

CO.

Washington Office (RF)

FELSENTHAL NATIONAL WILDLIFE REFUGE
Crossett, Arkansas

ANNUAL NARRATIVE REPORT
Calendar Year 1977

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR



TABLE OF CONTENTS

	<u>Page</u>
I. <u>GENERAL</u>	
A. Introduction	1
B. Climatic and Habitat Conditions	5
C. Land Acquisition	5
D. System Status	8
II. <u>CONSTRUCTION AND MAINTENANCE</u>	
A. Construction	9
B. Maintenance	9
C. Wildfire	9
III. <u>HABITAT MANAGEMENT</u>	
A. Croplands	10
B. Grasslands	11
C. Wetlands	11
D. Forestlands	13
E. Other Habitat	16
F. Wilderness and Special Areas	16
G. Easements for Waterfowl Management	16
IV. <u>WILDLIFE</u>	
A. Endangered and Threatened Species	16
B. Migratory Birds	17
C. Mammals and Non-Migratory Birds and Others	18
V. <u>INTERPRETATION AND RECREATION</u>	
A. Information and Interpretation	19
B. Recreation	20
C. Enforcement	20
VI. <u>OTHER ITEMS</u>	
A. Field Investigations	21
B. Cooperative Programs	21
C. Items of Interest	22
D. Safety	22

I. GENERAL

A. Introduction

This is the first narrative report for the new Felsenthal National Wildlife Refuge. This report includes background information on the creation of the refuge to establish a basis for succeeding reports.

1. Location & Description

Felsenthal Refuge is located in South Central Arkansas approximately 53 miles west of the Mississippi River, 3½ miles north of the Louisiana border, and eight miles west of Crossett, Arkansas. The refuge lies about 30 miles west of the fertile Mississippi Delta lands and within the forested Gulf Coastal Plains. The confluence of the Saline and Ouachita Rivers falls within the confines of the refuge. These rivers form the common boundary between Ashley and Union counties and generally, between Bradley and Ashley counties.

This 64,975 acre refuge, 11 miles wide by 15 miles long, is located within the Felsenthal Basin, an interesting geological phenomena. The basin is a remnant of a huge lake that at one time extended south beyond Monroe, Louisiana. Now the basin is an extensive, natural depression that is dissected by an intricate system of rivers, sloughs, bayous, and lakes separated in most part by woodlands. The area normally floods each year by overflows of the Ouachita and Saline Rivers. About 91% of the refuge is now forested by mixtures of water-tolerant hardwoods such as cypress, overcup oak, and bitter pecan in the lower zones; gum and willow oak on the higher ridges; and loblolly pine, red and white oak, and hickory on the uplands.

The refuge office was initially located in the El Dorado Post Office in 1973. However, with major staffing beginning in August, 1977, a double-wide house trailer and wood structure building were rented for temporary office and shop space. This headquarters site is located 4.5 miles west of Crossett on Highway #82 closer to the refuge.



Temporary office and shop, West Crossett. 5/27/78 EEP

2. Name

When the refuge was initially proposed, it was referred to as Ouachita NWR. However, when the refuge was incorporated into the Ouachita and Black Rivers Navigation Project the name was changed to Felsenthal. This was the name previously given by the Corps to the lock and dam that would eventually impound the waters of the refuge. The Corps of Engineers picked that name due to the close proximity of the small community of Felsenthal.

3. History

The following chronological listing of events summarizes the history of the area and the steps leading to the establishment of the refuge.

Before 1804 Hunters, Indian traders, and soldiers of fortune frequently traveled the nation of the Cadadoquis Indian tribe in the Ouachita River Basin.

- Late 1804 First official exploration was made.
- 1819 First steamboat appeared on the Ouachita River.
- 1842 Louisiana Board of Public Works requested Federal funds to improve navigation on the Ouachita; however, nothing was done until 1871.
- 1871 Congress appropriated \$51,000 to clear overhanging trees from the Ouachita.
- 1902 Congress authorized a minimum 6½ foot slack-water channel through a system of locks and dams.
- 1915 After several delays, a reauthorization resulted for a system of 6 locks and dams on the Ouachita that were completed in 1925.
- Mid 1940's Federal Government considered abandoning the lock and dam system of the Ouachita waterway for lack of use.
- 1950 Congress authorized modifications to bring the Ouachita Navigation Channel to a 9 foot minimum depth.
- 1957 A four-lock plan and larger lock chambers for the Ouachita was authorized. The proposed Felsenthal Lock and Dam would eventually become the structure located on the south boundary of the refuge that would impound water for waterfowl management purposes.
- 1961 First consideration of a joint project was given. The FWS was interested enough to send a biologist to evaluate the project. Reasons for considering a joint project were:
- a. Navigation pool would flood 10,000 acres and mitigation approaching fee title values would have had to be paid on several more thousand acres.
 - b. The benefits of a conservation project were needed to enhance the navigation project.

- 1969 The Division of Refuges in Region 4 carried out detailed field investigations to assess the project's suitability as a National Wildlife Refuge subsequent to a report to the Corps on August 1, 1969.
- 7/10/69 Director of Arkansas Game and Fish Commission recommended establishment of the Felsenthal NWR.
- 2/4/70 The Land Acquisition Committee met in Washington, D.C., to discuss the Felsenthal Project and concluded that additional information was needed before a decision could be reached.
- 5/13/70 Regional Office provided additional information for the Land Acquisition Committee in Washington, D.C..
- 12/31/70 Congress approved the purchase of 65,000 acres for the Felsenthal NWR which became law under Section 118 of the River and Harbor Act of 1970.
- 1971 Meetings with Corps and landowners began.
- 8/73 Public hearings on acquisition of lands for the refuge were held in Bradley, Ashley, and Union Counties.
- 10/73 First FWS employee, James Howe, Forester, was assigned to the Felsenthal and D'Arbonne Refuge projects.
- 7/75 Corps of Engineers contract for preliminary construction of the Felsenthal Lock and Dam was awarded.
- 8/12/75 An interim permit to operate and maintain Felsenthal Army-Corps lands as a National Wildlife Refuge was presented to Acting Regional Director Ray Vaughn, FWS, by Colonel Gerald E. Galloway of the Army Corps of Engineers at a ceremony held on the refuge. Other officials that attended the meeting were: Curtis Wilson, Assistant Regional Supervisor of Refuges; John Anderson and Jack Canizaro of the

Corps of Engineers; U.S. Representative Ray Thornton; Ashley County Judge W. T. Higginbotham; Union County Judge Homer Parks; former Union County Judge Carlton Jerry; State Senator Dooley Womack of Ouachita County; State Representative Grady Arrington of Ouachita County; and H. K. Thatcher of the Ouachita River Valley Association.

B. Climatic and Habitat Conditions

Hot humid summers and mild winters typify the climate at Felsenthal Refuge. Snowfall and ice storms are normally infrequent occurrences. Normal precipitation averages 53.25 inches and mean annual temperature 60.2 degrees F.

This year was unusually dry and in spite of above average rainfall during March and April, precipitation averaged 11.66 inches below normal for the year. Drought conditions prevailed from August through December. The severe drought created a high fire danger, but fortunately no serious habitat damage occurred as a result of wildfire (see Section IIC). Fall and winter flooding of bottomland habitat did not occur because of drought conditions and this adversely affected waterfowl use (see Section IVB).

The low temperature for this year was 3 degrees F on January 19 and the high temperature was 102 degrees F on June 6.

C. Land Acquisition

The Fish and Wildlife Coordination Act (48 Stat. 401, as amended, 16 U.S.C. 661 et seq.) and the Federal Water Project Recreation Act (Public Law 89-72; 79 Stat. 213) authorized acquisition of refuge lands.

1. Fee Title

The acquisition program for the Felsenthal Refuge was started on July 26, 1973. On that date representatives of the Army Corps of Engineers, Fish and Wildlife Service and the major landowners that owned

property involved in the project met in offices of the Woodlands Division of the Georgia-Pacific Corporation at Crossett, Arkansas. At that meeting, the purpose and the authorization of the project was discussed by the District Engineer.

The first tracts, the Olinkraft properties, were closed and paid for in June, 1974.

After refuge boundary line delineations were finalized, the refuge acreage totaled 64,975.35 acres. As of December 31, 1977, the Government had acquired, in fee title, 62,415.11 acres. Of the unacquired 2,577.35 acres, the State of Arkansas owned 1,705.35 acres (riverbeds)---the other 872 acres were in private ownership. Owners have accepted offers on 557.68 acres of the unacquired land, but title to this property has not yet been conveyed to the Government. Corps personnel have negotiated with the owners of the residual 314.32 acres.

Of the total land acquired by the end of this report year, 40,288.04 acres were acquired through condemnation.

As explained in Section III D, the five major land-owners were allowed to reserve or harvest one-half the timber growing on their lands involved in the refuge. The people that owned small tracts were allowed either to harvest their timber or sell it to the Government.

Scattered throughout the refuge area were several hundred cabins that were used by their owners for hunting and fishing oriented camping. Most of these cabins were occupying sites leased from the various lumber companies.

In addition to the cabins that were used intermittently, four families had permanent residences within the refuge boundary. Three of these residences were on private property and one was on a leased site.

The owners of improvements on land that was to be acquired for the refuge were given three options by the Government. These are:

- a. To remove their property from the refuge

- b. Sell their property to the Government
- c. Sell their property to the Government and then buy the salvage rights to the property

Most people selected the third option.

Those people that sold their property to the Government were allowed to occupy the houses until the last day of the following January. This was considered to be the end of the recreation year. If the seller had reserved salvage rights to his property, he was given until the first day of September following the expiration of his occupancy rights to remove his salvage material.

Approximately fifty houseboats were anchored to refuge property adjoining the Saline and Ouachita Rivers. (See photo.) It was decided to issue, annually, a permit for these houseboats to moor along the west bank of the river above the Highway #82 bridge.



Houseboats on Ouachita River north of Highway #82 bridge.
2/13/78 JEH

These permits will be issued only to the people that owned boats that were within the refuge boundary at the initiation of acquisition. The annual permits will be nontransferable and will contain special regulations that the permittee must comply with.

2. Easements

None

3. Other

None

D. System Status

1. Objectives

Preliminary refuge objectives are listed in Appendix A. These objectives were not established through the PPBE process, but resulted from the need for some public information on the refuge during the acquisition period. The need is recognized for more comprehensive objectives as we begin developing various plans, considering developments and preparing environmental assessments. However, because of the late staffing of the refuge and lack of a PPBE manual it was impossible to prepare comprehensive refuge objectives. For the same reasons no outputs were reported for 1977. An AWP was prepared for FY78.

1. Funding

Funding and manpower patterns for FY77 and 78 are listed below. No longer range projections have been made because of the recent establishment of the refuge.

Funding -

<u>Subactivity</u>	<u>FY 77</u>	<u>FY 78</u>
1210	90,000	136,000
1220	10,000	10,000
1240(1500)	5,000	22,000
6810	31,000	35,000
8722	- 0 -	1,000
Total	106,000	204,000

Manpower Patterns -

		<u>FY77</u>	<u>FY78</u>
*Refuge Manager	PFT	X	X
*Assistant Refuge Manager	PFT	X	X
Forester	PFT	X	X
*Assistant Refuge Manager	PFT		X
Clerk/Stenographer	PPT		X
*Forestry Technician	PFT		X
Biological Technician	PPT		X
*Biological Aide	PPT		X
Laborers (2)	TFT	X	X
YACC Senior Group Leader			X
YACC Work Leader			X
YACC Enrollees			15 authorized

*BLHP positions

No funding occurred during FY77 and FY78 for rehabilitation, cyclic maintenance or construction. BLHP development funds are not proposed for Felsenthal until FY80.

Through the end of 1977 \$47,690 in 8210 funds have accumulated from receipts of timber sales, grazing and cooperative farming. These funds can be expended by this station within five years of receipt.

II. CONSTRUCTION AND MAINTENANCEA. Construction

Nothing to report.

B. Maintenance

Nothing to report.

C. Wildfire

In 1976 ten wildfires occurred on the Felsenthal Refuge. Seventeen wildfires occurred in 1977. These fires were judged to be the result of several causes. However, the primary cause was thought to be arson.

Arkansas Forestry Commission personnel have stated that the part of the refuge in Ashley County has a history of wildfires -- most of them set intentionally. The State Foresters are of the opinion that some of the fires were set because of the refuge acquisition program, but that many of them would have occurred regardless of land ownership. State personnel believe that some fires were set to drive game, while others were set to improve deer "stands".

Regardless of the causes, no fires caused appreciable damage to the refuge. Nearly all of the fires burned in areas that had been clear-cut or in the permanent pool area. Thus, damage was limited to one and two year old pine and hardwood reproduction.

On January 27, 1977, the refuge forester met with Edwin E. Waddell, Protection Forester with the Arkansas Forestry Commission. The purpose of that meeting was to negotiate an interim fire protection agreement between the Forestry Commission and Felsenthal Refuge.

Briefly, this interim agreement states that the Arkansas Forestry Commission is responsible for the suppression of wildfires on privately owned lands adjacent to the refuge and will continue to suppress all fires originating in or burning onto refuge lands. After a fire has been suppressed, and it is determined that the fire was on government lands, the Fish and Wildlife Service will reimburse the Forestry Commission for actual suppression costs. A copy of this agreement is in the refuge files.

After the refuge is fully staffed and funded, a permanent fire protection agreement will be negotiated with the Forestry Commission that will provide for detection and suppression by the State. The State will be paid an annual payment based on the number of acres covered by the agreement.

In 1977, a crawler tractor suitable to pull a fire plow was requisitioned for the refuge. This equipment had not been received by the end of this reporting year.

III. HABITAT MANAGEMENT

A. Croplands

Felsenthal Refuge has 297 acres of land that are suitable for agriculture. These lands are divided into three tracts; 126 acres are located near Eagle Lake in Bradley County, 100 acres are located South of Highway #82 in Ashley County and 71 acres are located north of Highway #82 in Union County.

In 1977, the agricultural land near Eagle Lake was leased to John H. Harrod of Hermitage, Arkansas. Mr. Harrod paid \$1,005.00 to farm tomatoes and graze cattle on this

land. The rental rate was computed at \$1.00 per animal use month for 285 AUMS and 12 acres of tomatoes at \$60.00 per acre.

Mr. Harrod is one of the former owners of the leased land. Before his land was condemned in conjunction with the acquisition of the refuge, Mr. Harrod used the land for a similar farming operation. This lease was negotiated in an effort to facilitate the transition of his farming operation from these lands to other lands outside the refuge boundary.

B. Grasslands

Not applicable.

C. Wetlands

Since year-round navigation on the Ouachita River would require a system of locks and dams, Congress authorized, in 1902, a minimum 6.5 foot slack-water channel from the mouth of the Black River to Camden, Arkansas. A system of six locks and dams was completed in 1925. The existing navigation pool through the refuge is controlled by Lock #6 which is located approximately 4 miles south of Felsenthal, Arkansas. Construction of this lock created a navigation pool of which 5,000 acres are within the refuge boundary. The top of this pool is 61.3 feet above mean sea level.

In December 1970, as a feature of the Ouachita and Black Rivers 9-Foot Navigation Project, Congress approved the purchase of 65,000 acres of the Felsenthal Basin for a National Wildlife Refuge. Completion of the 9-foot channel will create a 15,952 acre navigation pool with a top elevation of 65 feet above mean sea level.

A contract to build an access road to the site of the Felsenthal Lock and Dam was awarded in October 1972. Extended periods of high water delayed completion of this contract. Because of this the completion date of the Lock and Dam was moved from 1978 to 1981.

In conjunction with the navigation project, the Felsenthal Lock and Dam will be so constructed that a fluctuating pool of an additional 5 feet in depth can be placed on top of the navigation pool. The top of the management pool will be 70 feet above MSL and will cover approximately

21,000 additional acres. Total acres of water when the water level reaches 70 feet above MSL will be 36,000 acres.

This additional pool will be managed as a green-tree reservoir in an effort to improve habitat for waterfowl. As far as can be determined by refuges the Felsenthal green-tree reservoir will be the largest managed reservoir of this type in this country.

At the present 5,000 acres of the Lock #6 Navigation pool lie within the refuge boundary. This area consists of the channels of the Ouachita and Saline Rivers, river cut-offs and flooded old-river meanders that had supported pure stands of Cypress (Taxodium distichum). Old-river meanders are known locally as cypress "breaks". Most of the acreage of the present navigation pool consists of these flooded cypress "breaks".

Efforts were made to salvage the timber in the navigation pool before the completion of Lock #6. Water depths on these lands are usually less than 3 feet. Due to stumps, sunken logs and shallow water, access through the area by boat is very difficult. Nevertheless, disregarding the difficult boating in the existing navigation pool, this 5,000 acres of water is one of the better warm-water fisheries in the South.

The top of the existing Navigation Pool is 61.3 feet above MSL. All lands up to 63 feet are affected by water-logged soils. All lands up to 62 feet above MSL have converted to stands of buttonbush (Cephalanthus occidentalis) and water locust (Gleditsia aquatica). Timber produced on the water-logged sites located between 62 feet and 63 feet above MSL has declined in quality to the degree that it is no longer merchantable.

Water-logged soils to an elevation 18 inches above the top of the permanent pool may not appear significant to those people who are unfamiliar with the topography of the Felsenthal Basin. But, the basin is so devoid of topographical changes that an addition of 3.5 feet to the water level of the permanent pool will flood an additional 10,000 acres.

Water-logged soils in the present navigation pool caused a decline in timber quality on approximately 7,000 acres of refuge land. All of this land will be in the new navigation pool.

It is the opinion of the Refuge Forester that water-logged soils above the new navigation pool will affect at least 10,000 acres of land. No data exists to justify this opinion or to indicate the degree the timber will be affected.

D. Forestlands

At the time land acquisition was initiated for Felsenthal Refuge most of the land suitable for growing pine timber was managed intensively for the production of pulpwood, veneer bolts, and sawlogs. Most of this land was stocked with large volumes of valuable pine timber.

Past management of the bottomlands consisted of either clear-cutting at any time economical volumes of timber existed or a periodic high-grading selective cut operation. All of the refuge bottomlands that were formerly owned by the Potlatch Corporation and the Georgia-Pacific Corporation had been clear-cut within ten years of their acquisition date.

Lands that were acquired from the Calion Lumber Company had been selectively high-graded at time intervals that were determined by the needs of the company. Consequently, the Calion lands are now stocked with a large volume of large cull trees.

Before acquisition was initiated for Felsenthal, it was decided the five largest landowners that had land involved in the project would be allowed to reserve one-half the volume of timber occurring on these holdings. These companies were the Georgia-Pacific Corporation, Olinkraft Incorporated, Potlatch Forest, Calion Lumber Company and Deltic Farm and Timber. These five companies owned 92 percent of the land that was included within the refuge boundary. An agreement could not be negotiated with Potlatch personnel; therefore, the Potlatch lands and timber were acquired, in their entirety, through condemnation.

The Olinkraft Foresters elected to remove their one-half of the timber volumes by harvesting all pine timber, 10 inches DBH and larger that occurred on each alternating 40-acre tract. All hardwood timber and pine pulpwood occurring on these lands was sold to the Government.

Georgia-Pacific personnel reserved all merchantable pine timber that occurred on each alternating 40-acre tract. All hardwood timber was sold to the Government.

The Deltic lands were stocked with high quality pine timber on their upland sites and adequate volumes of hardwood timber on their bottomland sites. Most of the hardwood timber had been removed from the refuge lands adjacent the Deltic properties. In an effort to preserve this needed hardwood habitat, a cutting pattern was negotiated with Deltic personnel that allowed their loggers to harvest most of the pine timber and reserved the better hardwood stands for the refuge.

After the Deltic lands were acquired, refuge personnel negotiated with Deltic personnel an exchange of pine saw-timber for the hardwood timber that occurred on Deltic's portion of the cutting pattern.

Subsequently, refuge personnel exchanged pine saw timber that was owned by the Government, with Deltic personnel for pine pulpwood that occurred on Deltic's part of the cutting pattern. This exchange was limited to the pulpwood that occurred in manageable stands.

Calion Lumber Company is a hardwood lumber producing business. Consequently, nearly all of the Calion lands were bottomland hardwood sites mostly stocked with large diameter trees. Because of this large timber, Calion's loggers were allowed to harvest their share of the timber by cutting all trees that were 20 inches DBH and larger. After cutting operations are completed the Calion lands will be stocked with an adequate volume of young sawlog timber and a large volume of cull trees greater than 20 inches DBN. Approximately 30 percent of the residual volumes on the Calion land is cull material.

All timber in the permanent pool area will be killed when the pool is filled. Because of this, the involved landowners were given the option of reserving all timber growing in this area. Calion Lumber Company was the only landowner to exercise this option.

After cutting agreements were negotiated with the involved lumber companies, refuge personnel negotiated agreements to exchange refuge timber for trees that contained cavities constructed by the endangered red-cockaded woodpecker (Picoides borealis) that were found to occur on the companies' cutting reservation. After these cavity trees were located by company loggers, refuge personnel measured them and then assigned an appropriate amount of refuge timber to the involved company.

During acquisition negotiations the lumber companies were given two options that limited the length of time of their cutting reservations. These options were two year and four year cutting reservations. The four year cutting reservation had a growth penalty for the last two years based on the annual growth of the timber on the area and the appraised value of the timber. All lumber companies, excluding Calion Lumber Company, chose the two year cutting reservation.

All companies with the two year cutting reservation, excluding Deltic Farm and Timber, completed their cutting operations within the assigned period of time. Deltic requested a 12-month extension. Their request was granted subject to the payment of a growth penalty based on the annual increment of the residual timber.

Calion Lumber Company selected the four year cutting reservation and paid, in advance, a penalty for the last two years of the reservation.

As of December 31, 1977, all lumber companies, except Calion Lumber Company, had completed their cutting reservations. Calion has an additional year before their four year cutting reservation expires.

After the Government received title to the Potlatch and Georgia-Pacific lands, refuge personnel began efforts to salvage the timber growing on that part of these properties located in the permanent pool area.

On September 16, 1976, approximately 2,498,440 board feet of hardwood sawtimber were sold to Calion Lumber Company for \$32,500. This salvage sale consisted of 2,157 acres located at the confluence of the Ouachita and Saline Rivers in Ashley and Bradley Counties.

On August 16, 1977, approximately 488,096 board feet of sawtimber were sold to Calion Lumber Company for \$10,000. This salvage sale consisted of 240 acres at Wheeler Lake in Ashley County.

On September 22, 1977, attempts were made to sell 2,944,662 board feet of hardwood saw timber in the Redeye Lake area in Ashley County. No bids were received for this sale. Efforts will be made in 1978 to secure a market for this salvage material.

Other timber sold on Felsenthal before 1978 consisted of storm, insect and oilfield salvage.

Storm and insect salvage sales were limited to Union County. These salvages consisted of 29,276 board feet of pine sawtimber and 123 cords of pine pulpwood which sold for a total of \$1,971.

Oil field salvage was limited to the Charivari Creek oilfield in Bradley County. This harvest consisted of 8,637 board feet of pine saw timber, 7,304 board feet of hardwood saw timber and 14 cords of hardwood pulpwood which sold for a total of \$1,497.

E. Other Habitat

Nothing to report.

F. Wilderness and Special Areas

A tract consisting of 160 acres south of Jones' Lake has been considered for designation as a natural area. It was the only area on which all refuge timber types were represented and had not been logged within the last 20 to 30 years. Originally, 320 acres were involved; however, 160 acres were logged before the land acquisition could be completed.

G. Easements for Waterfowl Management

Nothing to report.

IV. WILDLIFE

A. Endangered and/or Threatened Species

Several endangered species are known to inhabit Felsenthal Refuge. The American alligator, red-cockaded woodpecker and southern bald eagle have all been observed by refuge personnel on the refuge. Local reports suggest the presence of the eastern cougar on or in the vicinity of the refuge.

The Arkansas Game and Fish Commission has an active program to reintroduce the alligator to Southern Arkansas. As a result of this, over the last six years 75 alligators greater than 5 feet in length have been released on what are now refuge lands. Of these, 50 were released during 1977.

Twenty-six red-cockaded woodpecker colonies have been located by Refuge Forester James Howe over the last four years. These colonies were identified primarily as a result of timber transactions that allowed three timber companies (Georgia-Pacific, Deltic, and Olinkraft) to harvest timber on alternating 40 acre tracts as a part

of land acquisition agreements. However, since some of these colonies were located as long as four years ago and many colonies only consist of individual cavity trees in clear cut areas, it is not known what their present status is.

There have been several sightings of bald eagles on refuge lands over the past decade. Most of these sightings were made on the refuge north of Highway #82. State biologists have reported up to 10 bald eagles annually wintering at Lake Georgia-Pacific which is located east and adjacent to the refuge. Refuge sightings are probably of wintering or migrant eagles, since none are known to nest on or in the vicinity of the refuge.

There are documented and other reliable reports that the eastern cougar inhabits the refuge. During the spring of 1972, a Crossett resident observed an adult cougar near the Ouachita River south of Highway 82 in Ashley County. This same person observed cougar tracks north of Hwy. 82 near the Saline River in Ashley County (Reported in Arkansas Academy of Science Proceedings, Vol. XXVII, 1973, Status of the Mountain Lion in Arkansas). Another local resident, an experienced hunter/trapper and considered a reliable observer, reported sighting an adult cougar on two occasions during 1977 in Union County two miles west of the refuge. In 1969, a cougar was killed east of Hamburg in Ashley County providing further evidence of its recent existence in the refuge vicinity.

B. Migratory Birds

1. Waterfowl

Waterfowl use of the refuge is primarily dependent on high-water levels sufficient to flood bottomland hardwoods during the migration and wintering period. Wood ducks and mallards are the primary users during these times. However, this year the Ouachita River did not overflow into the bottoms during October through December. Many local hunters claimed this was the worst waterfowl season in their lifetime. Refuge staff observations indicated that mallard and wood ducks numbered in the hundred's at best.

Felsenthal Refuge provides excellent habitat for wood duck nesting and brooding. There are numerous lakes, bayous and sloughs surrounded by cypress and

other hardwood trees which furnish a plentiful supply of nesting cavities. Dense thickets of buttonbrush associated with these areas furnish the necessary protective cover for brood rearing.

2. Marsh and Water Birds

Nothing to report as no opportunity to appraise their status as yet.

3. Shorebirds, Gulls, Terns and Allied Species

Nothing to report due to lack of opportunity to appraise their status as yet.

4. Raptors

Nothing to report.

5. Other Migratory Birds

Nothing to report.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

White-tailed deer, gray squirrel and fox squirrel are the most popular refuge game mammals. No density data is available on squirrel populations. Although, hunter reports suggest that squirrels were scarce in the bottoms this fall due to a low mast crop of acorns, thus moving them to the higher ridges.

Southeast Arkansas has the highest deer density of the entire state. State biologists estimate one deer per 25 acres in the refuge area. This translates into a pre-hunting population of 2600 deer on the refuge. Based on state biologist estimates of one legal buck harvested per 300 acres, approximately 210 legal deer were removed from the refuge during the 1977 hunting season.

2. Other Mammals

Beaver are common and are one of the most destructive agents to bottomland hardwoods. They are killing hardwood stands by flooding and blocking culverts with

debris. Approximately 2,000 acres of dead or dying refuge timber are the direct result of beaver damming & there is potential for damage to an additional 13,000 acres. A beaver control plan is needed to establish procedures for reducing damage in problem areas.

3. Resident Birds

Quail and turkey are both present on Felsenthal Refuge. No census data is available for quail, but it is evident that quail are abundant in areas where recent pine timber harvests have opened the canopy and created an understory of grasses, herbs and shrubs. These areas are not very huntable, however, due to the dense vegetation.

Turkey data from Arkansas Game and Fish personnel indicates a low, but viable, population on the refuge. Based on counts of known flocks, approximately 50-60 birds comprised the 1977 pre-hunting refuge population.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

Nothing to report.

2. Off-Refuge

The U.S. Fish & Wildlife Service personnel have participated in several important public meetings since acquisition of the refuge began. During August 1973 a joint Army Corps of Engineers - Fish & Wildlife Service public meeting was held in each of the three counties affected by the refuge acquisition (Bradley, Union, and Ashley Counties). Curtis Wilson and Larry Givens of the Regional Office attended those meetings. The major topic was land acquisition for the refuge.

On March 24, 1977, the U.S. Fish & Wildlife Service, Army Corps of Engineers and the Arkansas Game and Fish Commission co-sponsored a public meeting in Crossett and discussed acquisition, development, and management of the refuge. James Howe, Refuge Forester, Russell Ernest, Area Manager, and Kenneth Butts and Curtis Wilson of the Regional Office represented the Fish and Wildlife Service at that meeting.

B. Recreation

1. Wildlife Oriented

Felsenthal did not have a refuge managed hunting, fishing, or trapping program this year. Because the refuge has not been surveyed or posted and the refuge has only recently been staffed it was not practical nor possible to do otherwise. Therefore, our approach was only to monitor hunting and fishing use on the refuge and enforce state hunting and fishing regulations and seasons.

The bottomlands of the refuge have historically received intensive hunting and fishing use by south Arkansas residents. More than 200 hunting-fishing camps were located on the refuge prior to acquisition. Many still need to be removed. Numerous well constructed duck blinds are still in use throughout the refuge.

Public use data was not collected this year. However, it was clearly evident that deer hunting dominated use on the refuge. Waterfowl hunting is normally quite popular at Felsenthal, but is dependent on flooded bottomlands to attract waterfowl. Consequently with this year's drought conditions waterfowl hunting was very limited. Sport fishing probably accounts for the single most important recreational use on the refuge. Traditionally the heaviest fishing activities occur during spring flooding of the bottomlands.

2. Non-Wildlife Oriented

Camping at Felsenthal occurs primarily in conjunction with hunting and fishing activities. As with this year's hunting and fishing, no attempt was made to impose restrictions beyond state regulations. In the future if camping is permitted in conjunction with fishing and hunting it will be restricted to designated areas.

C. Enforcement

Law enforcement presented special problems this year at Felsenthal. As pointed out previously, this area has historically received intensive public use. State enforcement personnel have been unable to patrol this area adequately in the past and consequently violators have been free to operate without serious constraints. Night hunting (deer) and large over-bag limits of waterfowl have been frequent occurrences during past years.

The recent staffing of the refuge just prior to the fall hunting season created several logistical and manpower problems for enforcement activities. The most serious problem was the lack of suitable vehicular equipment for travel throughout most of the refuge. As many hunters were well equipped with 4-wheel drive vehicles carrying winches & over-size tires and ATV's the refuge staff was at a distinct disadvantage. The lack of radio equipment further hampered enforcement work.

Enforcement activities during November-December resulted in 21 cases. Night enforcement activities frequently involved refuge-state cooperation and resulted in 6 night hunting cases. The remaining violations included waterfowl over bag limit (4), untagged deer (2), refusing to yield for inspection (2), non-resident hunting with resident license (2), deer tag not filled out (1), no duck stamp (1), unlicensed dog (1), timber trespass (1) and sand removal (1).

All game law violations were handled through the state court system. State game wardens used the bond schedule system for game violations. The refuge violations of timber trespass and sand removal were not prosecuted primarily because the refuge was not posted. The low number of waterfowl cases this year is largely attributable to the drought conditions and the resulting low numbers of waterfowl. If the bottom lands had flooded this fall, the refuge staff would have been hard pressed to control waterfowl violations under the statewide seasons and with our inadequate vehicle equipment.

VI. OTHER ITEMS

A. Field Investigations

No field investigations were identified or conducted this year.

B. Cooperative Programs

October marked the beginning of the YACC program at Felsenthal. Mike Followwill and Dennis Barnett were the first enrollees on board (December) and busied themselves with janitorial and maintenance activities around our temporary rented office and shop. Because a Group Leader position had not been approved prior to the hiring of enrollees, the supervision and administration of the program fell entirely on the refuge staff.

C. Items of Interest

Major staffing of the refuge began during the last half of 1977. Charles Strickland, Refuge Manager, transferred from Santee NWR, South Carolina, during August. Jack Womble, Assistant Refuge Manager, transferred from Union Slough NWR, Iowa, in September and Earl Possardt, Assistant Refuge Manager, transferred from the Federal Power Commission, Washington, D.C., during October. Larry King, Biological Aide and Sue Horton, Clerk-Typist, are both Crossett residents and began 700 hour temporary appointments during November. Only one field staff member was on board prior to 1977, that being James Howe, Refuge Forester. Jim transferred from Carolina Sandhills NWR, So. Carolina, in October 1973. He has done an outstanding job in managing both Felsenthal and D'Arbonne Refuges during their activation period. His abilities in all phases of refuge management have greatly enhanced the acquisition and establishment of these two areas.

Raymond McMaster, Refuge Manager at White River NWR, assisted with the program scheduling, BLHP planning, and administrative matters for both Felsenthal and D'Arbonne Refuges for the past several years. This and his continued assistance is greatly appreciated.

The scarcity of photographs in this report is regrettable. However, the staffing of the refuge near the end of the year, lack of photographic equipment, and other higher priorities prevented the staff from obtaining adequate refuge photographs this year.

Credit for this report goes to the following staff members: Charles Strickland for editing and adding a few comments along the way; Jack Womble for preparing Sections I A & D and VI A & D; Jim Howe for preparing Sections I C, II C, and II A, C, & D; Earl Possardt for preparing Sections I B, II A & B, III F, IV A, B, & C, V A, B, & C, and VI B & C. Our new clerk, Ann Laney (EOD 3/27/78), typed the report.

D. Safety

Safety meetings were made a part of all staff meetings and proper safety procedures were discussed at this time. There were no personal injuries this year. However, one vehicle accident occurred involving a GSA vehicle being driven by Paul Conner, a 700 hour appointee (laborer), in Little Rock, Arkansas.



FELSENTHAL NATIONAL WILDLIFE REFUGE

REFUGE OBJECTIVES

1. To coordinate the refuge's development and management programs with the needs of the community and the objectives of the National Wildlife Refuge System.
2. To improve habitat and provide additional protection for waterfowl.
3. To provide for a full spectrum of wildlife common to southeastern Arkansas.
4. To promote wildlife-oriented recreation and provide necessary facilities.
5. To provide for high quality hunting of resident game, especially squirrels and deer, while maintaining optimum wildlife populations.
6. To provide for waterfowl hunting when compatible with the proper protection and preservation of the national waterfowl resource.
7. To encourage sport fishing consistent with other public use programs and management of waterfowl.
8. To provide leadership in the management of wildlife and wildlife habitat. The forestry management program will encourage species capable of supporting a wide variety of wildlife.
9. To provide opportunities for environmental education by serving as a demonstration area and outdoor laboratory for universities, colleges, public schools, and individuals interested in studying the ecology of the refuge.

HABITAT RECOMMENDATIONS

1. To develop and manage approximately 28,000 acres of hardwood bottoms as green timber reservoirs for waterfowl.
2. To manage the reservoir portions of the refuge as effectively as possible for waterfowl food production and for public fishing.
3. To manage the hardwood bottoms and upland forests for wildlife and recreation and for timber production.

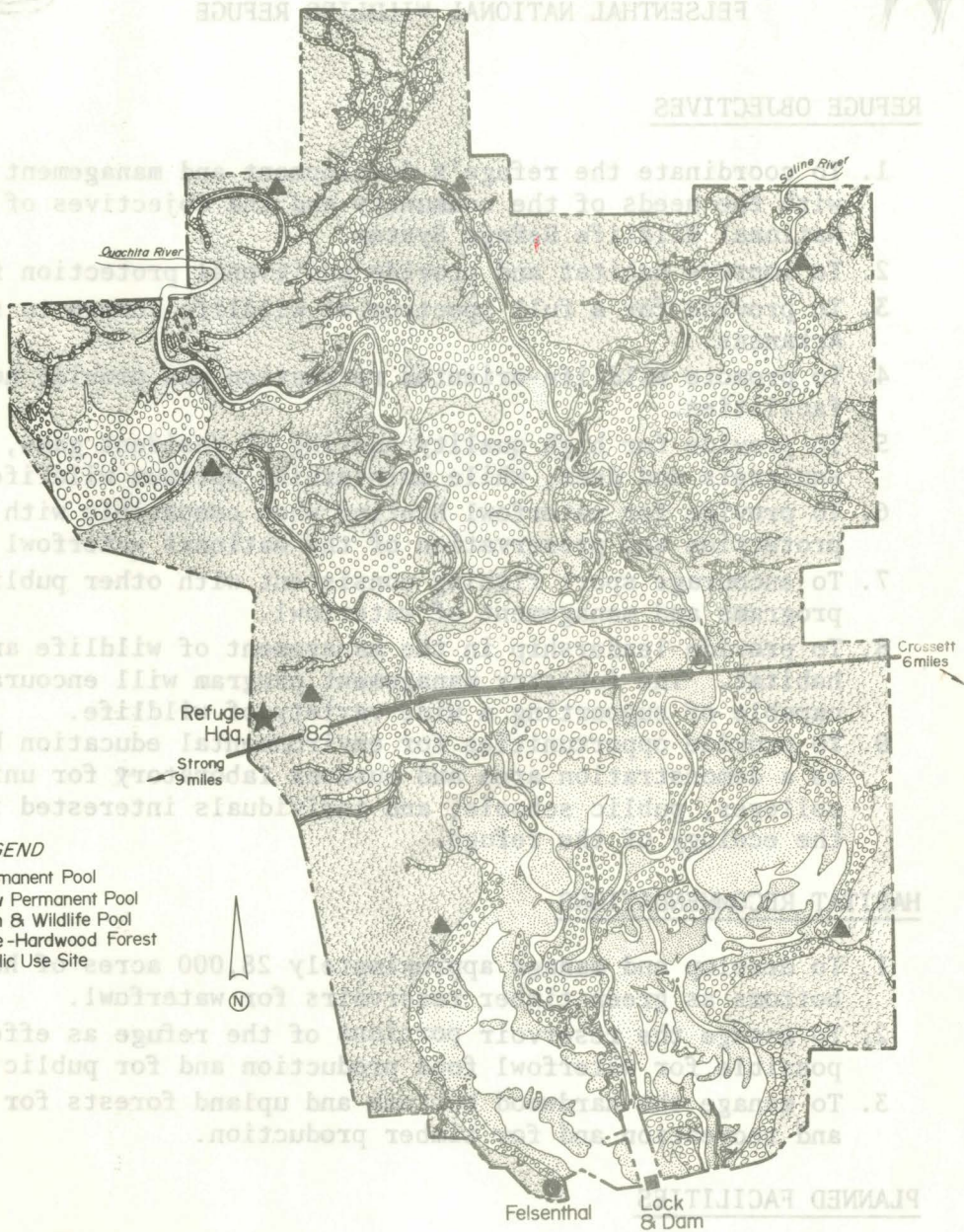
PLANNED FACILITIES

Refuge Headquarters and Sub-headquarters
 Maintenance and Related Facilities
 Wildlife Interpretive Center
 Outdoor Education Facility
 Wildlife Display Area
 Habitat Demonstration Areas
 Wildlife Observation Sites
 Walking and Driving Nature Trails
 Sanitation Facilities
 Boat Ramps





FELSENTHAL National Wildlife Refuge Preliminary Plan



Refuge Headquarters and Sub-headquarters
 Maintenance and Related Facilities
 Wildlife Interpretive Center
 Outdoor Education Facility
 Wildlife Display Area
 Habitat Demonstration Areas
 Wildlife Observation Sites
 Walking and Driving Nature Trails
 Sanitation Facilities
 Boat Ramps

FELSENTHAL NATIONAL WILDLIFE REFUGE

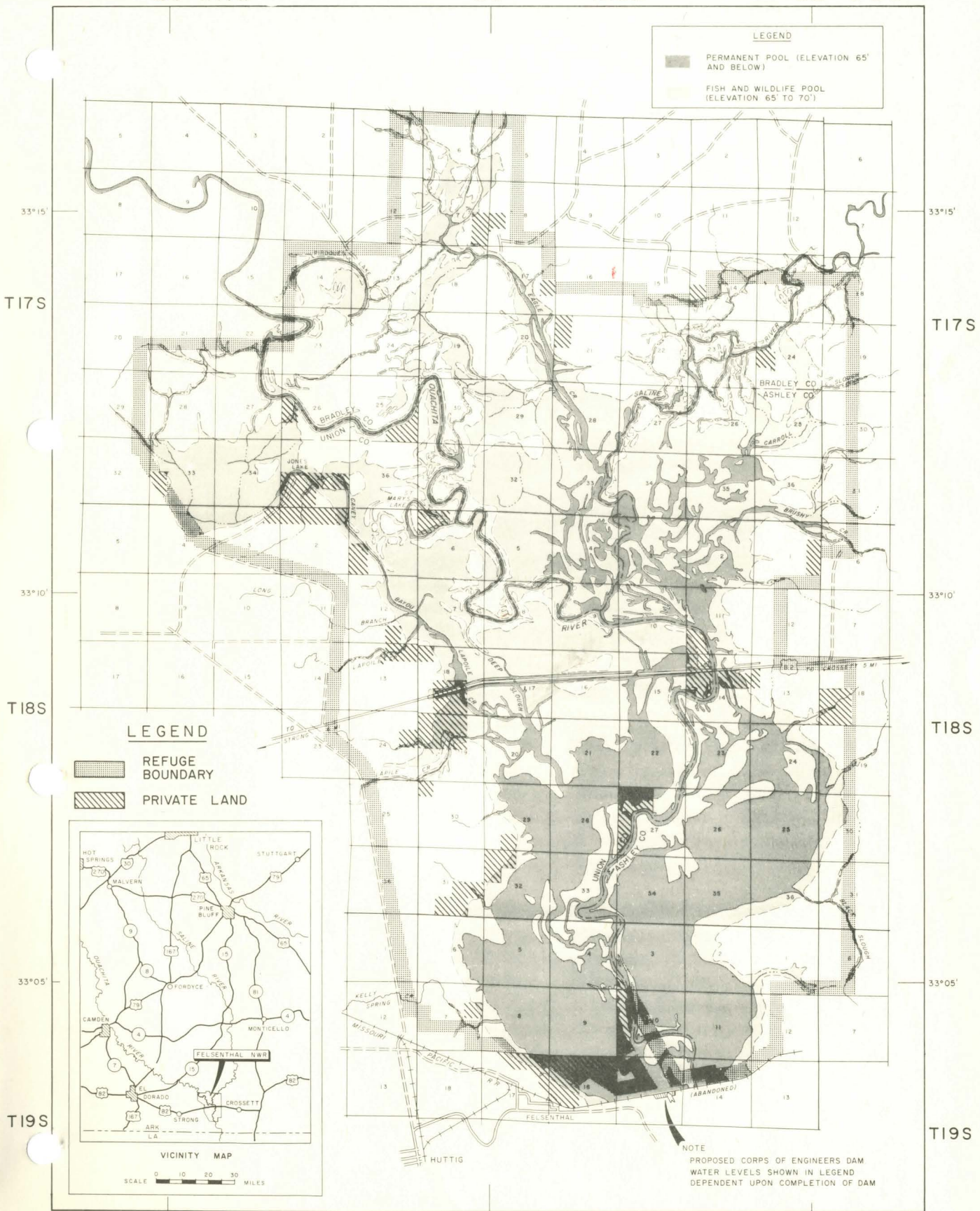
APPENDIX B

ASHLEY, BRADLEY AND UNION COUNTIES, ARKANSAS

UNITED STATES
DEPARTMENT OF THE INTERIOR
92°15' R11W

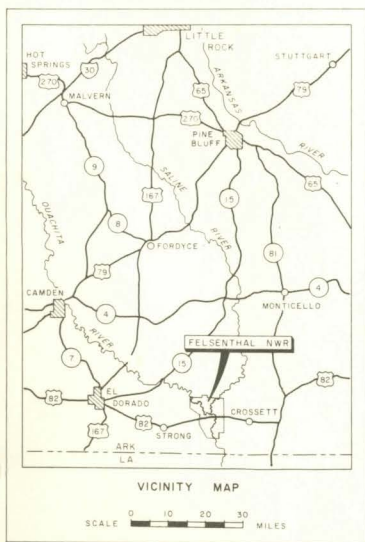
92°10' R10W

UNITED STATES
FISH AND WILDLIFE SERVICE
92°05' R9W



LEGEND

- REFUGE BOUNDARY
- PRIVATE LAND



92°15' R11W

92°10' R10W

92°05' R9W

COMPILED IN THE DIVISION OF REALTY FROM SURVEYS BY U.S. ARMY CORPS OF ENGINEERS AND AERIAL PHOTOGRAPHS

0 2640 5280 10560 15840 21120 FEET

0 1/2 1 2 3 4 MILES

5°15' TRUE NORTH
MAGNETIC N
MEAN DECLINATION
1975

