

WILDERNESS MANAGEMENT PLAN  
CRAB ORCHARD NATIONAL WILDLIFE REFUGE  
CRAB ORCHARD WILDERNESS

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## Wilderness Management Plan

### I. Introduction

Crab Orchard National Wildlife Refuge was established by an Act of Congress on August 5, 1947. The Act specified that the 43,000 acre refuge would be used to benefit wildlife, recreation, agriculture, and industry.

The northern two-thirds of the Refuge has been glaciated, and the gently rolling land provides excellent habitat for migrating Canada geese and other waterfowl. The southern one-third of the Refuge was never glaciated. Inasmuch as the steep slopes precluded suitable habitat development for waterfowl, the area was designated as a public use area with group camping around Little Grassy Lake (Exhibit 1). Both Little Grassy and Devils Kitchen lakes were open to fishermen, and hunters walked the surrounding hills in search of squirrels, rabbits and quail. Bird watchers and other non-consumptive users enjoyed the area also.

The Wilderness Act of 1964 directed federal agencies to study every roadless area of 5,000 acres or more or of sufficient size as to make practicable its preservation and use in an unimpaired condition. The studies were to determine the suitability of each such area for inclusion in the National Wilderness Preservation System. In meeting this responsibility the U. S. Fish and Wildlife Service conducted a full and comprehensive study of Crab Orchard Refuge. The study concluded that a 4,050-acre area lying generally to the south of Devils Kitchen and Little Grassy lakes met the criteria for wilderness classification. Public Law 94-557, enacted on October 19, 1976, officially designated the area as the Crab Orchard Wilderness.

### II. Description of the Wilderness

Detailed descriptions of the topography, geology, soils, cover types, etc. can be found in the Master Management Plan for Crab Orchard Refuge, the Wilderness Study Summary, and the Environmental Impact Assessment for the Crab Orchard Wilderness designation. The impact of wilderness areas on the National Refuge System is covered in the Environmental Impact Statement for operation of the System.

Before the settlers arrived in southern Illinois a stand of upland hardwoods covered most of the Wilderness. Settlers began clearing the land in the mid-1800's, and the land was over-grazed, over-cropped, and repeatedly burned until 1937. At that time the Soil Conservation Service began management of many abandoned farms. Some of the conservation practices employed by the SCS included planting short-leaf and loblolly pines and black locust to stabilize the eroded soils. More than 600 acres of plantations still exist in the Wilderness and are now 40 years old (Exhibit 2). Nearly 2,000 acres of natural hardwood forests cover the steep slopes and are recovering

from past abuses. Approximately 1,500 acres of brushlands with small grassy openings are found on the ridgetops that earlier supported farm fields. Old foundations, wells and other remains of farmsteads are still evident to the inquisitive eye. Old township roadbeds serve for hiking throughout the Wilderness and connect with trails on Shawnee National Forest and other lands to the south and east.

After the Fish and Wildlife Service assumed responsibility for the area in 1947, wildlife management practices consisted of maintaining two food plots, burning a small area and developing six small wildlife ponds of less than one-half acre each. The Service conducted one hardwood sale and sold several locust posts. The Job Corps cleared approximately 60 acres to the east of Rocky Comfort Road on the northern boundary and planted it to white oak. Seedling survival was poor, and the cleared area has reverted to brushlands.

Rocky Comfort Road divides the Wilderness into two units -- the Devils Kitchen Unit to the east with 2,404 acres and Little Grassy to the west with 1,646 acres. The road continues north to major east-west roads and south into the Shawnee National Forest giving access to scattered farms. Traffic on the road is moderate to light during weekdays and becomes rather heavy on weekends. An asphalt road, Loop 9a, lies within the Wilderness boundary west of Devils Kitchen Lake.

An Adirondack shelter constructed by a YCC crew is located just south of Line 9a. Evidence of temporary campsites can be found in several places in the Wilderness.

Three arms of Devils Kitchen Lake penetrate deeply into the Wilderness, and Little Grassy Lake bounds the north and west sides of the Little Grassy Unit. Both lakes are man-made impoundments and, therefore, were excluded from the Wilderness designation.

Southern Illinois University owns an 80-acre tract within the Little Grassy Unit of the Wilderness (Exhibit 1). The school maintains the tract as a de facto wilderness for purposes of scientific study with no developments permitted. Access is under permit by foot or horseback along existing trails. The University also owns two smaller tracts of one and four acres within the Unit. The Fish and Wildlife Service and the University are in the final stages of completing a land exchange which would give title of the inholdings to the Fish and Wildlife Service. The Service will also assume ownership of an area south of the Wilderness. This land exchange should facilitate access control from the south and help protect the integrity of the Wilderness.

The flora and fauna of the Wilderness are quite diverse. A study by Mohlenbrock, et.al. (1960) listed 573 species of vascular plants in the Devils Kitchen Lake Area. Refuge lists of vertebrates contain 240 species of birds, plus 23 "accidentals", 34 species of mammals, 18 amphibians and 27 reptiles. Most of these species are found in the Wilderness. The bobcat,

squirrel, pileated woodpecker, and other animals associated with native hardwood forests will benefit from maintenance of this area in a wilderness condition.

The Hosmer, Wellston, and Zanesville silt loam soils covering much of the area are highly susceptible to erosion when disturbed and are not suitable for development for intensive public use.

### III. Management

Active management practices for wildlife such as timber harvest, burning and food plot maintenance are no longer conducted in the area. Generally, wildlife management is now limited to public hunting, law enforcement, and wildlife surveys. As woody vegetation encroaches on the existing grasslands and other openings on the ridgetops, small burns may be desirable to maintain these openings for turkey poults and other wildlife. Although no wilderness burn units were identified in the Fire Management Plan for the Refuge, the openings should be examined prior to writing the next segment of the Fire Plan. Hand tools would be used in constructing temporary fire breaks and in conducting the burns. Fire is a natural force that has impacted on the area prior to the advent of civilized man.

#### A. Wilderness Identification and Access

Inasmuch as monies were not appropriated for the administration of the Wilderness, and personnel could not be hired for managing the Wilderness (Title 50 of the Federal Code of Regulations), the work needed to bring the area up to wilderness standards has been slow.

A survey of 128 Wilderness visitors (Reeder 1977) during the summer of 1977 showed that 35 percent of the visitors were not aware that they were in a designated wilderness. Only 41 percent responded that they knew the area was administered by the U. S. Fish and Wildlife Service. These results clearly indicated a need for identification of the Wilderness boundary.

Another study by a group of forestry students (Drechsel et.al., 1977) made several recommendations including posting the boundaries, barricading several access points, and displaying special regulations at the remaining access points. Following this study, roads 9a and 17 (Exhibit 1) were effectively barricaded. Attempts to block some of the southern access points have met with limited success.

During the summer and early fall of 1978, the boundaries were posted with 75 plastic wilderness and 24 plastic vehicles prohibited signs. Approximately 25 percent of these were damaged or destroyed shortly after posting and were replaced in November 1978.

There is a clear need for the posting of a wilderness map and wilderness regulations at the four major access points. Display boards will

be constructed of vandal-resistant materials. The boundary signs and access point display boards will be maintained as necessary to protect the integrity of the Wilderness. Wilderness regulations will also be displayed at the three boat launch sites on Devils Kitchen Lake.

Gaining adequate control of access to the Wilderness is an extremely difficult task. Devils Kitchen Lake provides access by boat along nine miles of shoreline, and Little Grassy Lake has nearly seven miles of shoreline bordering the Wilderness. Two and one-half miles of hard surface roads border the Wilderness, and one mile of hard surface road bisects the Wilderness. In addition, access points in the form of old road beds and trails enter the Wilderness from the south and east.

The only access points that are considered serious problems at this time are the old road beds and trails from the south and east. These points are very remote and can be reached only by crossing Forest Service, Southern Illinois University, or private land. Some of these access points are located on ridgetops in old farm fields and are difficult to block because of the open terrain. A temporary solution would be to block these access points by fencing, placing barricade posts across openings, felling trees and planting trees. Enforcement must be stepped up to discourage trespass by operators of off-road vehicles.

Pending land trades with Southern Illinois University and declaration of Forest Service lands as roadless areas (RARE II) would make the control of off-road vehicle trespass much easier. These proposed actions would allow blocking of several trails before they reach the Wilderness.

#### B. Restoration

The biggest job in restoring the Wilderness will be the removal of Road 9a. This work is planned for Fiscal Year 1980. The job will require the use of motor graders, dump trucks, loaders, tractors and disc to complete the work as quickly as possible. The asphalt will be broken up and buried. The exposed road bed will be seeded with a nurse crop of annual ryegrass to prevent erosion. Native trees and shrubs will be transplanted to the road bed in a random manner in an effort to match adjacent vegetation. Before the road is removed, the Adirondack shelter and the gate bars on the trail to the shelter will be removed. This will require the use of a truck to haul the dismantled shelter out of the Wilderness.

The pine plantations are poorly developed and will be selectively killed using hand tools or herbicide injection. This action will result in many dead trees as might be seen in a natural disease outbreak. Eventually the row effect of the plantation will be lost.

Several eroded areas along the trails used by trespassing vehicles will be stabilized by YACC crews once the trails are effectively blocked. This restoration will be accomplished by use of hand tools where possible.

All existing trails and fire lanes will be allowed to revert to natural vegetation. The only maintenance on the Wilderness will be routine control of erosion caused by hikers. This type of maintenance is expected to require little effort once the vehicle and horse trespass is stopped.

#### C. Law Enforcement

Law enforcement is a difficult but an important part in the management of the Wilderness. The Refuge police force is presently understaffed. The Refuge is recruiting for two policemen to bring the department up to an acceptable level of enforcement capability for the Refuge in general.

To adequately enforce the regulations in the Wilderness, an additional man is needed. Funds should be programmed for enforcement activities such as rental of an airplane for surveillance of the Wilderness on high use weekends. Horses could be used for routine patrol of the trails. A boat would be useful for patrolling the shoreline of Little Grassy and Devils Kitchen lakes.

#### D. Use of Motor Vehicles and Equipment

With the exception of the use of motor equipment to remove the Adirondack shelter and Road 9a, no vehicles will enter the Wilderness for administrative purposes. There is no area in the Wilderness more than one mile from water or roads, and the need for vehicles for search and rescue operations appears unlikely. Should a fire occur that cannot be controlled by hand tools, the minimum equipment necessary to contain the fire may enter the Wilderness.

#### E. Adjacent Land Ownership

The east side of the Wilderness abuts private land. Some trespass occurs from the private lands, mostly in the form of horseback riding and loose cattle. The Forest Service owns most of the land south of the Devils Kitchen Unit. Trespass by off-road vehicles from Forest Service land is a serious problem at three points. The Forest Service has proposed designating 1,204 acres directly south of the Wilderness as a roadless area. If this proposal becomes a reality, vehicle trespass will be reduced substantially.

Southern Illinois University owns most of the land south of the Little Grassy Unit and owns three small parcels within the Unit. The U. S.

Fish and Wildlife Service and the University are in the advanced stages of completing a land exchange that would eliminate these buildings. The Service would also acquire nearly a section of land south of the Wilderness. Acquisitions of these areas will facilitate the control of access to the Wilderness.

Giant City State Park lies at the southwest corner of the Wilderness. Many of the hikers using the Wilderness come from the State Park. The U. S. Fish and Wildlife Service owns the land on the north boundary of the Wilderness.

#### F. Restoration of Native Animal Species and Wildlife Inventories

The Illinois Department of Conservation released nine turkeys in the Wilderness in February of 1978. The seven hens and two toms were captured in the wild in Jackson County and released on Road 9. Some of the Wilderness area is good turkey habitat, and the Refuge is optimistic that a viable population will become established. The Refuge plans to conduct winter track counts or spring gobbler counts in the Wilderness.

#### IV. Public Use

The Crab Orchard Wilderness currently receives a low amount of public use. Rugged terrain, dense cover, and the lack of water and sanitary facilities discourage most people from visiting the area. Use tends to be high on weekends and light on weekdays. A 1977 study found that an average of five cars/hour travel Rocky Comfort Road (through the middle of the Wilderness Area), although no data are available on how many of those cars contain Wilderness Area users. The only data available on public use in the Wilderness were obtained by a SIU student, Larry Reeder, during the summer of 1977, and all data cited in this section are taken from his work.

Most of the users of the Wilderness were people under 30 years of age and associated with local colleges. The average group size was two, and most lived within 20 miles of the area. Organized groups using the area included scout troops, SIU Underway groups, off-road vehicles (ORV's), and backpacking clubs. Most Wilderness users surveyed were repeat visitors who learned about the area through friends or family.

The largest single activity participated in by users of the Wilderness was fishing in Devils Kitchen and Little Grassy lakes, which are not in the Wilderness Area. Both lakes are deep and provide the best fishing during the spring and early summer months when largemouth bass, crappie, channel catfish, and bluegill are often caught. Boat rentals, with a 10 h.p. limit, are available at both lakes, and canoes are popular on Devils Kitchen. Other activities in the Wilderness, in decreasing amount



of public use, are hunting, nature study, "relaxing", sightseeing, backpacking, "getting a wilderness experience", camping, hiking, swimming (outside Wilderness Area), ORV'ing, exercising, and horseback riding. Almost half of the survey group were involved in trail-related activities, and 12.5 percent were involved in illegal activities (camping, ORV'ing, and riding horses off-road). Only 64.8 percent of the visitors knew of the wilderness designation, and only 41.5 percent knew what agency managed it, indicating that most of the Wilderness users would not know where to go for information about the area.

The amount of primitive camping, hiking, horseback riding, ORV use, backpacking, and bicycling in the Wilderness increased dramatically from 1970-1975 (see Table 1). Data from Larry Reeder 1977 study.

TABLE I

<u>Activity</u>	<u>Percent Increase (1970-75)</u>
Bicycling	127.7
Hiking	88.5
Camping	93.0
Horseback-riding	72.0
Hunting	-1.2

The overall trend of the last few decades has been toward increased leisure time. The increasing number of people participating in recreational activities has put a strain on existing facilities and created a demand for more opportunities. Illinois is located on the north-south and east-west lines of travel across the country, providing easy access to visitors. The cities of Marion and Carbondale (a university town) are within 10 miles of the Wilderness, and 3,000,000 people live within 100 miles of the area. The Shawnee National Forest, Giant City State Park, Ferne Clyffe State Park, Kinkaid Lake, and Rend Lake are all popular recreational projects that are either adjacent to or within 25 miles of the Wilderness. Public use in the Wilderness is expected to increase in the next decade, and if the amount of use increases as dramatically over the next 10 years as it did from 1970-1975, serious problems will result.

Erosion, trampling of vegetation, littering, waste-disposal problems, disturbance to wildlife, and noise would result from a significant increase in public use, and increased vandalism, rules violations, and overcrowding might be expected.

Problems associated with heavy public use became more noticeable in some areas in the period of 1970-75. Deep ORV ruts were increasingly apparent on the highly erodable soil. Trash and discarded junk could frequently be seen. Around popular campsites, firewood became scarce, and a human pruning line was evident on surrounding trees. Lack of sanitary facilities was foretold by the amount of toilet paper and human waste scattered around.

Currently the Refuge is making little effort to control the use of the Wilderness and has almost no contact with Wilderness visitors. Management has been primarily concerned with stopping ORV access into the area and has not been very successful as yet. The area is seldom patrolled by the understaffed Refuge police force because of its relatively low amount of public use, and citations are given only for glaring rule violations. Many people have no idea what regulations are in effect for the area.

The first priority in visitor control in the area will be putting up effective barriers to stop ORV trespass. Four land access points (Exhibit 1) will be designated, and all other access discouraged. Kiosks (vandal-resistant) will be placed at each of the access points and will contain regulations and information about the Wilderness. Regulations and information will also be posted at the boat ramps along Devils Kitchen and Little Grassy lakes. Making the public aware of Wilderness boundaries is also important and boundary-marking is now underway.

A permit and registration system for limiting the total number of users in the Wilderness may be needed in the next decade although it is not needed now. Before any kind of system is set up, the current amount of public use and the carrying capacity of the Wilderness should be determined. This should be done as soon as possible. A good job on a current public use determination would take at least a year and be very time-consuming for a staff member. Possibly a university student might be asked to assist in the project. Traffic counters would be a help in determining area use and are currently on order. Both photo-electric and hose-type counters would be useful. A seemingly good method for determining the public use of a low-density area is found in Dwight McCurdy's "Manual for Measuring Public Use on Wildlands-Parks, Forests and Wildlife Refuges."

After the current level of public use of the Wilderness has been determined, the information can be plugged into a weighted carrying capacity formula. The best formula found so far is in "Guidelines for Understanding and Determining Optimum Recreation Carrying Capacity" put out by the Bureau of Outdoor Recreation. Factors to be considered, and weighed, in the carrying capacity formula include:

1. Highly erodable soil that will not take heavy traffic or most sewage systems.

2. Effect of traffic on rare vegetation.
3. Effect of traffic on wildlife.
4. Lack of sanitary facilities and potable water.
5. Likelihood that access could never be completely controlled.
6. Wilderness values-solitude, undisturbed environment.

When and if the carrying capacity of the Wilderness is reached, a permit or registration system will be put into effect. The system would probably be needed only during the summer vacation months and possibly spring and fall weekends. Visitor registration in advance of a Wilderness visit could be required at Refuge Sub-headquarters or some point closer to the area (possibly the proposed Grassy Road visitor contact station) or one of the campgrounds. A sign stating the need for pre-registration could be posted at the Wilderness access points and at the boat ramps along Devils Kitchen and Little Grassy lakes. When a visitor registered he would receive a Wilderness permit that he would be required to carry with him. Only a pre-determined number of permits would be given out each day, and once all were given out, signs would be placed at all access points stating the area was closed. Anyone found in the area without a permit would be considered to be there illegally. A system of this type probably is the best method of controlling the number of visitors in the Wilderness but it would be expensive in terms of man-hours to maintain. It would require tight control of access and adequate signage to function effectively. Enforcement of the permit system would require one policeman to spend most of his time in the Wilderness, but a policeman is needed there anyway, as the Devils Kitchen area has a relatively high crime rate. Drug-related crime, vandalism, and assaults occur around Devils Kitchen Lake fairly frequently. Adequate police protection would help reduce the crime rate.

Another action that would aid in visitor control would be channelizing the foot traffic into areas that would minimize erosion problems. Abandoned roads and trails exist all over the Wilderness, and some have seriously eroded. The poorer trails and unnecessary trails could be closed by planting of vegetation and traffic channeled where the land could better withstand it. The foot traffic areas would be kept away from undesirable access points which would lessen damage to the environment while helping control Wilderness traffic.

Table 2 shows the 1977 percentages of people involved in various activities in the Wilderness. The information comes from Larry Reeder's study.

TABLE 2

<u>Percent of Total</u>	<u>Activities</u>
15	Fishing
14.1	Hunting
10.2	Nature Study
9.4	Relaxing
7.8	Sightseeing
7.0	Backpacking
5.5	Camping
5.5	Hiking
5.5	Swimming
3.9	ORV
3.1	Exercising
<u>3.1</u>	Horseback-riding
90.1	

Fishing does not take place within the boundaries of the Wilderness but occurs in adjacent Devils Kitchen and Little Grassy lakes. Special Refuge and State fishing regulations apply there, and no changes or further restriction on fishing are anticipated.

Hunting in the area is mainly for squirrel, but other species hunted include deer, raccoon, rabbit, upland game, coyote, and fox. Turkeys exist in the area but are not a huntable population at this time. State and federal hunting regulations apply in the area, and since the number of hunters using the area is relatively small, and likely to remain so, no other regulations should be needed. To insure visitor safety, warnings could be posted at Wilderness access points during deer season.

Nature study can take place in the Wilderness, and there is good potential for environmental education and interpretive programming with special interest groups such as scouts, university and/or school groups, near the access points. However, most of the general public probably would not be interested, and a relatively large interpretive staff would be needed for such programming. Environmental Education workshops for youth leaders might be especially effective in the area.

interpretive signs or displays will be permitted in the Wilderness, but interpretive materials could be worked into the information kiosks at the access points.

Trapping occurs to a limited extent in the Wilderness, with beaver being the primary species sought. Most of the traps are placed along the lake shorelines. State regulations are the only restrictions on trapping in the area, but little trapping is done because of the limited vehicular access. The price of fur is going up however, and if trapping should increase greatly over the next few years, some restriction on trapping will have to be made for visitor safety.

Swimming does not occur in the Wilderness but does occur in the surrounding lakes. Swimming is illegal in Devils Kitchen Lake, but is "at your own risk" in Little Grassy Lake. No further restrictions are anticipated.

A number of old homesites exist in the Wilderness, and possibly some artifacts have been illegally collected. It does not seem a problem at this time, as nothing of historical value is known to be in the area. One cemetery is in the Wilderness, and some stones may be vandalized or illegally removed in the future, but this can be kept to a minimum if the area is patrolled regularly.

Hiking is permitted in the Wilderness, although some requirement to limit access in certain areas may be needed over the next few decades to avoid destruction of vegetation. No trail construction will be undertaken in the future, however erosion control will be accomplished with hand tools and erosion control structures of natural materials where necessary.

Four designated access points with parking nearby will be used in the Wilderness, and a kiosk (vandal-resistant) for regulations and information will be placed at each point. Numerous gates and barriers also exist on the periphery of the Wilderness, and the man-made structures will be fitted into the environment as completely as possible. Backpacking is permitted in the area as long as camping and cooking do not occur in the Wilderness. If backpackers are made aware of the regulations concerning the area and about campsites in adjacent areas of state park and Forest Service land, rules violations by backpackers can be kept to a minimum. If information is disseminated properly backpackers should not be a problem in the next decade, although the potential for problems exists.

Camping is illegal in the Wilderness because of the fragile soil and vegetation that is unsuitable for the construction of most types of sanitary facilities. The Forest Service permits primitive camping in land adjacent to the Refuge, as does Giant City State Park, so adequate campsites are available in the area. Knowledge of the campsites must be publicized and connecting trails pointed out to backpackers if the camping ban is to be enforced. Refuge boundaries must also be clearly marked. No sanitary facilities, drinking water, campground, or man-made stream crossings exist in the Wilderness.

Boundary signs will be placed as needed according to the sign handbook and where access points connect with other public or private lands. No interpretive signs will be placed in the Wilderness, but warning signs may be placed as needed at hazards, e.g. open wells, until they are corrected. Access to the interior of the Wilderness will continue to be permitted only to those on foot. If boat access creates problems in the future, the access points will have to be restricted and kiosks put up. Boat traffic to the area is very small at the present time, and does not seem to be a problem.

No known historical or archaeological sites of significance exist in the Wilderness, although a cemetery and several old homesites are there. The cemetery was in operation in the 1800's, and some of the homesites may have been started then, but only the more modern concrete and brick foundations remain. Open wells are a hazard in the area and will be filled or grated as soon as possible. Several rock shelters are present in the Wilderness that probably were used by Indians, but nothing has been recovered from them, at least by the Refuge staff. It is believed that the public will not significantly disturb the sites as more attractive areas for collectors are found elsewhere. Rare plants also exist in the area but, again, no problem is foreseen as long as their locations are not publicized. If the public is made aware that the collection of artifacts is illegal, and if some of the Wilderness is patrolled regularly, collectors should not be a problem in the future.

#### V. Research

Reeder's study should be repeated in 1982 to detect changes in the way visitors perceive the Wilderness. The study should be designed to reflect the quality of the Wilderness experience. If the experience is of poor quality because of visitor conflict or environmental degradation, restrictions on number of visitors may have to be implemented.

#### VI. Funds and Personnel

Litter pickup, signing, erosion control, and filling or screening open wells will be done by the Young Adult Conservation Corps on a continuing basis. The adirondack shelter will be removed by the Young Adult Conservation Corps.

An Enforcement Officer and vehicle are needed for patrol of the Wilderness at an annual cost of \$20,000. Nineteen thousand dollars (\$19,000) has been programmed annually for operation and maintenance of the Wilderness.

The following projects are scheduled for funding in FY 1980:

<u>Project</u>	<u>Number</u>	<u>Life Expectancy</u>	<u>Estimated Cost</u>
Access Parking Areas	5 ea.	15 years	\$16,000
Block Vehicle Access	12 ea.	--	8,000
Posting Boundary	12 miles	30 years	5,000
Fence Boundary	4 miles	30 years	46,000
Information Signs/Boards	5 ea.	20 years	8,000
Blacktop Road Removal and Seeding 1.5 miles	--		<u>5,000</u>
			\$88,000

The following is an estimate of funding needed for annual operations and maintenance:

<u>Activity</u>	<u>Estimated Costs</u>
Wilderness Patrol	\$20,000
Blocking Vehicle Access	3,500
Erosion Control	5,500
Trash and Litter Pickup	5,000
Sign Maintenance	1,500
Kiosk Maintenance	500
Parking Lot Maintenance	1,000
Exotic Vegetation Control	<u>2,000</u>
	\$39,000

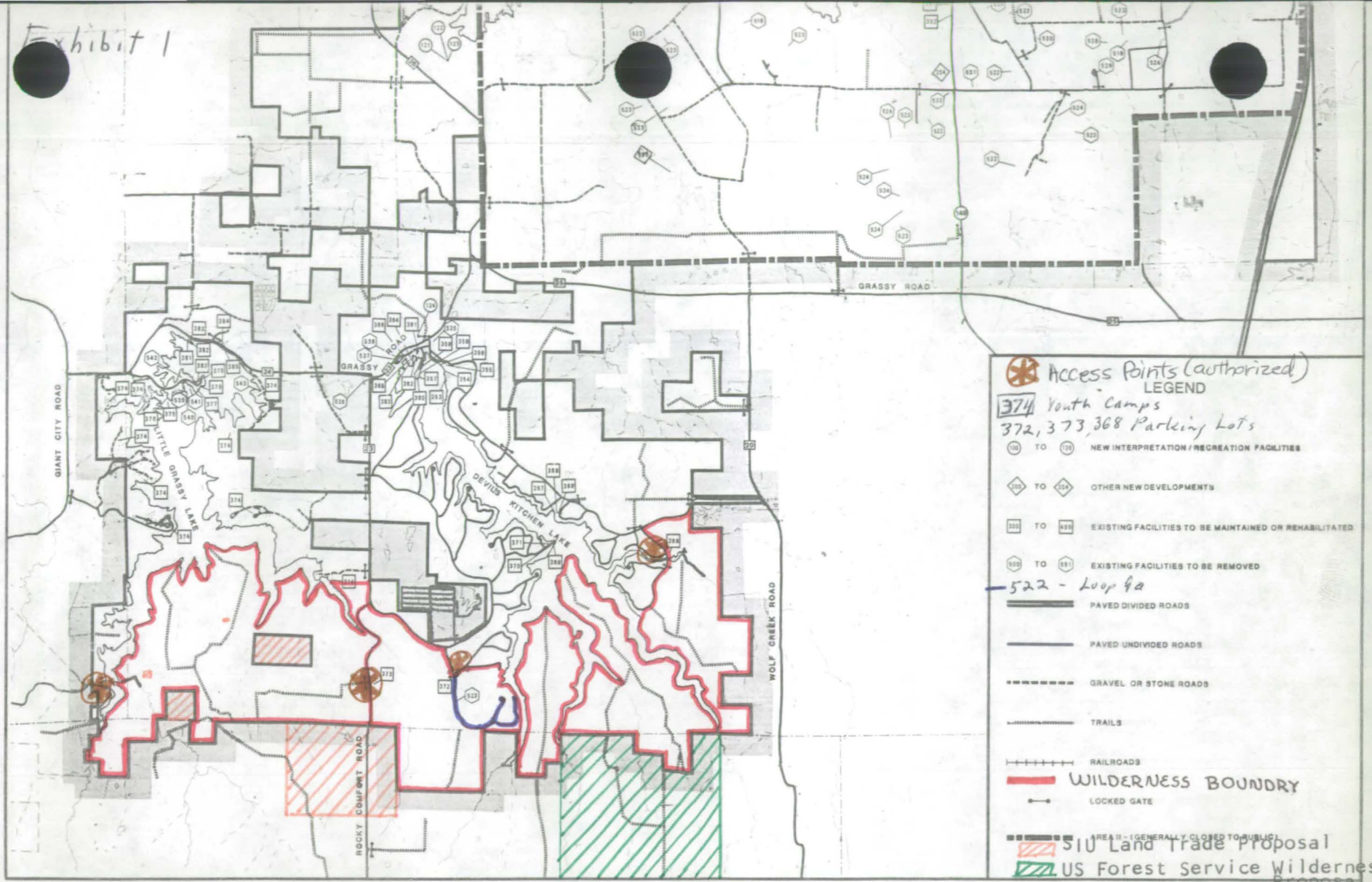
Once the restoration work is completed in the Wilderness, securing adequate personnel and funding on a continued basis will be absolutely essential for maintaining the Area in a wilderness condition. The Area is entirely too small and has too much access to be managed by a "hands-off" policy. With adequate funding the wilderness character can be preserved at the current level of public use. If this use becomes excessive, additional funds will be required to implement a program to control the numbers of people using the Area.

#### VII. Plan Currency

This plan should be reviewed, progress evaluated, and updated within four years of the date of approval.



Exhibit 1



- Access Points (authorized)**  
**LEGEND**
- 374 Youth Camps
  - 372, 373, 368 Parking Lots
  - NEW INTERPRETATION / RECREATION FACILITIES
  - OTHER NEW DEVELOPMENTS
  - EXISTING FACILITIES TO BE MAINTAINED OR REHABILITATED
  - EXISTING FACILITIES TO BE REMOVED
  - 522 - Loop 9a
  - PAVED DIVIDED ROADS
  - PAVED UNDIVIDED ROADS
  - GRAVEL OR STONE ROADS
  - TRAILS
  - RAILROADS
  - WILDERNESS BOUNDARY
  - LOCKED GATE
  - AREA II - GENERALLY CLOSED TO PUBLIC
  - SIU Land Trade Proposal
  - US Forest Service Wilderness Proposal

# CRAB ORCHARD

## NATIONAL WILDLIFE REFUGE

U.S. FISH AND WILDLIFE SERVICE  
 DEPARTMENT OF THE INTERIOR

PREPARED 9-1-78



SCALE 1:24,000



MASTER PLAN - FACILITIES



## Exhibit 2.

VEGETATION TYPE SUMMARY ON WILDERNESS AREA BY UNITS

<u>Type Description</u>	<u>Acreages</u>		
	<u>Little Grassy</u>	<u>Devils Kitchen</u>	<u>Total</u>
1. <u>Forest Land</u> (all types, all conditions)			
a. <u>Upland Hardwood Forest</u> (remnants and natural regrowth)			
(1) Adequate Stocking (all ages and sizes)	411	1039	1450
(2) Inadequate     "     "     "     "     "	<u>301</u>	<u>147</u>	<u>448</u>
Total Upland Forest -	712	1186	1898
b. <u>Bottomland Hardwood Forest</u> (natural regrowth)			
(1) Adequate Stocking (all ages and sizes)	-	16	16
Total <u>Natural Forest</u> -	712	1202	1914
c. <u>Plantations</u> (est. 1938-41 - all conditons)			
(1) Black Locust	170	206	376
(2) Other Hardwoods (oak, ash, walnut)	12	13	25
(3) Conifers (shortleaf and loblolly pine)	<u>15</u>	<u>250</u>	<u>235</u>
Total Plantations -	197	469	636
TOTAL FOREST COVER -	909	1671	2550
2. <u>Brushlands</u> (sassafras, persimmon, elm) (with broomsedge understory)	684	643	1327
3. <u>Grassland</u>	8	3	11
4. <u>Farm Fields</u> (recently abandoned - 5-10 yrs.)	27	48	75
5. <u>Ponds and Other Water</u> (exclusive of lake surface)4		-	4
6. <u>Access Roads</u> (acres occupied)	<u>16</u>	<u>41</u>	<u>57</u>
TOTAL OTHER TYPES -	739	735	1474
TOTAL ALL TYPES --	1648	2406	4054

NOTE: All type acreages and descriptions from 1967 Forest Resources Inventory for Crab Orchard Refuge.

### Exhibit 3

#### Selected References

1. Code of Federal Regulations, Wildlife and Fisheries 1977. Title 50, Part 35. Office of the Federal Register, National Archives and Records Service, General Services Administration.
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Wilderness Management Plan  
Crab Orchard National Wildlife Refuge

Prepared by:

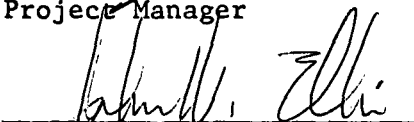
Donna J. Stanley, Outdoor Recreation Planner  
Ross Adams, Staff Biologist

April 1979  
Date

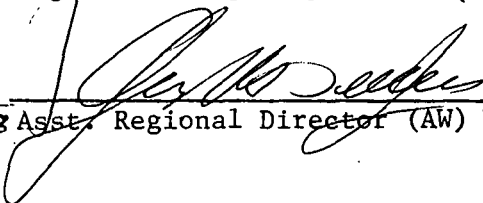
Recommended to Regional Director for Final Approval:

  
Project Manager

5-4-79  
Date

  
Regional Refuge Supervisor (RF2)

7/17/85  
Date

  
Acting Asst. Regional Director (AW)

7/17/85  
Date

JUL 17 1985

Regional Refuge Supervisor, FWS, Twin Cities, MN (RF2)

Wilderness Management Plan

Refuge Manager, Crab Orchard NWR, Carterville, IL

Attached is a signed copy of the subject plan. This completes action item 52 of the Crab Orchard Operations Inspection.

/s/ John W. Ellis

John W. Ellis

Attachment

RF2:JWellis:llm:7/17/85:x4701