and the impact introduced fish are having on blacknose shiners.

Lotic (Streams) Resources

Objective 5:

Inventory all biotic stream resources to collect baseline data and determine status by FY 99. Monitor streams until FY 16 to collect adequate abiotic (hydrology, channel morphometry, etc.) baseline data. All biotic and abiotic information necessary for stream management, education and research will be collected in cooperation with University staff to avoid duplication of effort. Inventorying will include gathering various physical, chemical and biological data.

Strategies:

5.1 Sample fish populations in Prairie Fork Creek and its tributaries to determine diversity and abundance. All sampling protocol must be approved by the Area planning committee. This procedure has been established to protect the state-listed rare blacknose shiner which has been found on the Area in Prairie Fork Creek.

5.2 Monitor the stream fish community by sampling every 3 years or more often if needed.

5.3 Cooperate with University staff to collect physical measurements on stream characteristics: surface area, channel morphometry, hydrology, substrate, sediment transport, instream flow, and watershed land use practices.

5.4 Cooperate with University staff to collect chemical data for stream water quality assessment. This would include gathering the following information: dissolved oxygen profiles, conductivity, alkalinity, pH, nitrogen, phosphorus, secchi disc readings and chlorophyll *a*. Water, substrate, fish, and invertebrates will be collected for contaminant analysis if deemed necessary.

5.5 Complete inspection of all Area streams using the Stream Habitat Annotation Device. Report watershed and stream erosion problems to the Area administrators. Develop management recommendations for Area streams with erosion problems.

Objective 6:

Protect, enhance and maintain Area stream resources.

Strategies:

6.1 Purchase land to the north, east, and south of the Prairie Fork Creek Conservation Area (see Figure 3) as it becomes available to protect and enhance the Areas stream resources. Highest priority should be given to acquiring land to the north and east of the Area. Increasing public ownership along Prairie Fork Creek and within its watershed will help maintain water quality.

6.2 Consider the construction of small wetlands near Prairie Fork Creek to help maintain base flows. Consult with MDC and NRCS personnel to see if additional wetland sites are warranted and feasible. Location, design and construction of wetland areas must receive final approval from the NRCS, Area administrator, and planning committee.

6.3 Work with MDC and DNR staff to upgrade Prairie Fork Creek's NPDES waters of the state status to outstanding.

6.4 Cooperate with University staff to identify any possible point and non-point pollution sources (sewage treatment systems, agriculture and road chemicals, pipelines, sedimentation, etc.).

6.5 Increase public awareness of Area stream resources and the need for wise management practices.

6.6 Monitor, identify and prioritize the worst cases of stream bank erosion and target them for stabilization projects that will reduce erosion to acceptable levels.

6.7 Encourage Wildlife, Forestry, Protection, Education, Natural History and other Area personnel to report any future stream-related problems to appropriate Fisheries staff.

6.8 Facilitate the adoption of Prairie Fork Creek and the Loutre River Basin by Stream Teams and encourage Stream Teams and the University to participate in water quality monitoring.

6.9 Encourage and facilitate the implementation of MDC and University stream

habitat- based research and teaching projects. Stream habitat research will be a key to protecting and enhancing Area blacknose shiner habitat.

D. Forestry

Prairie Fork lies on both the Glaciated plains and the Ozark Border Divisions and therefore has a diversity of native vegetation. In addition to this, there is also an abundance of exotic plants many of which are invasive. Extensive farming, livestock operations, wildlife plantings, fire control and other activities since settlement have impacted and changed the forest and other native vegetation. Currently there is a mixture of disturbed oak-hickory and early successional forest mainly in drainage areas. Most forest cover on the area occurs on soils that also supported mainly forest or perhaps savanna prior to settlement. A minor amount of forest cover occurs on prairie soils. There is good potential for savanna-like conditions to be managed for on the area. Traditional forest management in drainage areas will be somewhat limited due to water quality and wildlife considerations. There is ample opportunity to increase native plant habitat by means of exotic plant removal.

Forestry Goal:

Manage the forest resource on the area to improve forest health and vigor, increase species and ecosystem diversity, provide for regeneration of desirable species and to provide both research, teaching, training and recreation experiences for area users and managers.

Objective 1:

Integrate existing baseline forest inventory information into a compartment inventory and management system and schedule.

Strategies:

1.1 Develop forest management compartments and include them in the regional inventory schedule beginning in FY99.

1.2 Cooperate with the University to coordinate existing inventory data with future inventories and prescriptions.

1.3 Complete stand mapping and stand level inventory for management compartments according to the compartment inventory schedule by FY 03.

1.4 In cooperation with Wildlife Division, summarize past management effects and management prescriptions within three months of the completed inventory.

1.5 Implement management prescriptions within 1 year of completion of the inventory.

1.6 Coordinate all compartment level summaries with Wildlife Division, Fisheries Division and include Natural Features Inventory data if available or Natural Heritage Database information.

1.7 Include the Stewardship Program, the Stewardship Incentive Program, and any other applicable program, grants or funding as part of the cooperative neighbor program on Prairie Fork by promoting and offering information on these programs to the adjoining neighbors.

1.8 Provide technical assistance to all neighboring landowners including plan writing services on a request basis.

1.9 Designate old growth stands based on stand data, location, the potential for old growth blocks and in cooperation with Natural History and Wildlife Divisions.

Objective 2:

Coordinate all forestry research efforts with ongoing and/or routine forest management practice to avoid conflicts and to optimize benefits for the forest resource on the area and for research needs.

Strategies:

2.1 Coordinate with the area manager at least semi-annually regarding fiscal year work plans and university research proposals.

2.2 Include a research coordination section in all compartment coordination summaries.

2.3 Investigate the possibility of designating certain areas or compartments as specifically research- oriented to provide for future research needs and requests by FY 99.

2.4 Develop general guidelines for those writing research project proposals which will help them to integrate their research into existing management by FY 98.

2.5 Solicit University researchers to provide similar guidelines for routine forest management to be integrated into future research needs.

Objective 3:

Demonstrate forest management practices which represent the current best best management practices for the resource.

Strategies:

3.1 Interpret management practices by using appropriate signage and by including managed areas in tours and programs on the area.

3.2 Develop demonstration sites of forest and/or agroforest management practices of interest specifically for public display and interpretation by FY 05.

Objective 5:

Provide for the protection and enhancement of the existing Prairie Fork Creek ecosystem and riparian corridor in all forest management practices.

Strategies:

5.1 Follow MDC's Forest Land Management Guidelines (1996) concerning riparian corridor management. Establish and/or maintain at least a 50 ft. Wide wooded corridor on each side of all Area streams. Timber cutting within the riparian corridor should be done according to Forest Land Management Guidelines.

5.2 Conduct inspections of the riparian corridor with the Area manager to identify all problem areas and look for demonstration sites.

5.3 Restore tree, shrub and/or native grass cover in highly erodible areas within the watershed and along stream frontage where inadequate through natural regeneration and /or planting.

5.4 Plan future public use facilities (privies, parking lots, etc.) So they are located outside of and have minimum impact on the riparian corridor.

Other Objectives:

- Examine exotic woody plant issues on the area and develop means of control that are compatible with objectives, public use and the mission of the area.

- Maintain the life estate in the Tree Farm program in cooperation with Mrs. Jones (and with the approval of the Tree Farm Committee as the size of the Tree Farm has been reduced).

E. Natural History:

Goals:

1. Conserve and manage PFCCA to perpetuate and enhance the biological diversity and ecological integrity of the area.
2. Educate the public on the topic and value of biological diversity and natural resources conservation.
3. Develop an innovative research program focusing on the restoration of the area's native prairie and savanna landscape.
4. Allow for nature-based recreation that enhances natural resource education without compromising the resource.

Objectives:

Objective 1.

Restore and or reconstruct 100 acres of prairie natural communities on sites that historically supported prairies utilizing local prairie flora ecotypes as practical.

Strategies:

- 1.1 Identify which sites (mainly on Mexico, Armster, and Armstrong soil series) to establish prairie and determine a management schedule.
- 1.2 Identify local seed sources, including Tucker Prairie, within 100 miles of PFCCA.
- 1.3 Establish a forb seed nursery of native forb ecotypes on PFCCA.
- 1.4 Plant prairie in manageable units (10 acres) so as to establish quality reconstructions.
- 1.5 Implement a prescribed burning program to reduce fescue and enhance native prairie flora.
- 1.6 Identify possible herptile and insect species to reintroduce to the area after an inventory of these is completed.

Objective 2.

Restore and or reconstruct 50 acres of savanna natural communities on appropriate sites.

Strategies:

2.1 Identify appropriate sites, favoring those with an established overstory of oak and hickory.

2.2 Implement a prescribed burning and tree removal program to reduce the understory by 80% and promote native prairie/savanna flora.

Objective 3.

Restore and or reconstruct 10 acres of ephemeral marsh wetland natural communities on appropriate sites.

Strategies:

3.1 Construct low-berms, stop-log structures, and other features to create seasonal wetlands.

3.2 Interseed local ecotypes of wetland plants to enrich the established wetlands.

Objective 4.

Promote a prairie/savanna landscape to surrounding landowners.

Strategies:

4.1 Offer technical assistance to surrounding landowners.

4.2 Target surrounding landowners with appropriate cost-share assistance.

Objective 5.

Manage PFCCA as a prairie/savanna landscape to enhance populations of the following grassland and savanna birds known to have occurred on the area: upland sandpiper (state Watch-list), eastern meadowlark, grasshopper sparrow, Henslow's sparrow (state Rare), field sparrow, dickcissel, loggerhead shrike (state Watch-list), and Bell's vireo (state Watch-list).

Strategies:

5.1 Manage a variety of prairie and savanna successional stages to provide critical habitat components of the above bird species.

5.2 Provide some native shrub habitat for Bell's vireos, field sparrows, and loggerhead shrikes.

5.3 Burn landscapes to allow for "patchy" burns that will allow late-successional prairie and thatch for Henslow's sparrow as well as insect refugia.

Objective 6.

Manage PFCCA as a prairie/savanna landscape to allow for possible reintroduction or reuse of the area by the greater prairie chicken (state Rare).

Strategies:

6.1 Develop a 500 acre block of open prairie landscape with the assistance of surrounding landowners and additional purchases in the expansion boundaries. Note that a 2000 acre block will be required before we can consider developing a viable prairie chicken population.

Objective 7.

Remove and manage the spread of exotic plants as appropriate.

Strategies:

7.1 Research and control particularly noxious exotic species, i.e., *Sericea Lespedeza*, Autumn Olive, *Multiflora Rose*, and *Eurasian Fescue*.

7.2 Maintain pine plantations for songbird habitat purposes.

F. Wildlife

The diversity of wildlife is common to the mid-Missouri region. The area has an abundant deer population with good populations of turkey, raccoons, opossums, rabbits, squirrels, quail, woodcock and a variety of song birds (see Appendix B). Prairie Fork Creek Conservation Area is home to two state listed bird species, Bell's vireo and the Henslow's sparrow. Bell's vireo prefer early successional stage savanna and Henslow's sparrow prefers tallgrass prairie.

WHAG (wildlife habitat appraisal guide)

SPECIES	EXISTING INDEX	PLANNED INDEX
White-tailed Deer	.85	.85
Eastern Wild Turkey	.85	.85
Bobwhite Quail	.81	.90
Prairie Chicken	.58	.75
Cottontail Rabbit	.73	.85

Goals:

1. Increase wildlife diversity by restoring and maintaining natural plant communities.
2. Provide key habitat components for maintaining a population of both the Bell's vireo and the Henslow's sparrow.
3. Apply and demonstrate resource management techniques that can adapt to changing landscape conditions and will meet resource management goals.

Objective 1:

Restore the prairie/savanna/ozark border interface on 70 % of the area..

Strategies:

- 1.1 Reestablish and manage 200 acres of diverse warm season grass/forb plantings on sites that were historically prairie.
- 1.2 Renovate 100 acres of fescue pasture and convert to native warm season grass/forb plantings.
- 1.3 Restore 100 acres of savanna through the use of prescribed fire and selected forest management practices.

Objective 2.

Eradicate or control non-native vegetation, excluding two pine plantations which are non-invasive and provide a unique migration

habitat for songbirds.

Strategies:

2.1 Convert 100 acres of fescue to native vegetation by Fy 2003

2.2 Spray 25 acres of Sericia Lespedeza by Fy 2003

2.3 Use mechanical, fire, and chemical on 2 miles of Autumn Olive fencerows

2.4 Use rowcropping of agricultural crops for at least two years before converting Sericia Lespedeza infested fields to native vegetation on 25 to 50 acres.

Objective 3.

Develop a cooperative neighbor program to enhance habitat on adjoining lands.

Strategies:

3.1 Hold a adjoining neighbor workshop to identify areas of concern and cooperative management opportunities. By Fy 2000

3.2 Set up a cost share program using Endowment Trust funds to implement management practices on adjoining land that will enhance area objectives.

Objective 4.

Provide Food sources for upland and woodland species of wildlife.

Strategies:

4.1 Plant annually 30 acres of food plots to provide emergency winter food for wildlife, and to lesson crop damage to adjoining row crop farmers.

Objective 5.

Adopt adaptive management as a guiding principle on Prairie Fork Creek Conservation Area.

Strategies:

5.1 Monitor management practices to allow managers to adapt to responses in vegetation and animal numbers.

5.2 Demonstrate practices which represent the current best management practices for the resource.

G. Education and Interpretation

Goal:

Raise the awareness and knowledge of Conservation among students and teachers of Missouri.

Objective 1.

Develop educational programs that will give students and teachers hands on experience in conservation.

Strategies:

1.1 Education Consultant to coordinate and develop continuing education programs for teachers, student interns, youth leaders and volunteers, including workshops, training sessions and credit courses.

1.2 Educational Consultant will coordinate with area manager to develop programs that will meet school needs.

Objective 2. Develop an assessment tool to determine the effectiveness of educational and interpretive programs.

Strategies:

2.1 Develop brochure of the area that guides visitors to the unique Natural Communities by FY 99.

2.2 Develop a teachers guide package with pre and post visit materials to the area that will help teachers use the area for education by FY01.

2.3 Conduct a survey of schools within a 50 mile radius to determine program needs and facilities by FY 99.

Objective 3. Develop interpretive programs that show the uniqueness of the area and its many different Natural Communities.

Strategies:

3.1 Develop an outdoor classroom including an amphitheater by FY00.

3.2 Develop signs for an interpretive trail, including the development of a Kiosk at trail head.

H. Research and Monitoring

Goal

To provide a research component to the management of the Prairie Fork Creek Conservation area, that will provide information to the area users as well as to managers that will lead to a better understanding of varied management practices, natural community systems, and the methods of interpretation.

Objective 1.

Develop baseline inventory information.

Strategies:

1.1 Research activities should provide annual reports to area manager.

1.2 Researchers should coordinate activities and reporting procedures with designated area representative.

Objective 2.

Monitor current management practices and research proposals to avoid area use conflicts and adverse affects on the resource.

Strategies:

1.1 Develop research guidelines by FY 00

Objective 3.

Develop and monitor new management practices.

Strategies:

3.1 Cooperate with research groups and universities to develop new management practices that provide a better understanding of natural communities.

3.2 Develop research proposals that help support and implement adaptive management principals.

III. PUBLIC USE MANAGEMENT

Provide public usage of the area that insures compatibility of land use with educational and recreational needs.

A. Zoning

Area is currently in agriculture and there are no known zoning restrictions.

B. Public Access

Goals:

Objective 1. Provide safe public access to the area.

Strategies:

1.1 Construct three parking lots and connecting roads to Highway D. Two of the parking lots will be for 6-10 cars and the third lot to be constructed for school bus parking.(figure5)by FY 99

1.2 Construct a 6 mile trail system, including a 0.5 mile disabled user interpretive trail and 3 longer loop trails. by FY 02

Objective 2. Provide safe and comfortable learning environment for visitors to the area.

Strategies:

1.1 Construct disabled user restroom facilities for the bus parking lot. by FY 00

1.2 Convert 2 bedroom house to a meeting facility with office/lab in the back and general interpretive area in the front. by FY 08.

IV. REGULATIONS- Objectives:

Objective 1. Provide quality outdoor recreation and uses compatible with the focus of the area and the resource base.

Strategies:

- while
- 1.1 Public use will be limited to special hunts and special use permits the life estate is in effect.
 - 1.2 Statewide regulations for harvest of area ponds and streams.
 - 1.3 No seining of area streams for bait.

Objective 2. Develop area regulations that will insure compatibility between user groups.

Strategies:

- 2.1 By request of donor no horseback or bike trails.

V. PROGRAM IMPLEMENTATION

A. Development Cost by Project

Proj . no.	Description of Project	Cost	FY
1.	Construct one disabled user accessible privy	\$10,000	1999
2.	Construct two six car parking lots	3,000	2000
3.	Construct one bus parking lot	3,000	1999
4.	Construct 0.5 mile disabled user interpretive trail	30,000	2000
5.	Construct six miles of hiking trails	3,000	2000
6.	Construct Outdoor Classroom	3,000	2000
7.	Construct Interpretive Kiosk at Bus Parking Lot	2,000	2001

8.	Sign and boundary marking	1,000	1998
9.	Steam eroision control demonstration	2,000	2000
10.	Add lockable storage area to machine shed	2,000	1999
11.	Remodel two bedroom house into meeting/lab facility	20,000	2008
	Total	\$79,000	

B. Anticipated Annual Operating Costs

Job Description	Man Days	Equip. Hrs.	Materials Cost
Contract Mowing	8	10	\$2,000
Planning/Administration	25		0
Fencing Agreements	2		500
Food Plot Management	16	16	3,000
Litter Removal	6		250
Building Maintenance (During Life Estate)	6		500
Equipment Maintenance	12		800
Site Adminitration	12		2,000
Prairie Restoration (10 ac. per year)	3	8	2,000
Totals	90	34	\$11,050

Annual operating cost/acre \$ 15.54

APPENDIX

