

DEPARTMENT OF THE INTERIOR

FINAL

ENVIRONMENTAL STATEMENT

FES 76-6

PROPOSED

BIG LAKE WILDERNESS AREA, ARKANSAS

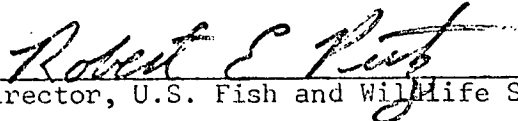
Prepared By:

FISH AND WILDLIFE SERVICE

U.S. Department of the Interior

Washington, D.C. 20240

Acting


Director, U.S. Fish and Wildlife Service

SUMMARY

() Draft (X) Final Environmental Statement

Department of the Interior, U.S. Fish and Wildlife Service

1. TYPE OF ACTION: Legislative
2. DESCRIPTION OF PROPOSED ACTION: Proposal recommends that 1,818 acres of the Big Lake National Wildlife Refuge, located in Mississippi County, Arkansas be included in the National Wilderness Preservation System.
3. SUMMARY OF ENVIRONMENTAL IMPACT AND ADVERSE ENVIRONMENTAL EFFECTS: No immediate or long-range environmental change of significance would occur on the area involved as a result of the proposed action. Any impact would derive from protection against any exploitation of the natural resources. There are no known developments within or outside the Big Lake National Wildlife Refuge that would adversely affect the wilderness character of the proposed wilderness to a significant degree.
4. ALTERNATIVES CONSIDERED: A. No Action B. Increase the size of the proposal and, C. Decrease the size of the proposal.
5. COMMENTS HAVE BEEN REQUESTED FROM THE FOLLOWING:
 - *Department of Agriculture
 - *Department of Air Force
 - Department of Commerce
 - Department of Transportation
 - *Department of Defense
 - Corps of Engineers
 - Department of the Interior
 - *Bureau of Outdoor Recreation
 - *U.S. Geological Survey
 - *Bureau of Mines
 - *Bureau of Land Management
 - *National Park Service
 - *Arkansas State Clearinghouse
 - *Missouri State Clearinghouse
6. DATE STATEMENT FORWARDED TO COUNCIL OF ENVIRONMENTAL QUALITY AND NOTICE OF AVAILABILITY TO THE PUBLIC SENT TO FEDERAL REGISTER:

Draft: September 17, 1974

Final: February 9, 1976

*Comments received and attached

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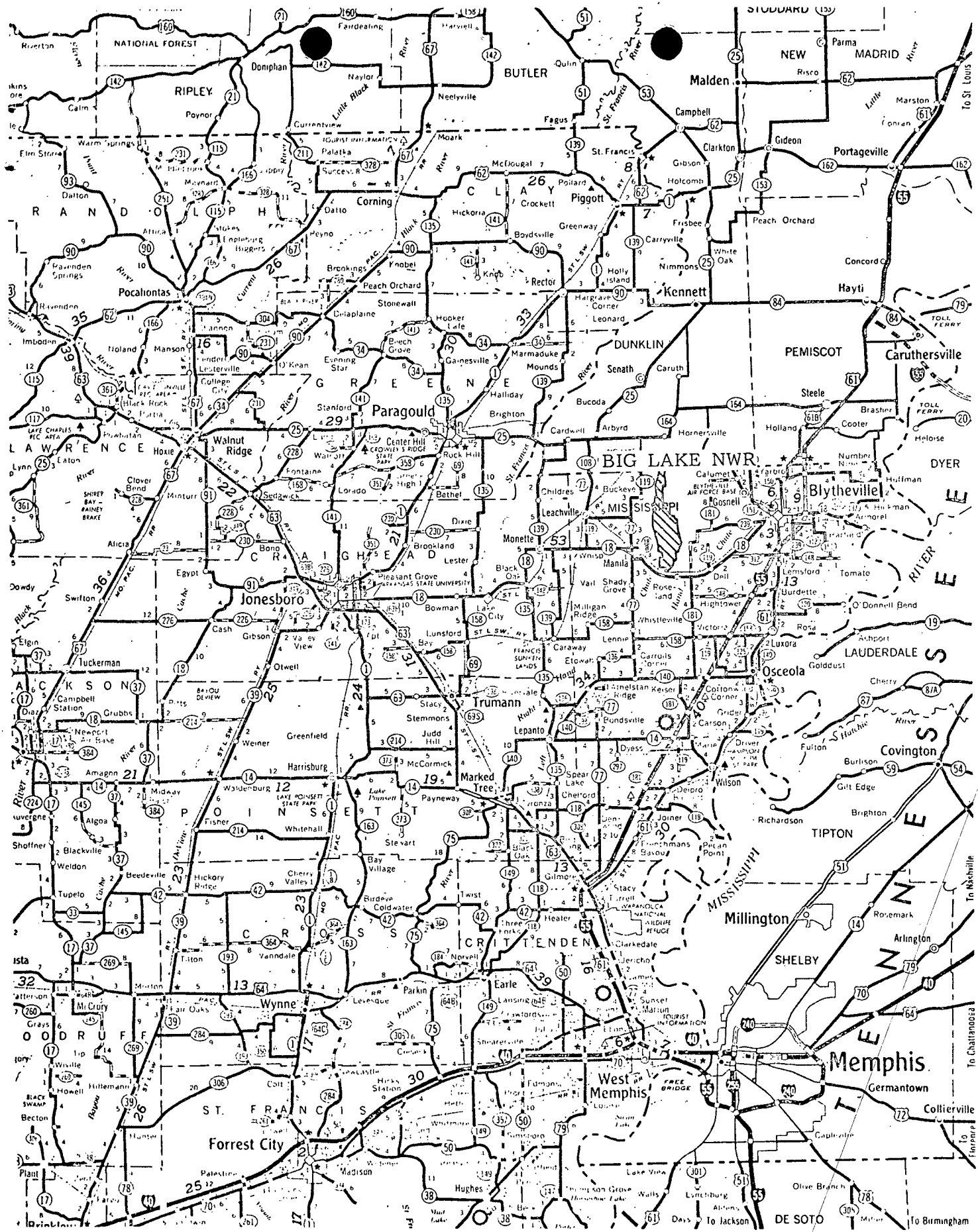
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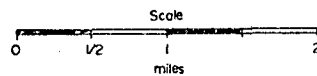
Bird List - Big Lake NWR
Mammal List - Big Lake NWR
Reptile List - Big Lake NWR
Fish List - Big Lake NWR
Plant List - Big Lake NWR



VICINITY MAP

Scale One inch Equals Approximately 13 Miles

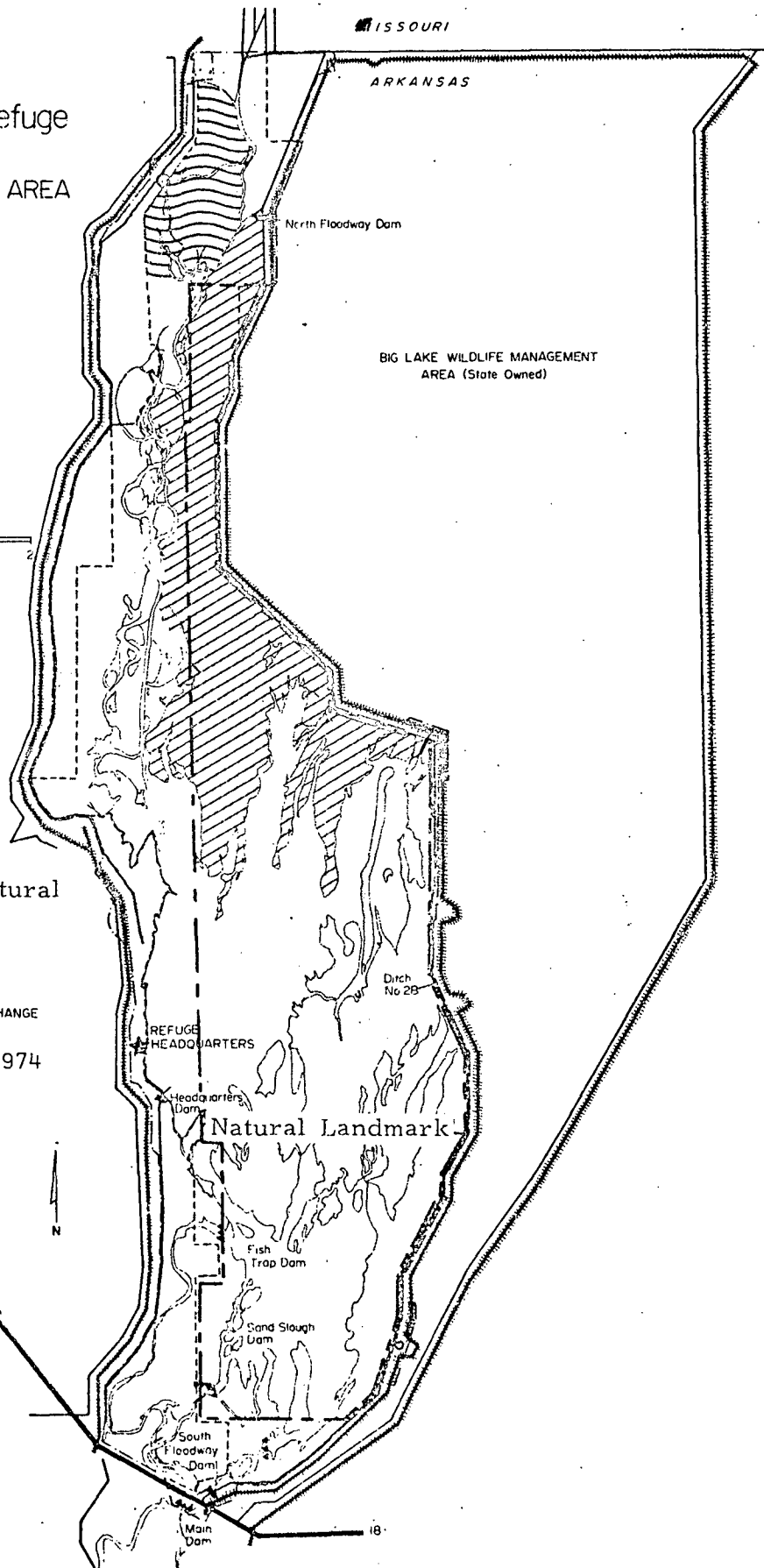
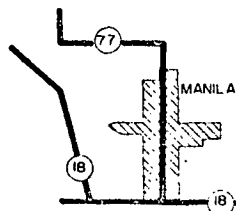
BIG LAKE
National Wildlife Refuge
 Mississippi County, Arkansas
WILDERNESS STUDY AREA



- LEGEND**
- - - REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - ▨ DIKE
 - - - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ▬ ROAD
 - ▨ Proposed Wilderness
 - ▨ Research Natural Area

PRELIMINARY - SUBJECT TO CHANGE
 DECEMBER, 1973

Revised June 1974



I. DESCRIPTION OF THE PROPOSED ACTION

The U.S. Fish and Wildlife Service, U.S. Department of the Interior, proposes that 1,818 acres of the Big Lake National Wildlife Refuge be designated as a unit of the National Wilderness Preservation System. The proposed wilderness is in a single tract entirely within the present refuge boundary. (See map, page ii) The remaining 9,220 acres within the study area are not considered suitable as wilderness.

The initial wilderness study of the Big Lake Refuge indicated that no part of the refuge was suitable for recommendation as a unit of the National Wilderness Preservation System. A non-suitable proposal was discussed at a public hearing held in Manila, Arkansas on April 16, 1974. As a result of strong public feeling favoring wilderness designation of a portion of the refuge, an area of 1,818 acres having wilderness characteristics is proposed for wilderness status.

The Wilderness Act of 1964 (P.L. 88-577:78 Stat. 890-896) directed the study of every roadless area of 5,000 acres or more and every roadless island within the National Wildlife Refuge System to determine the suitability or non-suitability of each area for inclusion in the National Wilderness Preservation System. In fulfilling this responsibility, a full and comprehensive study has been made of the proposed area.

This environmental impact statement examines the proposed action in accordance with the National Environmental Policy Act of 1969.

The refuge was established August 2, 1915 by Executive Order 2230 on land reserved from the public domain. The Big Lake National Wildlife Refuge was established primarily to provide wintering habitat for waterfowl. Refuge responsibilities now include major considerations for waterfowl, endangered species, native wildlife, public use, and protection and preservation of the ecosystem.

Refuge objectives include the following:

1. To develop and manage the refuge for a full spectrum of wildlife including rare and endangered species that use the refuge and provide habitat capable of supporting (1) peak populations of 35,000 ducks of various species, (2) 1,000 Canada geese, (3) production of 4,500 ducks including 4,200 wood ducks, 200 hooded mergansers, and 100 mallards, and (4) sufficient numbers of other migratory and native wildlife for frequent viewing by refuge visitors.
2. To promote opportunities for environmental education.
3. To promote wildlife-oriented recreation, primarily fishing and wildlife observation, on the refuge.

Big Lake Refuge is located in Mississippi County, Arkansas, in the extreme northeastern part of the State. It lies immediately east of Manila, Arkansas and extends from State Highway 18 north to the Missouri State Line. It is about 20 miles west of the Mississippi River (see location map, page i). This proposal for wilderness designation of federally

owned lands considered the following factors:

1. The effects of maintaining 1,818 acres of the Big Lake National Wildlife Refuge in a natural state.
2. The effects of wilderness on existing and future public use of the area.
3. The impact of wilderness on existing and future economic, cultural, and social values.
4. The effect of wilderness on existing and planned development outside the proposal.
5. The effect of wilderness on refuge programs and the attainment of refuge objectives.

If the proposal is adopted, the net environmental result will be Congressional classification of 1,818 acres of federally-owned land for the use and enjoyment of the American people in such a manner that will leave the land unimpaired for future use and enjoyment as part of the National Wilderness Preservation System. Present refuge objectives can be met.

Proposal for Inclusion

The proposed wilderness unit is a cypress-timbered area bounded on the north by the north floodway dam, on the east by the west bank of ditch number 28, on the northwest by the east bank of the main channel of Little River, on the southwest by the open water of Big Lake, and on the south by a small natural channel between the lake and ditch number 28.

The proposed wilderness contains no roads or other man-made facilities or improvements. Habitat manipulation has never been practiced on the area and the timber is virgin except for a narrow corridor which was cleared for a power line right-of-way a number of years ago. The power line was not extended across the refuge, and the scar has since partially healed. Under wilderness designation, the area would continue to be protected and managed as a natural area. Hunting, fishing, and other public uses of the area will continue.

Proposal for Exclusion

Lands found unsuitable for wilderness total 9,220 acres. These lands include (1) various permanent structures, (2) planned refuge facilities that would conflict with wilderness, (3) areas currently under habitat management manipulation, and (4) areas subject to the effects of current and planned Corps of Engineers and Drainage District projects.

Management of Big Lake down through the years has been influenced by adjacent and nearby Corps of Engineers' developments, local drainage district developments, and agricultural demands for better drainage. These influences currently exist and will undoubtedly continue. Silt-laden flood waters from agricultural lands in southeastern Missouri flowing onto the refuge have caused deterioration of fish and wildlife habitat.

Past and present management of Big Lake has been essentially a stable level impoundment. Water management affects all refuge lands except

subdiked areas, some timbered lands near the north end, and a few small, high-elevation areas on the edges of the refuge. Stable level management provides good conditions for duck production, fishing, and wildlife-oriented recreation. Drawdowns or other forms of management would be more advantageous for waterfowl food production and could be implemented if the need should become sufficient to warrant more intensive management.

In addition to stable water management, other habitat management includes pest plant control wherever needed, silvicultural practices on certain areas, and crop production on approximately 400 acres. Wildlife management includes (1) protection, hunting, and other wildlife control programs where needed as a management tool, (2) provision of several hundred nesting boxes and facilities for wood ducks, and (3) fishery programs that favor sport fishing. Public use primarily consists of sport and commercial fishing, wildlife observation, environmental education, and hunting for resident upland game.

Inter-relationship with Other Projects, Proposals or Jurisdictions

Refuge projects akin to wilderness include (1) a 500-acre Research Natural Area Type 101, Bald Cypress, located to the extreme northwest immediately across Little River from the proposed wilderness and (2) the proposed area for inclusion in the Registry of Natural Landmarks within the eastern deciduous forest theme which overlays much of the proposed wilderness area. (See map, page ii)

Since the early 1900's Big Lake has been affected by various drainage and flood control projects. A large levee on the west boundary of Big Lake was built in about the year 1900 by the St. Francis Levee District for the purpose of confining floods to Big Lake and Little Rivers. In the early 1920's drainage interests dug a 100 foot wide ditch down the east boundary of the refuge from the Missouri-Arkansas State Line, south to Arkansas Highway 18. A levee was constructed with the spoil from the ditch (known as Ditch 28). The purpose of the ditch and levee was to speed drainage from Missouri around Big Lake and to confine overflows to the Big Lake area.

At the time of refuge establishment, borrow pit and flowage rights were outstanding to Mississippi County Drainage District No. 16 on the west side of the refuge; levee right-of-way to the St. Francis Levee District; right-of-way for J.L.C. & E. Railway along the south boundary; and right-of-way to Mississippi County Drainage District No. 17 on the east boundary of the refuge for Ditch 28.

In the mid-1950's, farming interests sought to further improve drainage of land in Missouri by improving flowage through Big Lake. The U.S. Army Corps of Engineers, acting in behalf of the farm interests, coordinated their planning of the project with the U.S. Fish and Wildlife Service, under the provisions of the Fish and Wildlife Coordination Act. This project is under construction at the present time and will not be completed for several years. (See map, page 8a).

The Arkansas Game and Fish Commission administers the Big Lake Public Hunting Area immediately adjacent to the refuge on the east. In 1955, the Fish and Wildlife Service and the Arkansas Game and Fish Commission entered into an agreement providing for proper use and conservation of water in connection with the two areas. The two areas are similar ecologically and complement each other.

The Wapanocca National Wildlife Refuge lies approximately 40 miles south of Big Lake, while Hatchie and Reelfoot National Wildlife Refuges are approximately 60 miles to the southeast and northeast, respectively, in Tennessee. Mingo National Wildlife Refuge is approximately 75 miles to the north of the refuge in Missouri. Approximately 1,700 acres within the Mingo Refuge have been proposed for wilderness designation.

Aside from the Big Lake National Wildlife Refuge and the adjacent Arkansas Game and Fish Commission Public Hunting Area, there are few outdoor recreational facilities in the area. The Hampson Museum State Park is about 30 miles south and Crowley's Ridge State Park is about 40 miles west. Arkansas Game and Fish Commission also controls lands along the St. Francis River about 20 to 30 miles to the west and south. The Mississippi River, 20 miles to the east, provides a limited amount of outdoor recreation.

The Arkansas Outdoor Recreation Plan contains a section on wilderness which recognizes several potential wilderness areas within the State,

among them is Big Lake Refuge Wilderness Study Area. Thus, the proposal is compatible with current State planning efforts.

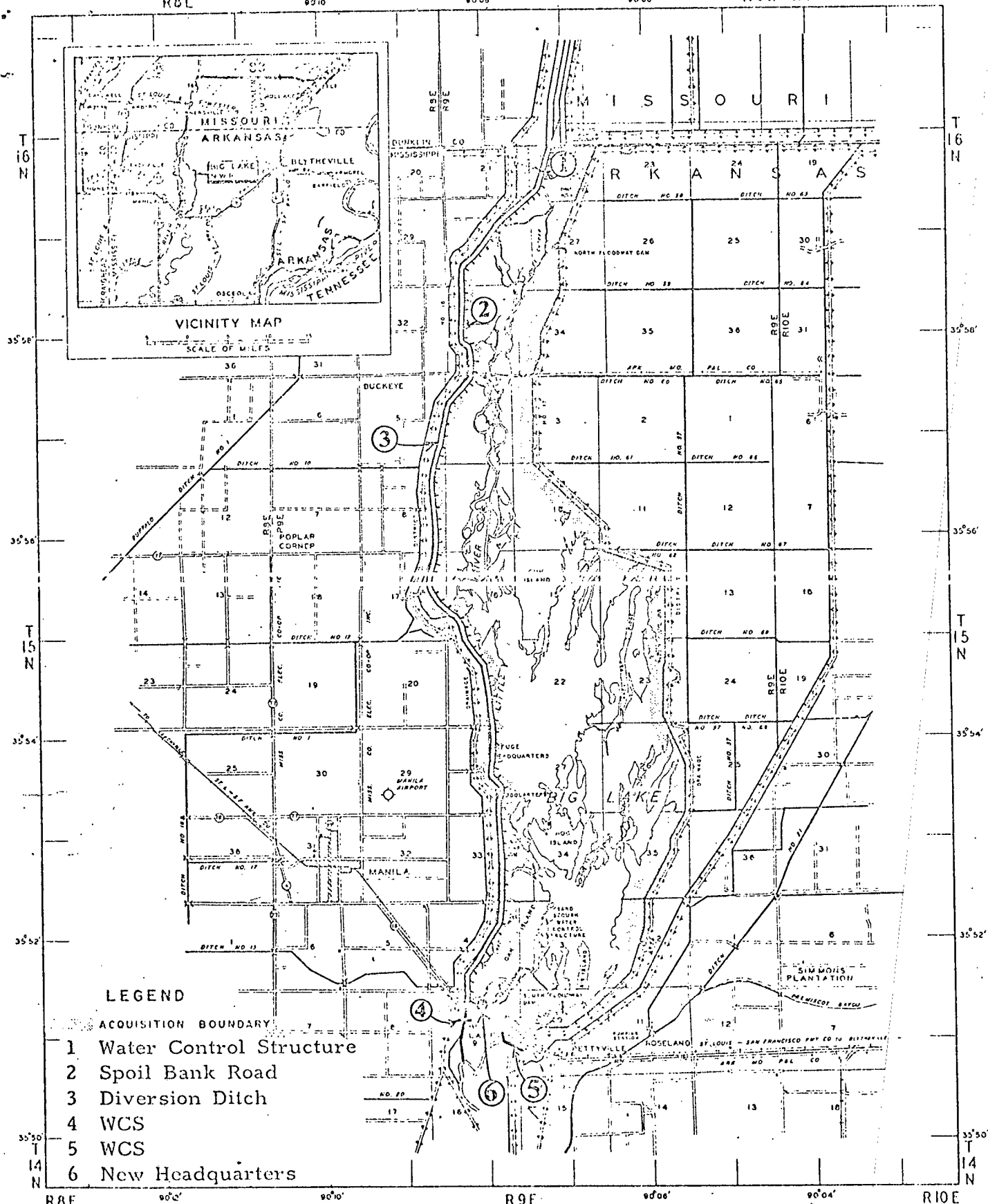
Arkansas has recognized the need for comprehensive land and water management planning. Committees have been appointed by the Governor to gather data and recommend legislative action to implement such plans. No local recreational or land use plans are known to exist.

CORPS OF ENGINEER'S PROJECT BIG LAKE NATIONAL WILDLIFE REFUGE

MISSISSIPPI COUNTY, ARKANSAS

UNITED STATES
DEPARTMENT OF THE INTERIOR
R8E

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
R9E



LEGEND

ACQUISITION BOUNDARY

- 1 Water Control Structure
- 2 Spoil Bank Road
- 3 Diversion Ditch
- 4 WCS
- 5 WCS
- 6 New Headquarters

R8E
COMPILED IN THE BRANCH OF ENGINEERING
FROM BASE BY U.S.G.S. AND AERIAL
PHOTOGRAPHY

FIFTH PRINCIPAL MERIDIAN

Scale
0 100 200 300 400 CHAINS
0 1 2 3 MILES



TOWNSHIP
DIAGRAM

MEAN
DECLINATION
1903

ATLANTA, GEORGIA

FEBRUARY, 1963

48 ARK. 79 40A

II. DESCRIPTION OF THE ENVIRONMENT

Location

Big Lake National Wildlife Refuge is located in Mississippi County, Arkansas, in the extreme northeastern part of the State. Manila is about 3 miles to the west and Blytheville is 15 miles east. State Highway 18 crosses the refuge near its southern boundary and the Missouri-Arkansas State Line forms the northern boundary.

Population

The 1970 Arkansas population was 1,923,295 while that of Mississippi County was 62,060. Manila has a population of 1,961 and Blytheville, the nearest sizeable city has a population of 24,752.

History

Due to its wet and swampy conditions, the "sunk land" of Mississippi County was one of the last areas of significant size in Arkansas to be settled.

At the time of Marquette's exploration of the Mississippi River in 1673, a tribe of Indians who called themselves "Mitchigameans" occupied the lands near the mouth of the St. Francis River. In all probability, bands from this tribe also inhabited the Little River and Big Lake area. By the time white men arrived in significant numbers the Indians had been removed to Indian Territory.

Early history of white settlement is obscure. Up until shortly before the turn of the twentieth century, only a few trappers were known to inhabit the Big Lake Area. By 1895 civilization had grown up around the sunk

lands, which were primarily used as hunting and fishing grounds. Soon, however, the virgin hardwood timber was exploited and within a decade drainage projects turned the land toward agriculture which dominates to the present. Primary crops are cotton, soybeans and wheat. Little of the vast timber remains outside Big Lake and St. Francis Lake floodways.

Topography

Northeastern Arkansas is characterized by the very flat terrain of the Mississippi River Alluvial plain. The lands of the refuge range in elevation from 230 feet to 240 feet m.s.l., dropping less than one foot per mile over its 11 mile length.

Climate

The climate is typical of the Mississippi Delta, having moderately cold winters and hot, humid summers. Precipitation averages 54 inches annually, but is highly variable, ranging from 45 to over 60 inches. Rains are usually heaviest during March and April. October is normally the driest month. The frost-free period normally runs from March 15 to October 15. Temperatures normally range down to 5-10 degrees Fahrenheit during the December to February period, but have gone as low as -11 degrees in 1966. Summer temperatures routinely exceed 100 degrees from June through August.

Soils

Soils of the Big Lake area are mostly Class IIw, and IIIw, poorly drained, plastic when wet and cracking when dry. Soil textures are mostly clays and clay loams with silty, sandy or clayey subsoils. Refuge soil

series include Sharkey, Mhoon, Tunica, Dundee and the Dundee-Crevasse-Forestdale complex.

Geology

Big Lake is in an area known as the "sunk lands", which are thought by many to have been caused by the New Madrid Earthquake of 1811-1812. The sunk lands are limited primarily to the flat bottom lands of Mississippi, Little, and St. Francis Rivers. These lands are found between the higher elevation ridges, namely: (1) between the Chickasaw Bluffs and the Tiptonville-Blytheville line of doming, (2) between the dome mentioned and the prairie ridge extending from Big Lake to beyond Malden, and (3) between the prairie indicated and the Crowley Ridge. Sinking doubtless occurred at many other points, as, for instance, at New Madrid, but in general its occurrence can now be recognized only on the bottom lands where the obstruction of drainage makes it apparent.

Geologists think the lake was formed much earlier than the earthquake, perhaps 1,000 years ago, when the Mississippi River attempted to change its course and cut across Little River, backing up water in the old stream channels that the river had formed over a period of many years. Big Lake, when it was formed, was held by a natural dam or levee. The Mississippi River, when it intercepted Little River, deposited great quantities of silt over the lands south of the point of interception, therefore effectively blocking the flow of Little River and holding back the lake. There was not actually a definable dam or levee holding back the lake but rather a general area of silt deposition. This accreted area extended from Big Lake several miles to the south.

Each year the Mississippi River and other streams overflowed their banks and this action caused accretion, which had the effect of maintaining the dam. However, once man began to control flooding, rivers were confined to their channels, and there were no great deposits of silt. Accretion was halted. Little River soon eroded a channel through the area which held the lake. During the early 1930's, Big Lake began to dry up each summer. Man-made structures were then substituted for the natural dam to hold the lake. Even though the lake level today is essentially the same as it was hundreds of years ago, it could not be maintained without the assistance of man.

Water

As drainage improvements were made in the 2,500 square mile Little River watershed in Missouri, Big Lake's problems increased. The lake became a sump and was subjected to periodic floods which reached greater elevations than any time before.

The lands of the refuge range in elevation from 230 feet up to 240 feet m.s.l. Elevations below 233.3 feet are permanent water. Water levels on the refuge may fluctuate during periods of flooding from five to eight feet and inundate 99 percent of the refuge.

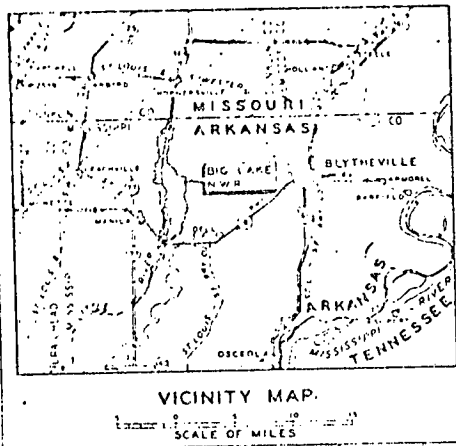
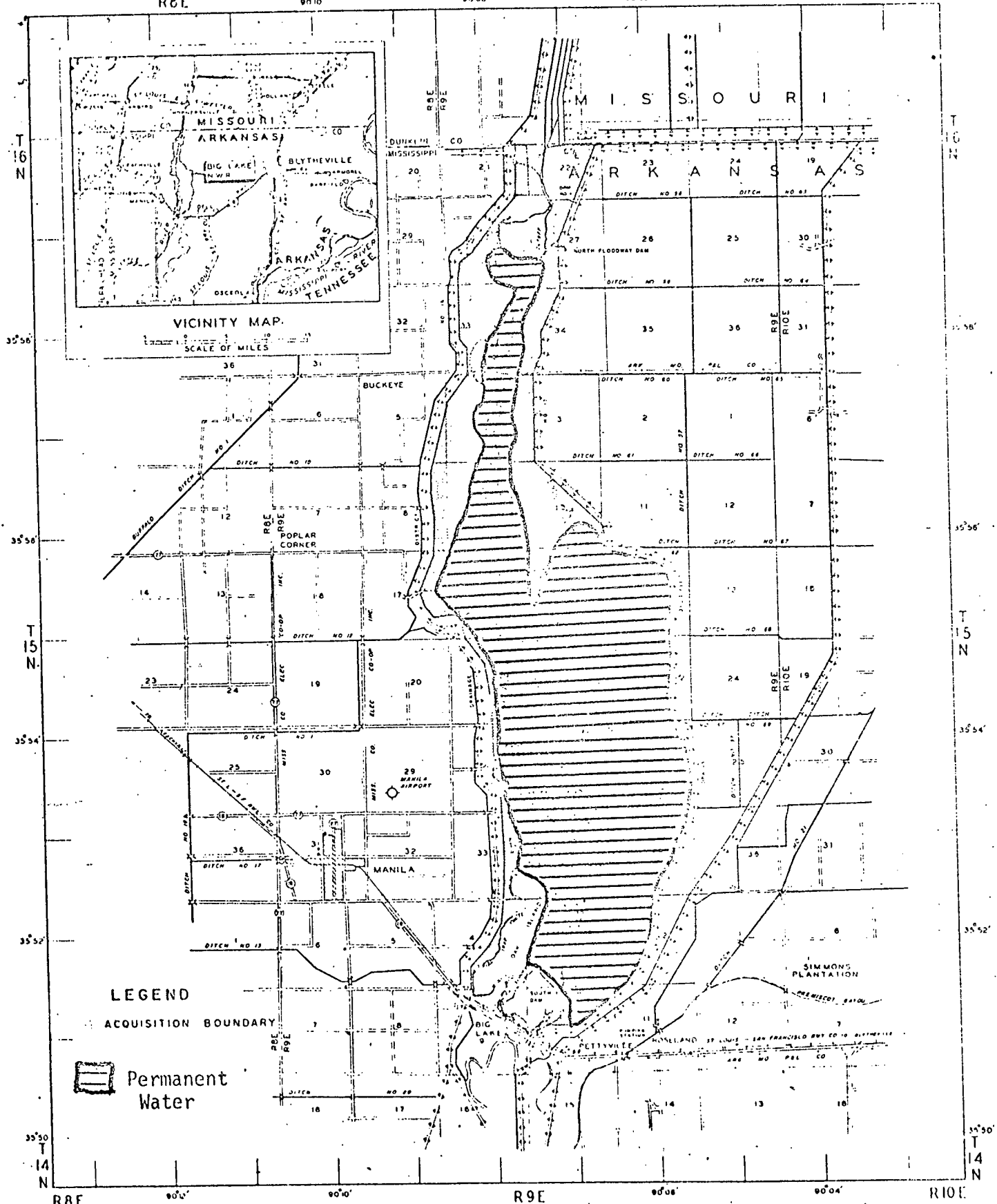
The refuge includes 8,138 acres of permanent water interspersed within timbered swamplands. (See map, page 12a) The openings range in size from less than an acre to more than a thousand acres. The water is managed at a depth of less than 4 feet. At normal levels, the lake discharges water at a rate of 1,000 cubic feet per second.

BIG LAKE NATIONAL WILDLIFE REFUGE

MISSISSIPPI COUNTY, ARKANSAS

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



LEGEND

ACQUISITION BOUNDARY



Permanent
Water

R8F
COMPILED IN THE BRANCH OF ENGINEERING
FROM BASE BY U.S.G.S. AND AERIAL
PHOTOGRAPHY

FIFTH PRINCIPAL MERIDIAN

Scale 0 1 2 3 4 5 6 7 8 9 10 MILES



TOWNSHIP
DIAGRAM

MEAN
DECLINATION
1965

ATLANTA, GEORGIA FEBRUARY, 1963

REFUGE LANDS UNDER PERMANENT WATER

4R ARK. 79 404

Spring floods raise water levels in the lake about five feet (to elevation 238 feet m.s.l.). At this level the rate of discharge from the lake is 17,500 cubic feet per second. One year out of five, the lake rises nine feet above normal to elevation 242 feet m.s.l. At this level, the rate of discharge from the lake is 40,600 cubic feet per second.

The lake acts as a sump and receives all its inflows of water from agricultural lands. The waters drain rapidly into the lake by the several hundred miles of ditches in the watershed. A rise usually continues for three days regardless of magnitude and takes approximately a week to subside.

Water quality in Big Lake is very poor. The Arkansas Pollution Control Commission has sampled waters from the lake since 1968 and their information indicates that there are no significant amounts of pesticides in these waters; however, residue and turbidity are quite high. The total residues average 322 milligrams per liter. The maximum level found was 868 mg/l and the minimum level 117 mg/l. Turbidity averages 143 Jackson units and ranges from a maximum of 1,500 to a minimum of 20 units. These levels correspond with maximum and minimum inflows.

Through the swamps the water depths vary from an inch to a foot or more. The majority of the lands of the refuge is timbered swamp. The 5,500 acres of these lands remain under at least a few inches of water when the lake is at its normal level.

Vegetation

Almost all of the lands for many miles around the refuge have been converted to agricultural uses. Primary crops are cotton, soybeans, and wheat. Big Lake and the adjacent State-owned public hunting area remain essentially an island in a vast sea of cleared land, constituting the only remaining timberlands of significance in Mississippi County.

Approximately 8,000 acres of the refuge support bottomland hardwood and cypress-swamp timber. Of this acreage, nearly 7,000 is thought to be virgin timber. Small areas near the west boundary have been cut over in the past, largely prior to refuge acquisition. (See map, page 15a).

Timber types can largely be delineated on the basis of elevation, which at Big Lake indicates soil type and the degree of soil wetness. The highest, best-drained soils are found above elevation 236 m.s.l. and are generally confined to small areas along the refuge boundaries.

Predominant species are sycamore, pin oak, sweetgum, pecans and both black and white oaks. Slightly below this zone, down to 235 feet m.s.l. riverbirch, cottonwood, hackberry, overcup oak, mulberry, box elder and a few bald cypress and large willows are found. (See Timber Type Map-Zone 1, page 15b)

About half of all refuge timber occurs in the zone between 235 feet m.s.l. and 232 feet m.s.l. Much of this area is covered with at least a few inches of water most of the year. The dominant species is bald cypress, often in pure stands up to 150 feet tall. None are thought

to date earlier than the New Madrid Earthquake of 1811-12. Associated species are green ash, water elm, water locust, water tupelo, and an occasional overcup oak. (See Timber Type Map-Zone 2, page 15b)

Approximately 40 percent of the refuge timber occurs at elevation 232 feet m.s.l. and is flooded to a depth of one foot most of the year. Bald cypress also dominates this type, making up about 60 percent of the stand. Green ash, water locust and water elm are associated, and brushy species including swamp privet and willow appear. (See Timber Type Map-Zone 3, page 15b)

Below elevation 232 feet m.s.l., willow predominates. Swamp privet and buttonbrush are associated. These stands are flooded to a depth of 18 inches most of the year. (See Timber Type Map-Zone 4, page 15b)

Historically, Big Lake produced great quantities of aquatic plants, primarily lotus, duckweeds, and pondweeds, but silt-laden waters flowing into Big Lake has resulted in a deterioration of aquatic plant growth. Due to these changes, it was no longer possible to provide an abundance of waterfowl food for the thousands of ducks and geese which were accustomed to migrating through the area. To this day, there has never been a satisfactory remedy for this loss of productivity. The refuge acquired or cleared approximately 400 acres of land suitable for the production of waterfowl food, but this could not begin to replace the volume of food plants that has been lost.

REFUGE TIMBER LANDS

BIG LAKE National Wildlife Refuge

Mississippi County, Arkansas

WILDERNESS STUDY AREA



- LEGEND
- REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - DIKE
 - CLOSING ORDER BOUNDARY
 - TIMBERED REFUGE LAND
 - ROAD

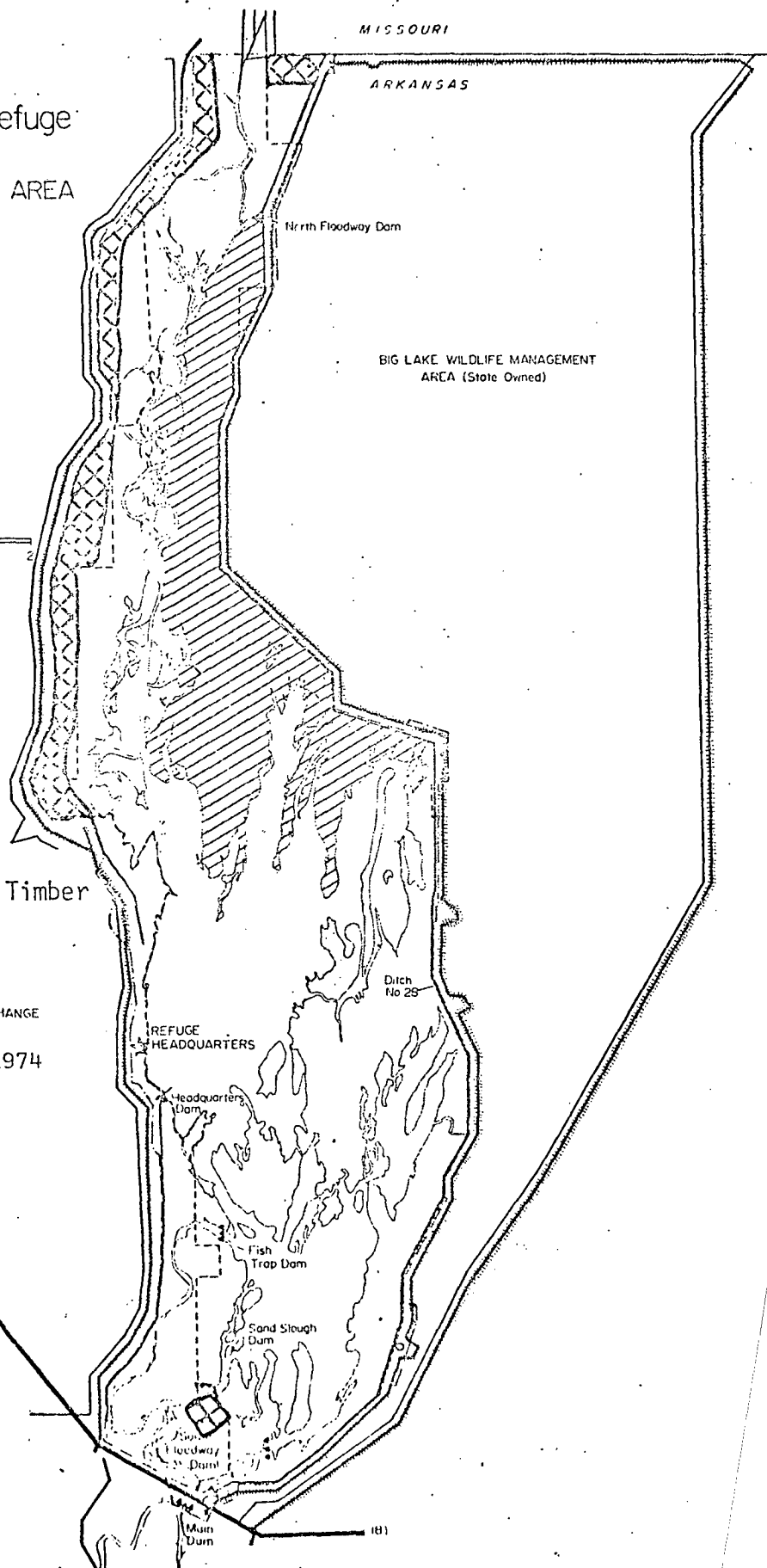
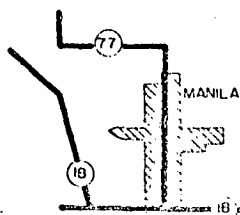
Proposed
Wilderness



Cut-over Timber

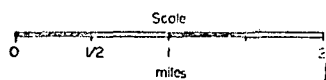
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TIMBER TYPES OF BIG LAKE

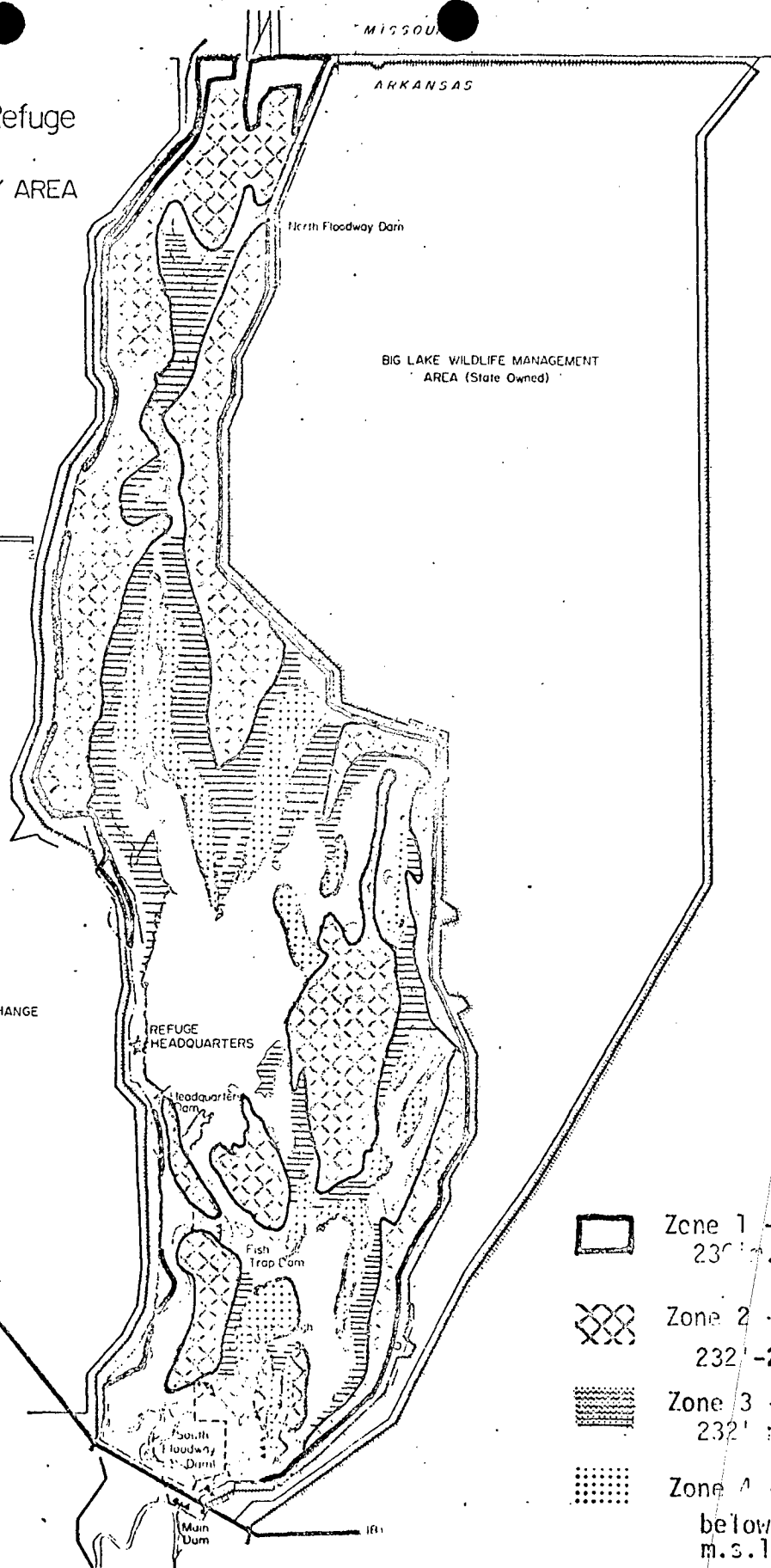
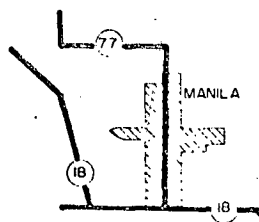
BIG LAKE
National Wildlife Refuge
Mississippi County, Arkansas
WILDERNESS STUDY AREA



- LEGEND
- REFUGE BOUNDARY
 - ⊙ HISTORIC SITE
 - DITCH
 - ▨ DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ROAD



PRELIMINARY - SUBJECT TO CHANGE
DECEMBER, 1973



- ▨ Zone 1 - above 230' m.s.l.
- ▨ Zone 2 - 232'-235'
- ▨ Zone 3 - 232' m.s.l.
- ▨ Zone 4 - below 232' m.s.l.

Economic Use

The sale of refuge products, in the past, has been insignificant, and this is not likely to change unless the refuge initiates an active timber management program which is not planned within the foreseeable future. Currently commercial fishing is the only economic use permitted. In 1972, the refuge issued 21 permits for commercial fishing in Big Lake; however, most permittees fish for pleasure rather than for economic benefits.

The refuge's timber resource of cypress and hardwoods has considerable potential value on an annual sustained yield basis. Approximately 6,500 acres of refuge land support stands of commercial timber. These lands are capable of producing about 300-400 board feet per acre per year or approximately 2,300,000 board feet annually. Based on refuge objectives, these lands now contribute most for public enjoyment while providing wildlife cover and limited food value. From a wildlife management standpoint there is little need for timber management on Big Lake at the present time in order to meet current wildlife objectives.

Mississippi County receives under the Refuge Sharing Act, an annual payment equal to three-fourths of one percent of the value of refuge lands (excluding Public Domain) for schools and roads. In 1973, the County received \$1,147.07.

Minerals

Bureau of Mines Bulletin 645, "Mineral Resources and Industries of Arkansas" indicates that sand and gravel is the only mineral commodity

produced commercially in Mississippi County. Most of the sand and gravel is obtained from the present bed of the Mississippi River and from abandoned ancient channels. The supply is essentially inexhaustible as a result of a constant replenishment of river channel deposits. No sand or gravel beds have been identified on the refuge. The bulletin also reports that petroleum and natural gas potentials have not been satisfactorily or exhaustively tested.

The Arkansas Geological Commission reports that there is no commercial oil or gas production in the county. The last test known to them was a dry hole drilled in 1939.

Wildlife

Peak waterfowl populations normally reach 30,000 during the winter season. Mallards account for about 90 percent of the waterfowl use while most other duck species that are common in the Mississippi Flyway make up the remaining use. Canada geese usually number about three hundred. Wood ducks and hooded mergansers nest on the refuge. Wood ducks produce about 2,000 young birds annually, largely because of an intensive nest box program. The number of mergansers is much smaller. Herons and egrets are numerous on the refuge during the summer months. Terns, gulls, snipes, and woodcocks are present on the refuge at various times of the year. Most birds common to Arkansas, Missouri and Tennessee are well represented among the more than 200 bird species that visit or live year-round on the refuge. Almost half of these species nest on or near the refuge. Turkeys have been re-

introduced on adjacent State lands by the Arkansas Game and Fish Commission.

Endangered, rare, or threatened species that have been seen on the refuge include the bald eagle, osprey, brown pelican, wood ibis, and peregrine falcon. The eagle and osprey rarely use the refuge and the other species have been sighted only one or two times. The proposed wilderness area, as well as other parts of the refuge, provides excellent habitat for the endangered Bachman's Warbler. Although this species has not been sighted on the refuge, northeast Arkansas is within its normal range.

Raccoons, muskrats, beaver, and mink are abundant on the refuge. Bobcats, opossums, skunks, red and gray foxes, and white-tailed deer are common. In addition to the birdlife, wildlife on the refuge includes 22 species of mammals, 27 of reptiles, 8 of amphibians, and 38 of fish and minnows. Hunting is permitted for squirrels and raccoons in accordance with State and Federal regulations.

Developments

Big Lake has never been intensively managed. The refuge is almost free of roads. Small areas of land bordering the lake and swamps have been cleared for agricultural purposes and road trails have been opened up to these fields. All fields are located along the west and south boundaries of the refuge. There are no roads on the east and north sides of the refuge. There are no roads, agricultural fields, or water developments within the proposed wilderness.

The refuge is bordered on all sides by levees, canals, roads, and other management and water control structures. These facilities influence the entire ecosystem of the refuge and provide potential for additional influence of the habitat through management.

During the early 1930's, a water control structure was constructed on the north end of Ditch 28. This structure was to divert flows into the lake which had been going down the ditch and around the lake. A structure was later constructed on the south end of this ditch near State Highway 18 to hold water in Big Lake during low stages.

Before the North Dam structure in Ditch 28 was completed, a dredge was placed on the refuge and the old river channels on the north end were deepened so that waters could be diverted by the water control structure into the lake. Today, the evidence of this dredging is still visible from the spoil that was piled along the sides of the channels.

In 1939, during the days of the Civilian Conservation Corps, the Sand Slough Dam and a water control structure were built. This permitted the lake to be held at its normal level or to be drawn down if desired.

Planned and existing refuge developments consist of:

1. The Corps of Engineers project on the west side,
including the following facilities pertinent to refuge management:
 - (1) Canal with 120-foot wide bottom
 - (2) Spoil bank road with all-weather surface

(3) Four water control structures

(4) Relocation of Refuge headquarters to the south
end near Highway 18.

2. Habitat developments: (See map, page 21a)

(1) Sand Slough subimpoundment - 1800 acres

(2) Farm Units - 400 acres

(a) Mud Slough - 151 acres

(b) Fishtrap-Oak Island - 90 acres

(c) B.C.-Osborn - 85 acres

(d) Hill Farm - 40 acres

(e) Other scattered tracts - 34 acres

Farm lands will be reduced to 292 acres because
of the Corps of Engineers project.

3. Public Use Facilities: (See map, page 21a)

(1) Picnic area

(2) Observation Tower

(3) Boat Launching Ramp

(4) Proposed Recreation Area

(5) Proposed Interpretive Center

4. Refuge Headquarters: (See map, page 21a)

(1) Office Building

(2) Shop-Storage Building

(3) Open Equipment Building

(4) Residence

(5) Elevated Equipment Yard

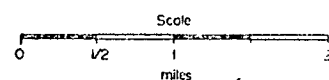
5. Miscellaneous: (See Map, page 21a)

(1) Roads, 3 miles unimproved

(2) Cleared levee right-of-way, 2 miles along Sand Slough

None of these developments is within the proposed wilderness unit. The effects of existing and proposed water-control developments affect the wilderness primarily through alterations of water quality and levels.

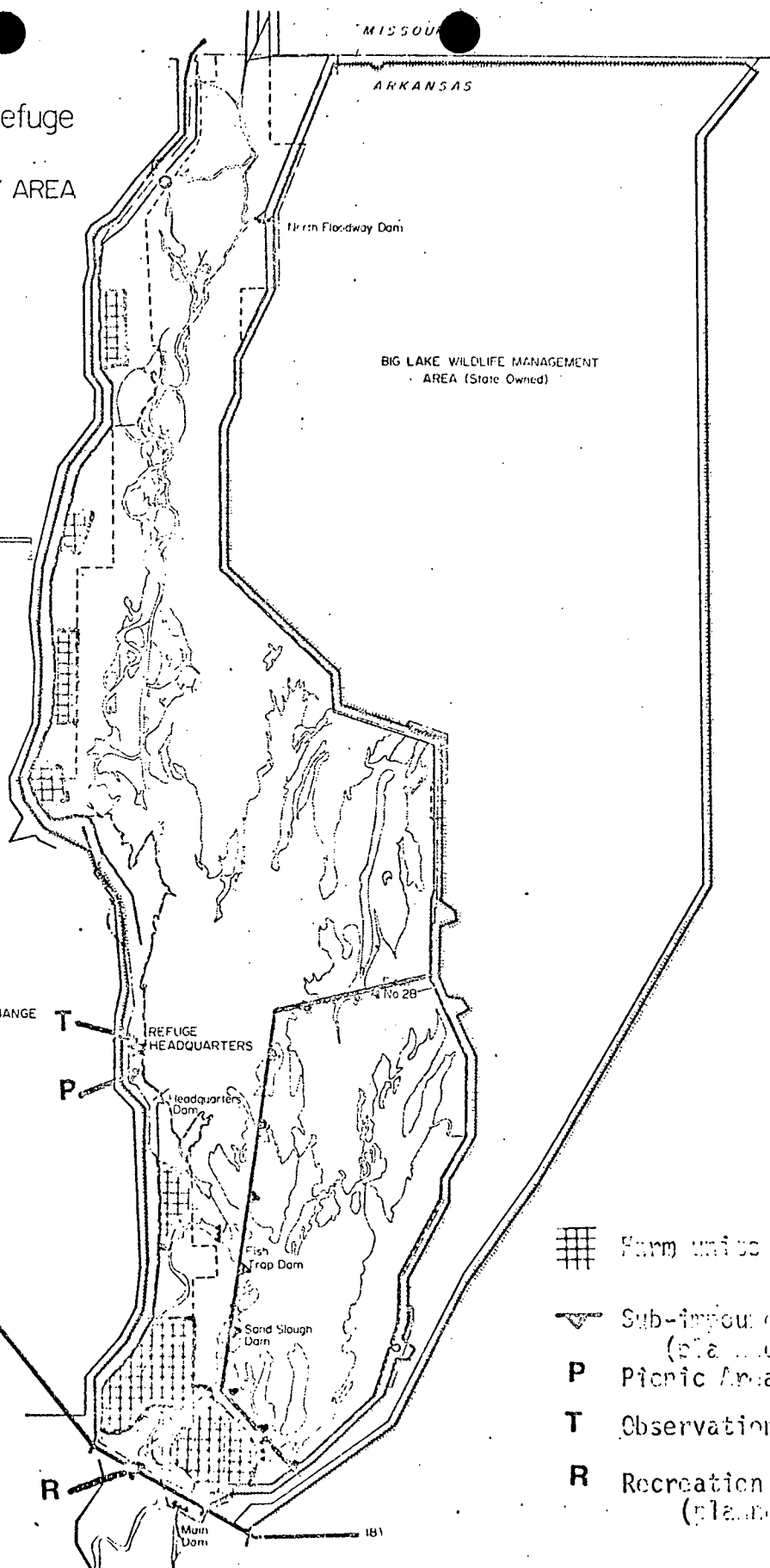
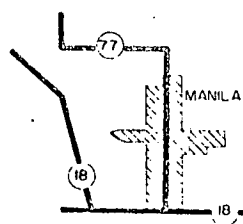
BIG LAKE National Wildlife Refuge Mississippi County, Arkansas WILDERNESS STUDY AREA



- LEGEND
- REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ROAD



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- ▨ Farm units
- ▽ Sub-irrigation (planned)
- P Picnic Area
- T Observation Tower
- R Recreation Area (planned)

Historic and Archaeological Sites

Big Lake itself is historically significant. The lake was near the center of the New Madrid Earthquake that began in 1811. The lake was also the center of a 458,000 acre land dispute in 1852 between Jacques Clamorgan of the Missouri Trading Company and the United States Government. This case was settled in court in favor of the United States. At this time the Arkansas Historic Preservation Program has no listings for distinct historic entities within the confines of the Big Lake National Wildlife Refuge.

The National Register of Historic Places, Federal Register, February 4, 1975, lists no properties on or near the Big Lake Refuge. The nearest sites listed in the Register are the Nodena Site, south edge of Wilson, Mississippi County, Arkansas, and the Langdon Site, north of Hornersville, Dunklin County, Missouri. Mr. Jack E. Porter, Administrator, Historic Preservation Program, in a letter dated February 19, 1973, stated that the Arkansas Historic Preservation Program did not have any listings for distinct historic entities within the confines of the Big Lake National Wildlife Refuge. State Archeologist, Hester Davis, was contacted by letter, February 28, 1973, requesting any available information of the archeological resources. Ms. Davis' response has been of an informal nature and dealing primarily with the Zebree Homestead Site located on the refuge approximately one mile west of the proposed wilderness area. The Zebree site (3MS20, assigned by Arkansas Archeological Survey) was first recorded by the Arkansas Archeological Survey in 1967. On the basis

of preliminary testing in 1968, further excavations were conducted in 1969 under a cooperative agreement with the National Park Service. This work investigated approximately one-fifth of the site. Although the Zebree site is located within the right-of-way of a proposed Corps of Engineers' ditching project, further investigation on this site remained at a standstill until the Fish and Wildlife Service, in accordance with Executive Order 11593, initiated nomination of the site to the National Register of Historic Places. The Zebree site was included in the National Register on May 2, 1975. The Corps has delayed the ditching project until January 1976 for further compliance with applicable portions of Section 106 of the National Historic Preservation Act of 1966 and E.O. 11593.

The refuge has recently completed its survey in compliance with Executive Order 11593. This survey lists two other properties (3MS19 and 3MS25) that have been identified by the Arkansas Archaeological Survey. Both these properties are low knolls that are presently being plowed annually. Both will be destroyed by the planned drainage ditch by Corps of Engineers. Both these sites have been discussed on-site with members of the Arkansas Archaeological Survey, concluding that neither was of sufficient value for inclusion in the National Register of Historic Places.

The E.O. 11593 survey revealed no identifiable archeological resource on the proposed wilderness area or elsewhere on the refuge except for 3MS19, 3MS25, and 3MS20 as identified by the Arkansas Archeological Survey.

Recreation Use

Most of Big Lake's visitors live within a 30-mile radius of the refuge. The majority of the visitor use is for fishing. Only the headquarters area and the far south end of the refuge near Highway 18 can be visited by automobile; however, the second largest category of use is for nature appreciation. In calendar year 1972, visitor use by activities was as follows:

<u>Activities</u>	<u>Number of Visits</u>
Wildlands Interpretive Programs	1,080
Environmental Education	200
Resident Game Hunting	935
Fishing	46,197
Wildlife Observation	3,214
Wildlands Appreciation	3,375
Camping	1,160
Picnicking	1,035
Total Visits	57,196

Less than 1% of use occurred on the proposed area.

Probable Future Environment Without the Proposal

Big Lake National Wildlife Refuge was established to provide suitable habitat for waterfowl and other wildlife. The area of the proposal would most likely remain undeveloped. However, portions of undeveloped land, outside the proposal, will be directly affected by the planned Corps of Engineers flood control project along the west side of the refuge. Based

upon the past history of Big Lake, it is reasonable to assume that drainage and flood control interests will continue to place demands for further construction projects upon the refuge, which could result in deterioration of the refuge environment through ditching, levee building, and alteration of water levels.

Because Big Lake provides one of the few outdoor recreation areas in northeastern Arkansas, pressures for non-wildlife oriented recreational facilities on the refuge will continue. Local interests have asked that refuge lands be developed for camping, picnicking, water-skiing, swimming, and other uses which are not compatible with refuge objectives. Although minor concessions to these demands (picnicking and camping) have been made in the past, current policy precludes these uses.

III. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

Impact on Wildlife

Management to enhance habitat for wildlife would not be possible where physical alteration by mechanical means would be necessary. Certain management measures would alter the habitat to favor certain species.

Management could open the forest canopy in order to provide more food for wildlife, particularly waterfowl, white-tailed deer, turkey and squirrels.

No studies have been made of the habitat potential under intensive management, thus this impact cannot be quantified. The habitat of the proposed area is now in sub-climax to climax condition. It has never been manipulated for wildlife benefits, and there are no foreseeable plans for such activity. The prohibition of this management option is considered insignificant since refuge objectives for wintering duck habitat can be met by retaining the wilderness proposal area in a natural state.

Wilderness designation would provide added protection against habitat destructive encroachments. The added protection afforded by wilderness status would be favorable to the wood ibis, southern bald eagle, osprey, and possibly the Bachman's Warbler, along with other species of colonial and passerine birds which use the habitat of this cypress swamp. Under wilderness status the area would not be developed for public use or other management purposes and therefore would not be subject to disturbances associated with those programs. The flora and fauna of the proposal area would remain in its natural state. Wilderness would not affect fish populations within the proposed area or elsewhere on the refuge.

In summary, the proposal would have negligible impacts on wildlife. Refuge wildlife objectives can be attained under wilderness status, and the added protection against habitat destructive developments would be beneficial to both threatened and non-threatened species of the swamp.

Impact on Water Resources

The water resources of the proposal area are poor in quality due to the large amount of debris and turbidity from extensive drainage of agricultural lands. The occurrence, availability and quality of the water within the proposal area would not be affected by wilderness designation in itself as there are no plans to install water control structures, drainage ditches or pursue other management practices within the proposal area which would impact on this resource. Outside developments which could impact on water quality within the proposal include the Corps of Engineers project on the west side of the refuge which will divert some of the silt and debris-laden waters around the refuge.

To summarize, the designation of wilderness will not directly impact on the water resources of the proposed area but outside developments could upgrade the quality through diversion of silt and debris-laden waters around the refuge.

Impact on Vegetation

Vegetative conditions within the proposal range from near climax to climax cypress-swamp and bottomland hardwood timber. The proposed area is dominated by bald cypress, with such associated species as water ash, water elm, water locust, water tupelo, swamp privet, willow, and buttonbrush. Wilderness designation will provide additional protection to this self-perpetuating natural ecosystem against possible future destruction from ditching to improve drainage on surrounding agricultural lands.

Timber harvest for economic benefit and to alter the habitat for wildlife management purposes would not be possible within the proposal under wilderness designation. There are no foreseeable plans to harvest the timber for either purpose.

In conclusion, wilderness would impact on vegetation by allowing the woodland ecosystem to function in a natural manner, uninterrupted by man-made disturbances.

Impact on Soils

Wilderness status will not permit disturbance of the soil within the proposal by mechanical means, such as ditching or spoil deposit which may be demanded for future drainage and flood control projects.

Wilderness will have no effect, however, on the continuing deposition of silt from floodwaters entering the refuge from agricultural lands in Missouri.

In summary, while soils will be protected from mechanical disturbance, wilderness cannot provide protection against surface soil alteration from silt deposit during annual flood periods.

Impact on Recreational Use

Although no specific use data is available, it is estimated that less than 1% of refuge recreational use currently occurs within the proposed wilderness, due primarily to its inaccessibility (Refer to Table, page 24). The area can only be reached by boat and, except for flood periods, must then be traversed on foot. Wilderness designation, which would prohibit motorized vehicles, would not represent a change from present conditions. There are no plans to develop public use facilities on the area, but wilderness designation will have the effect of precluding potential development.

To those willing to exert the effort necessary to get into the area, wilderness designation will assure a long-term opportunity for limited recreational pursuits in a natural environment. Opportunities would be available for hunting, wildlife study and observation, photography, sightseeing, and other activities compatible with wilderness.

Wilderness designation of this area on Big Lake Refuge would increase public use on the proposed area; however, it is unlikely that the increase would be of such magnitude as to create any additional environmental problem there or elsewhere on the refuge. Public use, primarily squirrel and raccoon hunting and wildlife observation, will continue as in the past on the proposed area. If such use should

create any major disturbances to wildlife or threaten the wilderness character of the proposed area, further controls would be necessary and would be implemented. There would be visual and noise impact from motorboats using adjacent waters and heavy aircraft traffic from the Air Force Base near Blytheville, 15 miles to the east. Some littering and vandalism would be inescapable but within the capability of normal refuge management to control.

In conclusion, wilderness designation will impact on public use by providing wilderness type recreational opportunities. Such use will be compatible with refuge objectives. Over the long term, it is assumed more people will be attracted to the area for wilderness-oriented recreation and overall public use will increase. Present levels of use indicate overcrowding would not be a likely problem in the future.

Impact on the Aesthetic, Historical, and Archeological Values

The proposed action would not in itself change the aesthetic, historic, and archeological values of the area. Wilderness designation would provide added protection against possible destruction of any resource through the exclusion of habitat manipulation by mechanical means. The exploration for and study of archeological sites could be made more inconvenient and costly through the denial of sophisticated mechanical equipment. There would be no impact on the Zebree Homestead-Ancient Indian Village site, located outside the proposal area.

In summary, wilderness designation would have beneficial impact on aesthetic, historic, and archeological values by providing added legislative protection against alteration or destruction of the area. Increased visitation however, might possibly result in some damage to the area's undiscovered cultural resources.

Impact on Economy

Designation as wilderness would preclude all exploration, development, and exploitation of mineral resources under the public laws. The only minerals of commercial value that may occur within the proposal area are sand and gravel. The supply of these minerals outside the refuge is considered inexhaustible, thus this impact is minimal.

There are no outstanding mineral rights on the proposed wilderness area, and oil and gas potential are largely unknown. Wilderness will preclude the use of modern equipment in conducting exploration measures and the option to develop any future discoveries of oil and gas would be foregone. Since the region is not considered to hold high potential for such minerals the impact is rated insignificant.

Wilderness would prohibit physical alteration of the area to facilitate drainage projects. It is known that additional drainage, beyond that currently planned by the Corps of Engineers, is desired by agricultural interests in southeastern Missouri. Wilderness would have an impact on these interests, in that facilities within the proposed area could not be developed. Such requirements are unknown presently, but are possible.

In summary, should petroleum resources be discovered or the need for timber products become acute, these resources could not be exploited within the proposed area. Wilderness could have an impact on future drainage needs.

Impact of Developments Outside the Proposal

The Corps of Engineer's project along the west side of the refuge, which is currently under construction, will have an audio impact on the wilderness user during the construction period. New water control features of this project will benefit water quality within the proposal by diverting some of the silt and debris-laden waters around the refuge. Water levels within the proposal can be changed as wildlife, flood control, and drainage needs may require.

Audio and visual impacts from aircraft traffic associated with the Air Force Base at Blytheville, 15 miles east, will be a distraction to the wilderness user. The quality of the wilderness experience will be lessened, but not to a significant degree.

Future needs for additional drainage and flood control facilities within and adjacent to Big Lake Refuge could impact on the wilderness proposal. Specific facilities, location and associated impacts are unknown at present, but are acknowledged as possible.

In summary, minor adverse audio and visual impacts can be expected from known developments outside the proposal, as well as possible beneficial impacts on water quality. Future developments, though unknown at present, could have adverse impacts on the proposed wilderness.

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

There are no mitigating measures included in the proposed action.

V. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

Wildlife

Management to increase food production for wildlife, particularly white-tailed deer, turkey, squirrels, and waterfowl would not be possible within the proposal where physical alteration of the habitat by mechanical means would be necessary. There are no plans for this type of alteration. However, it could conceivably become desirable at some future time and would represent a minor unavoidable adverse impact on hunters and those who enjoy wildlife observation.

Economy

All exploration, development, and exploitation of mineral resources, would be prohibited with designation as wilderness. The potential for oil and gas resources is an unknown quantity. Wilderness designation would preclude removal of oil and gas if deposits of these resources should be discovered.

Timber resources would not be utilized under wilderness designation, representing a potential foregone and an unavoidable adverse impact on private

industry which might eventually wish to harvest the resource.

Should drainage ditches and flood control facilities be found necessary or desirable in future years, they could not be constructed on the area under wilderness designation, representing possible future unavoidable adverse impacts on farmers in Missouri within the area drained by the Little River.

Recreational Use

Use of the wilderness would be limited entirely to those physically capable of traversing the area on foot.

VI. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Lands within the proposal will be managed for natural aesthetic and wildlife values whether or not they are designated as wilderness.

Large numbers of public use visitors, if uncontrolled, would have an adverse impact on the area and damage the environment for years to come.

Interest in oil and gas exploration and development has increased in recent years. The exploitation of these resources is a short-term gain with resultant loss of natural values. Wilderness designation will preclude prospecting and exploration of mineral resources.

Wilderness designation, by its restrictions on methods of transportation, would eliminate much of this use and thus protect the resource and this ecosystem for future generations.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS

The wilderness proposal would commit the resources and land involved for preservation under wilderness classification until such time as Congress might determine that the national interest would be better served by declassification of all or a portion of these lands. If such a need should arise, resources within the wilderness such as timber or minerals could be made available by Act of Congress.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives to the proposal are:

- A. No action
- B. Increase the size of the proposal
 - 1. Addition of open water in Big Lake
 - 2. Addition of lands in the northwestern section of the refuge
- C. Decrease the size of the proposal
 - 1. Delete the area north of and including the abandoned power line right-of-way

The decision concerning the relative suitability of the area for designation as wilderness was based on careful consideration of the expressed desire of the public for a wilderness unit on Big Lake Refuge, wilderness criteria, as established in the Wilderness Act, objectives of the National Wildlife Refuge System, and more specifically, of Big Lake National Wildlife Refuge and management requirements to fulfill those objectives.

A. No Action

Impacts

With no wilderness designation, the area would continue to be managed in a manner that would protect the unique natural character of the land. The potential for uses such as oil and gas explorations would remain within the discretionary authority of the Secretary of the Interior.

This alternative leaves all management options open including habitat manipulation to enhance food production for white-tailed deer, waterfowl and other wildlife species. Timber products could be utilized on a sustained yield basis to the benefit of the local economy although there are no present plans for harvest.

Demands on the refuge for drainage and flood control projects have continued since its establishment. Future demands for additional drainage and flood control facilities are possible and quite probable. Such developments could have strong impacts on the unique virgin timber habitat.

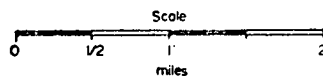
In summary, the short-range impacts are considered minor because of no impending developments or management plans that would upset the natural balance of the area. Long-range impacts could be substantial if management plans change or further flood control or drainage projects are initiated.

B. Increase the Size of the Proposal

1. Increase the size of the proposal by the addition of the 2,638 acres of open water in Big Lake, for a total proposal of 4,456 acres. (See map, Alternative B-1).

BIG LAKE National Wildlife Refuge Mississippi County, Arkansas WILDERNESS STUDY AREA

Alternative B. 1
(Add 2,638 acres of
open water)



- LEGEND
- REFUGE BOUNDARY
 - ⊙ HISTORIC SITE
 - DITCH
 - ▨ DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ROAD

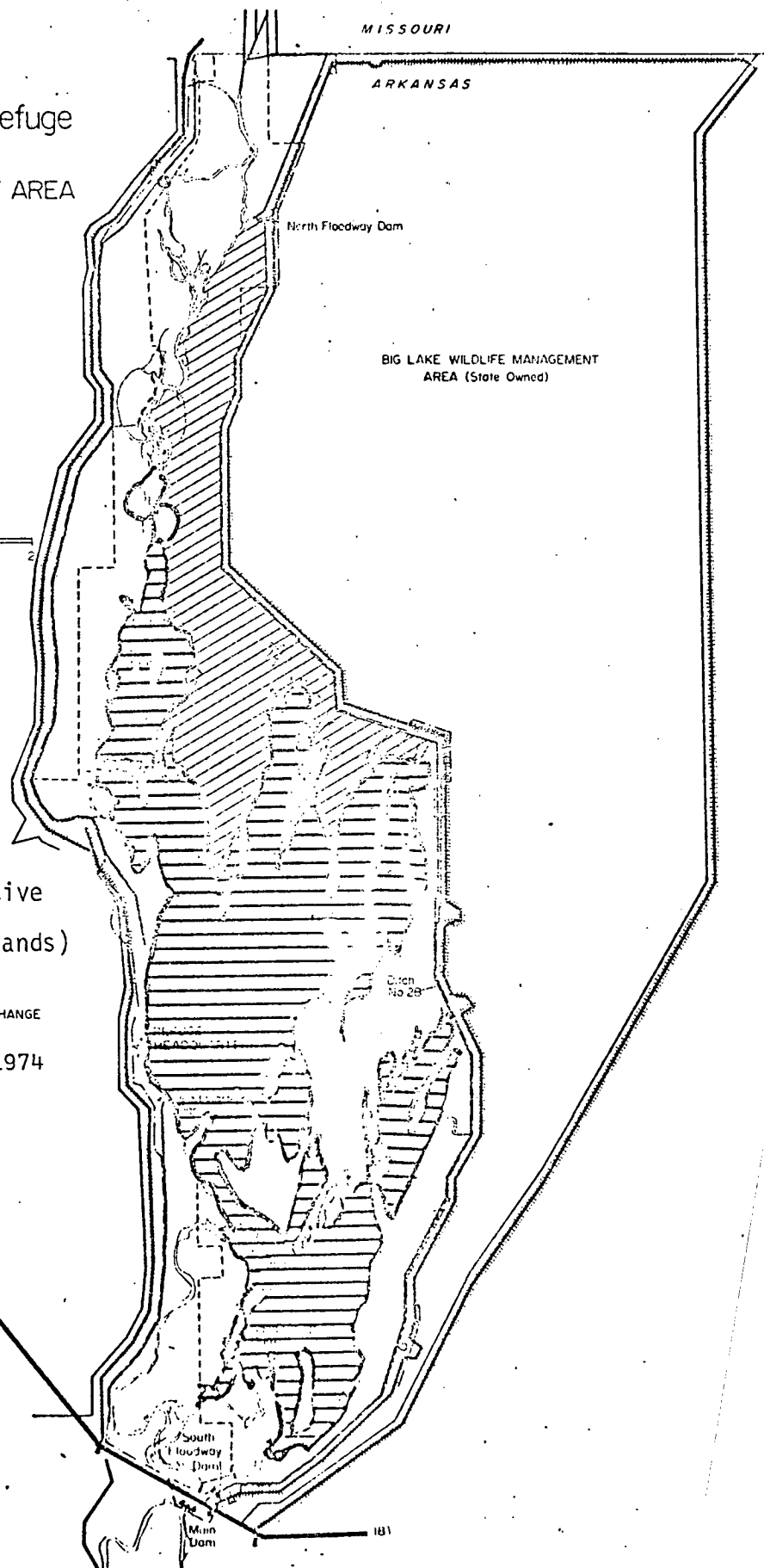
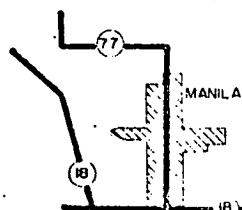
▨ Proposed
Wilderness

≡ Alternative
Proposal
(Added Lands)

N

PRELIMINARY - SUBJECT TO CHANGE
DECEMBER, 1973

Revised June 1974



Impacts

The impacts of this alternative would be the same as those for the proposal, in addition to the following. The addition of open waters of the lake would prohibit management of water levels to benefit waterfowl species using the refuge. Summer drawdown to produce moist-soil foods has been contemplated in the past and may be necessary in the future to produce sufficient food for over 30,000 ducks and geese which use the refuge. Such a change in water management could offset the loss of nearly one-fourth of the refuge agricultural land to the current Corps of Engineer's project along the west side of the refuge.

Including the lake would prevent construction of a planned sub-impoundment along the southeast side of the lake which will be managed to facilitate submergent aquatic food-plant production and sport fishing.

Big Lake is the only major outdoor recreation area in northeastern Arkansas, providing for over 57,000 visits in 1972. Including the lake within the wilderness would prohibit the use of motor boats, the only means of access to this roadless refuge. Without the use of motor boats, it is estimated that public use would be reduced by 60 percent or more. Sport and commercial fishermen, who make up approximately 90 percent of the total visits, would be particularly hard hit.

Hunting use would probably cease entirely. Currently popular wildlife interpretive tours, which utilize motorized boats, would be discontinued.

Such a reduction in public use would be beneficial to wildlife by reducing disturbance caused by human visitors. Noise disturbance from motor boats would be eliminated, enhancing the wilderness experience.

A major reduction in public use would have adverse impacts not only on the users affected, but on the local economy which supplies goods and services in support of outdoor recreation.

The lake itself is influenced almost entirely by man-made flood control and drainage facilities. Water quality is extremely poor, carrying large quantities of silt and debris from agricultural lands to the north in Missouri. Including the lake would reduce wilderness quality.

In conclusion, the addition of the 2,638 acres of open water in Big Lake would reduce wildlife disturbance and enhance the wilderness experience by eliminating noise from motor boats, but would preclude development and management of wildlife habitat. Public use would be severely reduced, impacting users and the local economy.

2. Increase the size of the proposal by the addition of approximately 2,000 acres of timbered lands in the northwestern section of the refuge, for a total proposal of 3,818 acres.

(See Map, Alternative B-2).

Impacts

The impacts of this alternative would be the same as those examined under the proposal, in addition to the following considerations. Included in this alternative is land which will be disturbed by the current Corps

BIG LAKE
National Wildlife Refuge
Mississippi County, Arkansas

WILDERNESS STUDY AREA

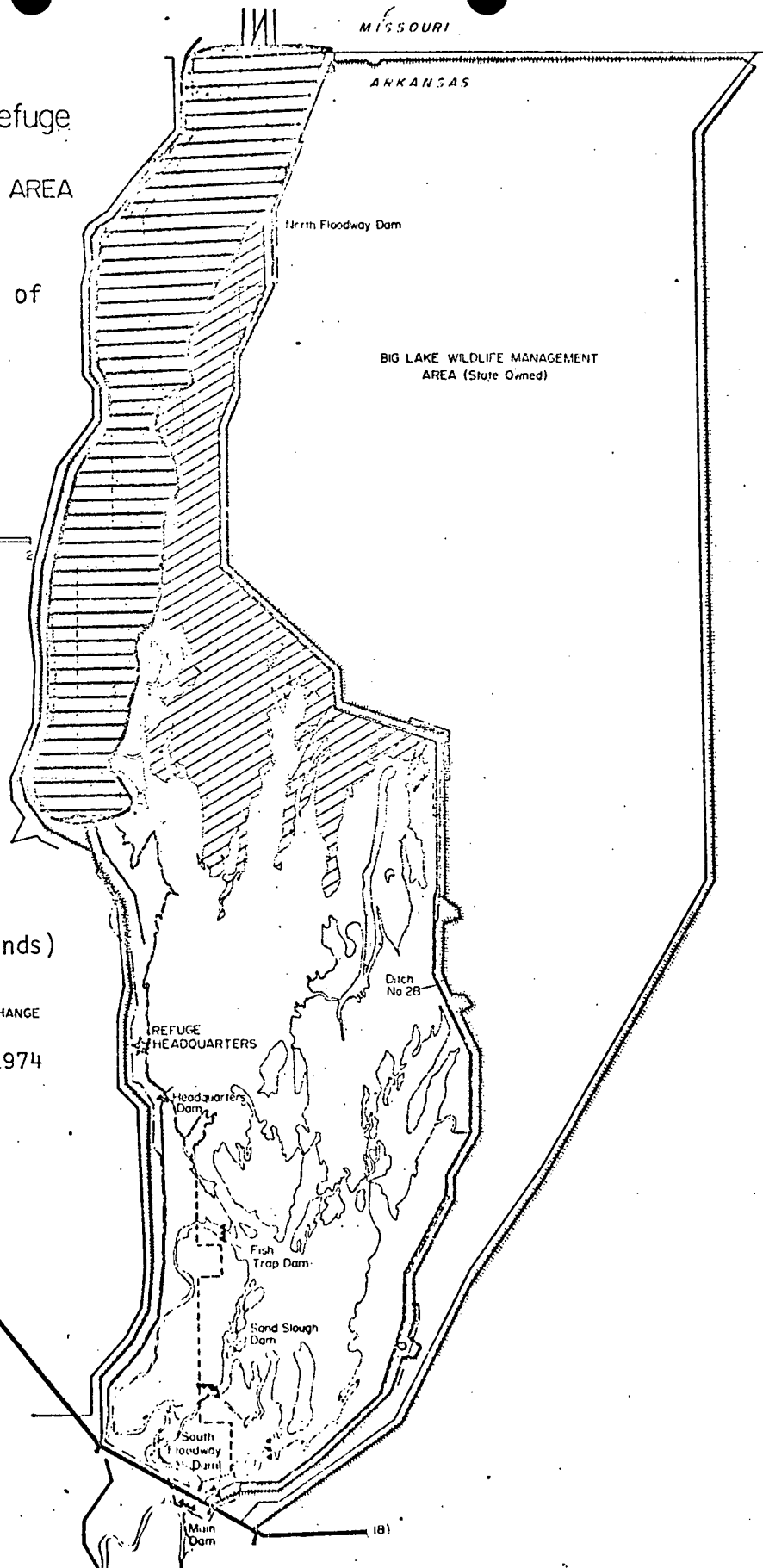
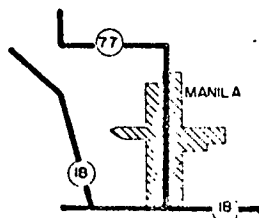
Alternative B. 2
(Add 2000 acres in
northwest portion of
refuge)



- LEGEND**
- REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - ||||| DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ROAD
 - ▨ Proposed Wilderness
 - ▨ Alternate Proposal (Added Lands)

PRELIMINARY - SUBJECT TO CHANGE
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Revised June 1974



of Engineer's project. A dam and large canal will be built down the west side of these lands within the refuge boundary and spoil from the canal will be used to build a levee with all-weather road on top. Such development will remove lands and disturb a large area of habitat as well as provide a road for easy access with subsequent noise from autos disturbing the wilderness experience. This alternative would preclude the Corps of Engineer's project, adversely affecting agricultural interests in the Little River drainage area in Missouri.

Addition of these lands would include approximately 800 acres of previously cut-over timber. Wilderness would, of course, preserve the area and it would eventually regain its naturalness.

Included within the addition are four of the refuge farm units, totalling 160 acres, which are managed to provide food for waterfowl and other wildlife. With the low natural productivity of the lake and unmanaged woodlands, these agricultural units are vital to the attainment of refuge wildlife objectives. Elimination of this management option would make Big Lake Refuge less effective in accomplishing the purpose (providing habitat for wintering waterfowl) for which it was established.

Wilderness would provide additional protection for the Zebree-Ancient Indian Village site which has been nominated for inclusion in the National Register of Historic Places. Conversely, it would also make continued excavation and study of the area by the Arkansas Archeological Survey

more difficult by denying motorized equipment.

Wilderness would provide added protection for the 500 acre research natural area near the northwest boundary of the refuge. However, in order to do so, the Corps of Engineer's project, which cuts through the natural area would be precluded. This would adversely impact on agriculture to the north of the refuge within the 2,500 square mile Little River drainage.

Lands included in this alternative are the most affected by heavy deposition of debris and household trash which is carried to the refuge during flood periods. Tons of such material as cans, bottles, small buildings, pesticide barrels, and virtually every kind of trash imaginable come to rest in large drifts and throughout the woodlands of the northern portion of the refuge with each flood. Including such lands would certainly decrease the quality of the wilderness.

In summary, wilderness designation would have beneficial impacts on vegetation in the long run, and on protection of historical and research natural areas; but would also adversely affect refuge wildlife management facilities and the Corps of Engineer's project. Wilderness quality would be reduced by the nearness of the Corps of Engineer's project and by trash deposits on the land.

C. Decrease the Size of the Proposal

1. Delete 400 acres of the proposal to the north of, and including the abandoned power line right-of-way, for a total proposal of approximately 1,400 acres.

Impacts

For the area remaining in the proposal, impacts would remain unchanged and the added protection afforded to aesthetics, wildlife, vegetation, soils, and other natural characters of the land would be guaranteed.

For deleted lands the impacts would be identical to those discussed under no action with lands not being afforded added protection offered by legislative action.

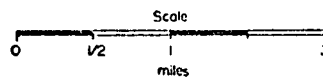
Wilderness quality would be improved by elimination of the scar of the previously cleared powerline right-of-way. In addition, those lands in the northern portion of the proposal which are most subject to trash deposition during floods would be deleted.

The most serious impact on deleted lands would be from unknown but possible future drainage and flood control needs, which might require facility construction on the land.

In summary, impacts of this alternative on lands remaining in wilderness would be the same as the proposal. Land deleted by this alternative

ALTERNATIVE C.1 - Delete Northern 400 Acres of Proposal

BIG LAKE
National Wildlife Refuge
Mississippi County, Arkansas
WILDERNESS STUDY AREA

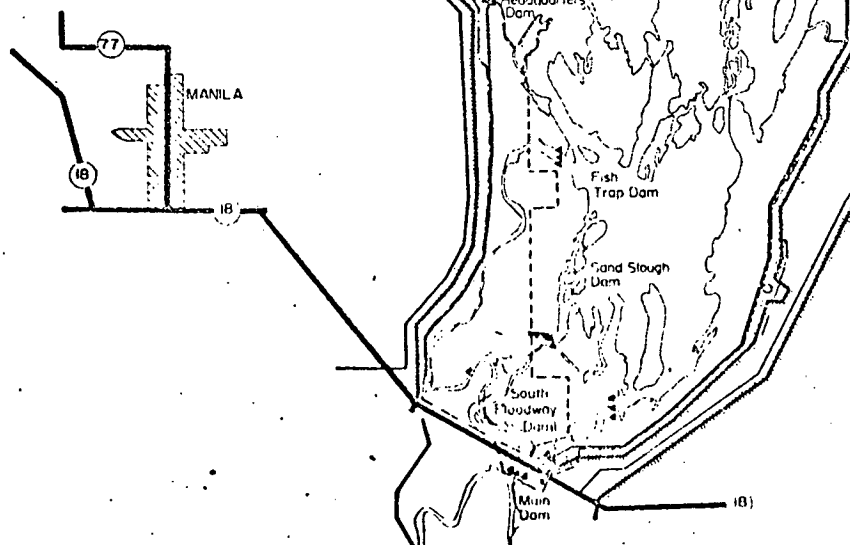


- LEGEND
- REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - |||| DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - == ROAD
 - ▨ Proposed Wilderness



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would still be managed to preserve its unique natural character but could be opened to development with adverse impacts occurring to aesthetics, vegetation, soils, and wildlife.

IX. CONSULTATION AND COORDINATION WITH OTHERS

A. Consultation and Coordination in the Development of the Proposal and in Preparation of the Draft Environmental Statement

Coordination has been effected with the Arkansas Geological Commission regarding their knowledge of mineral resources and mining, oil, and natural gas potentials. Coordination has also been effected with the Arkansas Historic Preservation Program and Arkansas Archeological Survey regarding their knowledge of historic sites and archeological values. Other coordination involved informal discussions with local agencies and individuals.

A public hearing to receive comments on an initial non-suitable wilderness proposal was held in Manila, Arkansas on April 16, 1974. The current proposal is a result of strong public feeling in favor of wilderness which was expressed during the public hearing and comment period.

Communications were received from 203 agencies, organizations, and individuals regarding wilderness at Big Lake National Wildlife Refuge. Approximately 91 percent (186) wanted some portion of the refuge designated as wilderness. Only seven communications favored the initial non-suitable proposal presented by the U.S. Fish and Wildlife Service. Ten indicated no position.

Among those favoring wilderness were Arkansas Governor Dale Bumpers and the Arkansas Game and Fish Commission, as well as 19 organizations and 166 individuals.

B. Coordination in the Review of the Draft Environmental Statement

Copies of this environmental statement will be circulated to the following agencies for comment:

Department of Agriculture
Department of Commerce
Department of Transportation
Department of Defense
 Corps of Engineers
Department of the Interior
 Bureau of Outdoor Recreation
 U.S. Geological Survey
 Bureau of Mines
 Bureau of Land Management
 National Park Service
Arkansas State Clearinghouse
Missouri State Clearinghouse

SUMMARY OF CHANGES MADE IN FINAL
AS A RESULT OF DRAFT COMMENTS

<u>Agency</u>	<u>Item</u>	<u>Page</u>
Department of the Army	Silt-laden floodwaters	4
	Terminology	8a, 19
	Impoundment Acreage	20
Bureau of Mines	Minerals	30
National Park Service	Historic Places	22
	E.O. 11593 Survey	23
	National Landmark	5
Arkansas State Clearinghouse	Archeological Resources	22, 23
	Land Management	26
	Drainage	31
	Economic Impact	30
Geological Survey	Water Resources	26a

Bureau of Outdoor Recreation -- On October 24, 1974, via telephone BOR stated that it had no comments to make on the draft EIS.

Bureau of Land Management -- On August 4, 1975, via telephone BLM stated that its records showed no evidence of receiving the draft statement for review; however, because of geographic location both BLM and the Service agreed that a formal review and a response were not necessary.



UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Washington, D. C. 20250



8420

OCT 29 1974

Mr. R. K. Robinson, Acting Chief
Office of Environmental Coordination
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR
Washington, D. C. 20240

Dear Mr. Robinson:

We have reviewed the Draft Environmental Statement for the Proposed Big Lake Wilderness Area, Arkansas.

The description of environmental effects of the proposal appear adequate for the proposal as presented. However, we have some comments about the proposal itself.

We commented on the original proposal to the Fish and Wildlife Service on May 24. We concurred at that time in their conclusion that no area within the refuge was considered suitable for recommendation as Wilderness. Their original conclusions were that:

"The refuge is bordered on all sides by levees, canals, roads, and other management and water control structures. These facilities influence the entire ecosystem of the refuge. In addition to altered drainage patterns, the waters which flow into Big Lake carry farm and household refuse to a permanent resting place on the refuge.

The use of motorboats on the lake is a well established use and provides an important commercial and recreational use of the fish resource. Construction and maintenance of waterfowl nesting structures also require the use of motorized equipment."

These factors have not changed. They are adverse to the requirements for Wilderness under Section 2(c) of the Wilderness Act and we feel that the original conclusion was correct. There is nothing presented in the draft EIS under review that refutes

*EC noted
10.31.74*

Letter of October 29, 1974

From U. S. Department of Agriculture (Forest Service)

The position taken by the Forest Service is noted and appreciated. However, the area now recommended does possess many wilderness characteristics. In view of the public concern for wilderness on Big Lake Refuge, the Service believes the 1,818 acres described in the proposal for inclusion in the National Wilderness Preservation System is justified. The Congress shall be the decisive voice in determining the suitability of the area for wilderness designation.

DEPARTMENT OF THE AIR FORCE
WASHINGTON 20330



OFFICE OF THE ASSISTANT SECRETARY

6 NOV 1974

Mr. R. K. Robinson
Chief, Office of Environmental
Coordination
Fish & Wildlife Service
U. S. Department of the Interior
Washington, D. C. 20240

Dear Mr. Robinson:

We have been requested to reply to your letter of September 26, 1974, to the Acting Deputy Assistant Secretary of Defense (Environmental Quality), in which you requested comments on the proposed Big Lake Wilderness Area.

In reviewing the statement, we noted there is an allusion to potential conflict between air traffic from Blytheville Air Force Base, Arkansas and the quality of the wilderness experience to be gleaned from the proposed wilderness area (Page 27 of the statement). The Air Force seeks to minimize such conflicts; however, as noted in the statement, total elimination of conflict is not always possible. No impact on Air Force operations is expected, assuming that the legislation supporting this proposed action gives assurance that military activities conducted in the vicinity of the proposed wilderness area will not be restricted.

Sincerely,

A handwritten signature in cursive script, reading "Billy E. Welch", is positioned above the typed name.

BILLY E. WELCH, Ph.D.
Special Assistant for
Environmental Quality

CC: OASD(H&E)

Letter of November 6, 1974
From Department of the Air Force

This letter addresses itself to the potential conflict between air traffic from the Blytheville Air Force Base and the proposed wilderness. We appreciate the Air Force's efforts to minimize impacts from air traffic and agree that such impacts on the proposed Big Lake Wilderness will be minor. Designation of the proposed wilderness should not cause any impact on military activities conducted in the vicinity of the proposed wilderness area.



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. - 20314

REPLY TO
ATTENTION OF:

DAEN-CWP-V

7 November 1974

Mr. R. K. Robinson
Acting Chief, Office of
Environmental Coordination
Fish and Wildlife Service
U. S. Department of the Interior
Washington, D. C. 20240

Dear Mr. Robinson:

This is in reply to your letters of 26 September 1974 to the Executive Director of Civil Works, U. S. Army Corps of Engineers and the Director for Environmental Quality, Department of Defense transmitting a draft copy of the environmental impact statement for the proposed Big Lake Wilderness Area, Arkansas, for review.

The following comments are furnished:

a. The third paragraph on page 4, under the heading, Proposal for Exclusion, discusses various developments that have taken place down through the years in managing the waters flowing through Big Lake. These developments or improvements have all been at the request of local interests with a couple of items requested by the U. S. Fish and Wildlife Service. In fact, local interests completed a considerable amount of drainage works prior to 1936 and constructed the original Big Lake levees and the Little River drainage system. In addition, it should be noted that the Right Hand Chute, Little River always flowed into Big Lake. Diversion of the silt-laden waters from agricultural lands was not the primary consideration for the project, since natural flows into Big Lake preceded any diversion by drainage interests.

b. On page 6a, Items 1 and 4 are incorrectly labeled dams. The correct terminology for these items is control structures. They are installed to control in-bank channel flows.

2

DAEN-CWP-V

Mr. R. K. Robinson

7 November 1974

c. On page 18, paragraph 2, Item (1), Habitat Development, the Sand Slough subimpoundment should be 1800 acres instead of the 2500 acres shown. In a letter dated 6 December 1973 from the U. S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia, to the Memphis District, a subimpoundment of approximately 1800 acres was proposed in a somewhat different layout than illustrated on page 18a. In a letter dated 28 December 1973 from Memphis District, LMED-H, to the U. S. Fish and Wildlife Service, the 1800-acre impoundment was agreed upon with a further stipulation that the impoundment levee would not exceed elevation 241 feet msl. 3

The opportunity to review this environmental impact statement is appreciated.

Sincerely yours,



JOHN F. WALL
Colonel, Corps of Engineers
Assistant Director of Civil Works,
Environmental Programs

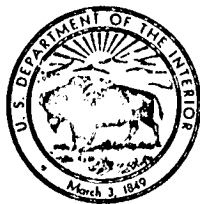
Letter of November 7, 1974

From the Department of the Army (Corps of Engineers)

Comment Number 1 emphasizes that the developments or improvements affecting the Big Lake environment have been requested by local interest and in some cases by the Fish and Wildlife Service. The letter also points out that the Right Hand Chute, Little River, has always flowed into Big Lake. The Final Statement omits the word diversion in relation to silt-laden waters on page 4.

Comment Number 2 suggests changes in terminology. Final Statement changes the word dam to water control structure on page 19.

Comment Number 3 refers to a planned subimpoundment of 2500 acres and suggests that the acreage should be 1800 acres as agreed upon during discussions with the Corps. The acreage is changed in the Final Statement, page 20, to 1800 acres.



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VIRGINIA 22092

OFFICE OF THE DIRECTOR

DES 74-86

NOV 4 1974

Webb
GF
Givens *le*
Wadsworth *Jan*
Rudolph
Wilson *W*
Carter
Van Dyck
Barber *RB*
Butts
Podrinski
Genoble
Date Rec'd *11/18*
File
Copy to

Memorandum

To: Chief, Office of Environmental Coordination
U. S. Fish and Wildlife Service

Through: ^{Deputy} Assistant Secretary--Energy and Minerals

From: Director, Geological Survey

Subject: Proposed Big Lake Wilderness Area
Big Lake National Wildlife Refuge, Arkansas

Cumalony
NOV 8 - 1974

We have reviewed the subject draft environmental statement as you requested in a memorandum of September 26, 1974.

No significant adverse impact related to geologic conditions is anticipated.

We conclude that wilderness designation would not generate immediate additional impacts on the hydrologic system. However, preclusion of any extensive manmade changes in the wilderness area may cause long-term modification of the hydrologic system, for example, change the amount of evapotranspiration. Other actions alluded to in the statement; diversion of silt into the refuge (p. 4), and drawdowns or other forms of management (p. 5) would have definite effects on water resources and these effects should be discussed. The addition of a section under "III. Environmental Impacts of the Proposed Action" (p. 22), entitled "Impacts on Water Resources" would be appropriate, in which the project's effects on the occurrence, availability, and quality of ground water and surface water could be discussed.

The present extensive manmade alterations to the ecological system have not stabilized and the potential impacts from actions outside the refuge (wilderness area) will introduce additional change; therefore, a discussion of these effects would make the impact statement more complete.

DES 74-86

We also believe that impacts associated with the long-range plans for drainage alternations in the Little River watershed in Missouri should be discussed.

Acting

Director

Henry W. Carter

Memorandum of November 4, 1974
From Geological Survey

1. As suggested, a section discussing impact on water resources has been included on page 26a.
2. Insufficient data are available to discuss in detail future man-made alterations outside the proposal which might affect the quality of wilderness. The Service recognizes the possibility of such developments on page 31 of the Final, but believes that a comprehensive analysis of associated impacts cannot be made based on present knowledge.



United States Department of the Interior

BUREAU OF MINES
WASHINGTON, D.C. 20240

November 8, 1974

DES 74-86

Memorandum

To: Chief, Office of Environmental Coordination, Fish and Wildlife Service

Through: ^{Deputy} Assistant Secretary--Energy and Minerals *Cannady*
NOV 18 1974

From: Director, Bureau of Mines

Subject: Draft environmental statement, Fish and Wildlife Service, proposed Big Lake Wilderness Area, Arkansas

Our Intermountain Field Operation Center, Denver, has reviewed the draft environmental statement for the proposed Big Lake Wilderness Area, Arkansas. The proposal is to designate 1,818 acres of the existing 11,037-acre Big Lake National Wildlife Refuge as part of the National Wilderness Preservation System.

The area has potential for sand and gravel and oil and gas. The statement recognizes the potential for these commodities and that wilderness designation would preclude mineral exploration and development. It states that there are no outstanding mineral rights in the proposed wilderness area and that current refuge regulations prohibit exploration. It is our understanding that under certain circumstances the refuge at present is open to oil and gas development under regulation. If this is true, it would be better for the document to acknowledge that this development status will be foregone with the change to wilderness.

The document makes no mention of an 18-inch natural gas pipeline, owned by Arkansas Louisiana Gas Company that crosses the refuge near the southern tip of the the proposed area. Unfortunately, our records are not sufficiently detailed to pinpoint the exact location of the line without a field examination. We suggest that the final statement discuss the pipeline in relation to the proposed wilderness area and state any plans for protecting or relocating it if necessary. 2

Thomas V. Falkie
Thomas V. Falkie
Director

Memorandum of November 8, 1974
From Bureau of Mines

1. That development status will be foregone with wilderness designation is now recognized on page 30.
2. This pipeline crosses the southern tip of the refuge within the state-owned right-of-way on the south side of State Highway 18. Technically, the pipeline is not on the refuge. It has essentially no bearing on the suitability of the proposed wilderness:



United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

L7619

OCT 23 1974

Memorandum

To: Director, U. S. Fish and Wildlife Service

Through: Assistant Secretary for Fish and Wildlife and Parks *CB*

From: Associate Director, Park System Management *QCT*

Subject: Proposed Big Lake Wilderness Area, Arkansas
(DES 74-86) Due November 1, 1974

We are offering you our comments on the subject draft environmental statement in accordance with instructions from the Office of Environmental Project Review.

COMMENTS ON THE ACTION

The proposed action should not adversely affect any existing, proposed or known potential unit of the National Park System, or any known historic, natural or environmental education sites eligible for the National Landmark Programs.

COMMENTS ON THE ENVIRONMENTAL STATEMENT

The final statement should contain (1) a sentence indicating that the National Register of Historic Places has been consulted and that no National Register properties will be affected by the project. *1*

In the case of properties under the control or jurisdiction of the United States Government, the statement should show evidence of contact with the official appointed by your agency to act as liaison for purposes of Executive Order 11593 of May 13, 1971, and include a discussion of steps taken to comply with Section 2(b) of the *2*



Executive Order. The EIS states that the EO 11593 survey has been done, however, there is little discussion on what was found. The final EIS should expand the description of the archeological resources. 2

The final statement should contain evidence of contact with the Historic Preservation Officer for the State involved and a copy of his comments concerning the effect of the undertaking upon historical and archeological resources. 2

A portion of the area recommended for Wilderness designation is included in part of the refuge recommended for the Registry of Natural Landmarks within the Eastern Deciduous Forests theme. See map of Wilderness Study Area, page ii. The inclusion of this portion of the recommended Natural Landmark as a Wilderness Area should enhance that recommendation. 3

Thank you for the opportunity to review this proposal.

John E. Cook

Memorandum of October 23, 1974
From the National Park Service

1. Sentence has been inserted on page 22 of the final.
2. Discussion of findings under E.O. 11593 survey are contained on page 23 of the Final Statement.
3. The Natural Landmark area is shown on the Wilderness Study Area Map and is discussed on page 5.



STATE OF ARKANSAS
DEPARTMENT OF PLANNING
400 TRAIN STATION SQUARE • VICTORY AT MARKHAM
LITTLE ROCK 72201

DALE BUMPERS
GOVERNOR
CHARLES T. CROW
DIRECTOR

November 22, 1974

Mr. R. K. Robinson
Acting Chief, Office of Environmental
Coordination
Fish and Wildlife Service
U. S. Department of the Interior
Washington, D. C. 20240

Re: FWS/RF Big Lake National Wildlife
Refuge Draft Environmental Impact
Statement

Dear Mr. Robinson:

The State Planning and Development Clearinghouse is in receipt of the comments of the State Agencies represented on the Technical Review Committee pertaining to the above mentioned document.

The proposal received a favorable review and the Draft Environmental Impact Statement was found to be adequate by the State Agencies at their November 10 meeting. It is requested that your agency pay particular attention to the comments of the Archeological Survey as well as to evaluate those of the Department of Planning, Arkansas Game and Fish Commission, Department of Pollution, Control, and Ecology, and Department of Health.

This office on behalf of the reviewing State Agencies wishes to thank you for your cooperation.

If we can be of any further assistance, please do not hesitate to call on us.

Sincerely,

Bertram Wakeley by Ed Kleihauer
Bertram Wakeley
Director Office of
State Planning Coordination

BW/reb/fk

Enclosures.

cc: Charles T. Crow
John P. Saxton




STATE OF ARKANSAS
DEPARTMENT OF PLANNING
400 TRAIN STATION SQUARE • VICTORY AT MARKHAM

DALE BUMPERS
GOVERNOR

CHARLES T. CROW
DIRECTOR

LITTLE ROCK 72201

MEMORANDUM

TO: State Planning and Development Clearinghouse
FROM: Charles T. Crow 
SUBJECT: Big Lake Wilderness Study - Draft Environmental Statement
DATE: November 7, 1974

The Arkansas Department of Planning has reviewed the above cited project which recommends that 1,818 acres of the Big Lake National Wildlife Refuge, located in Mississippi County, Arkansas, be included in the National Wilderness Preservation System.

Investigation indicates that such preservation measures will protect the area against any exploitation of the natural resources. We have no comments on the proposed action.

CTC/mrt



ARKANSAS ARCHEOLOGICAL SURVEY

DIRECTOR • CHARLES R. MCGIMSEY III
STATE ARCHEOLOGIST • HESTER A. DAVIS

Coordinating Office
University of Arkansas Museum
Fayetteville, AR 72701

November 12, 1974

To: Mr. John B. Saxton, Technical Review Committee
From: Hester A. Davis, State Archeologist
Re: Draft Environmental Statement, Proposed Big Lake Wilderness Area

This Draft Environmental Statement does not provide an adequate discussion of the historical and archeological resources in the impact area. The statement is made on page 19 that the Arkansas Historic Preservation Program has no listing located within the Big Lake National Wildlife Refuge, and that the refuge has completed a survey in compliance with Executive Order 11593 with the recommendation that the Zebree site be placed on the National Register of Historic Places. The Environmental Statement does not indicate the methods or personnel used during this Executive Order survey, nor the results of the survey, so it is impossible to assess the adequacy of this investigation and, therefore, the assessment of the impact of the proposed project. No contact was made with the Arkansas Archeological Survey concerning the Executive Order survey or its results. It would be our estimation that archeological sites do exist within the wilderness area, as indeed they do throughout the Big Lake National Wildlife Refuge. 1.

The argument is presented that sites will be preserved because the area will be a wilderness. However, recreational access will continue, indeed, they will probably increase with opportunities available for "hunting, wildlife study, photography, sightseeing, and other activities compatible with wilderness" (page 24). With the continuation of recreational activities will be a continuation of vandalism and disturbance to the cultural resources (as was found during the initial investigations by the Survey at the Zebree site). 2.

Until information is provided concerning the nature and results of the Executive Order inventory which the report indicates has been completed, we will consider this Draft Environmental Statement as inadequate.

cc: State Planning and Clearinghouse

Hester A. Davis

October 11, 1974.

[illegible]

TO: Mr. John P. Saxton, Chairman, Technical Review Committee

FROM: Mr. Richard W. Proctor, Member, Technical Review Committee

SUBJECT: Draft Environmental Statement Proposal of the Big Lake National Wildlife Refuge - Mississippi County

I am enclosing a copy of our April 18, 19, 1974, correspondence to the U. S. Fish and Wildlife Service which outlines actions taken by the Arkansas Game and Fish Commission in regard to this proposal.

RECEIVED

OCT 21 1974

SOIL AND WATER
CONSERVATION COMMISSION

April 18, 1974

Mr. Roy R. Vaughn, Acting Regional Director
U. S. Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
17 Executive Park Drive, N.E.
Atlanta, Georgia 30329

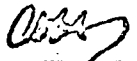
Dear Mr. Vaughn:

This statement is submitted for the record of a Public Hearing to be held April 16, 1974 at Manila, Arkansas concerning a Wilderness proposal within the Big Lake National Wildlife Refuge.

The Arkansas Game and Fish Commission has received and reviewed the Big Lake Wilderness Study Summary. While we recognize the validity of ongoing programs of management for enhanced resource production on the Big Lake Refuge, we feel that inclusion of portions of the Refuge in the Wilderness System would be consistent with overall managerial and public use objectives and would, in fact, complement a management program designed to provide a diversity of wildlife-oriented recreational experiences. Specifically, we would favor Wilderness designation for those lands on the Refuge in the vicinity of Gum Island more or less bounded on the south by the lower section line of section 23, T 15 N, R 9 E and to the north by the northern section line of Section 27, T 16 N, R 9 E and to the east by the west bank of the floodway ditch; said lands totaling some 2,600 acres.

We appreciate the opportunity to appear before this hearing and to submit our recommendations for the record.

Yours very truly,

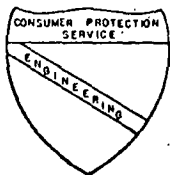

Andrew H. Hulscoy,
Director

AMH:RWB:cc

cc: R. A. Nelson

cc: Andrew H. Hulscoy
Jack Atkins

ARKANSAS STATE DEPARTMENT OF HEALTH
4815 WEST MARKHAM STREET
LITTLE ROCK



October 29, 1974

TO		DATE
	SAXTON	10/29
	MOTT	
	ELMENDORF	
	FORDENDERRY	10/29
	YOUNG	
	Cartrell	10/29
	CHAPIN	
	SWEARINGEN	
	FERGUSON	
	WHITE	
	STEPHENS	
	MYERS	

State of Arkansas Department of Planning
400 Train Station Square
Victory at Markham
Little Rock, Arkansas 72201

Attention: John P. Saxton

Re: Draft Environmental Statement
Proposal of the Big Lake
National Wildlife Refuge
located in Mississippi County

Dear Mr. Saxton:

This office has received and reviewed the referenced Environmental Impact Statement. The information supplied with this statement does not indicate that there is any particular health significance, and therefore, there are no comments.

This statement will be retained for our files.

Yours truly,

Bureau of Consumer Protection Services

G. T. Kellogg
G. T. Kellogg, P.E.
Director and Chief Engineer

GTK:TAS:UP:dkb

RECEIVED

10 29 1974

SOIL AND WATER
CONSERVATION COMMISSION



STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 NATIONAL DRIVE
LITTLE ROCK, ARKANSAS 72209

501 371-1701 GEN. OFF.
501 371-1136 AIR DIV.

November 12, 1974

MEMORANDUM TO: Mr. John Saxton, Chairman
Technical Review Committee

FROM: Trusten H. Holder *T.H.H.*

SUBJECT: Proposed Big Lake Wilderness Area

The draft EIS for the Big Lake Wilderness Area has been reviewed by this Department and we concur in the U. S. Fish and Wildlife proposal that 1,818 acres of the Big Lake National Wildlife Refuge be designated as a unit of the National Wilderness Preservation System. We also concur in the overall adequacy of the Environmental Impact Statement and in most of the information that is presented.

There is some possibility that the value of intensive habitat (as discussed in the first paragraph on page 22) is overemphasized. Also the loss of opportunities to construct drainage ditches (as discussed in the last paragraph on page 29) should be mentioned but not state that this would prevent the farmers of adjacent lands in Missouri from further improving drainage on their lands.

There is some possibility that the list of mammals shown on page 42 is not complete. Two possible omissions are grey squirrel and fox squirrel.

THH/dm

cc/ Armand DeLaurell

November 8, 1974

MEMORANDUM

TO: Drew Holbrook, Acting Director
Arkansas Geological Commission

FROM: John P. Saxton, Director
Division of Soil and Water Resources

RE: Draft EIS for proposed Big Lake Wilderness Area

We have reviewed said report and wish to offer the following comments.

Points on Page 26 & 27 are not quite clear and seem to contradict one another. I do not understand how the project can adversely affect the future drainage needs of the area and yet not have an adverse economical affect on the area. The area surrounding the refuge is highly agriculturally used land which is dependant upon drainage. 4.

I believe the project is very good and needed, but these points should be clarified.

JPS:ADF:cc

Letter of November 22, 1974
From the Arkansas State Clearinghouse

1. We appreciate the State Archeologist's concern relating to the archeological resources on the Big Lake Refuge and hope that the added discussion on pages 22 and 23 will more adequately explain historical and archeological resources.
2. The potential for increased damage to unknown cultural resources is now recognized on page 30.
3. The Department of Pollution Control Ecology refers to three items of concern: (1) overemphasis of intensive habitat management, (2) loss of opportunities for farmers of adjacent lands in Missouri to improve drainage on their land, and (3) possible omission of the grey squirrel and fox squirrel from the Refuge's list of mammals. We agree that there are very few opportunities for management to improve habitat on the proposed wilderness area, however, habitat manipulation is a management option that would not be permissible under wilderness designation. Changes were made on page 26 of the FES that toned down the importance of retaining this management option. Changes were made on page 31 of the FES to more adequately explain the impact of wilderness designation of drainage on private land north of the refuge in Missouri.

The Big Lake Refuge is certainly within the range of the grey squirrel and we have no undisputable explanation as to why this species has not been recently listed on the refuge. Only the eastern fox squirrel has been reported from Big Lake squirrel hunts.

4. The statement that "Wilderness designation would have little impact on the economy under present conditions" has been deleted from page 30 of the FES.

Christopher S. Bond
Governor



State of Missouri
OFFICE OF ADMINISTRATION
Jefferson City 65101

Robert L. James
Commissioner

November 29, 1974

Bill R. Cramer, Director
Division of State Planning and Analysis

Chief, Office of Environmental Coordination
Fish and Wildlife Service
U. S. Department of the Interior
Washington, D. C. 20240

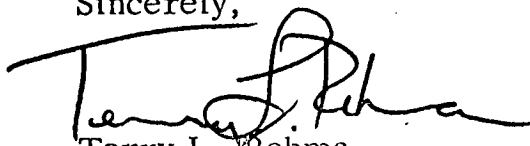
Dear Sir:

Subject: Draft Environmental Impact Statement of Proposed Big Lake
Wilderness Area, Arkansas OA 74100072

The Division of State Planning, as the designated State Clearinghouse,
has coordinated a review of the above referred draft environmental
impact statement with various concerned or affected state agencies
pursuant to Section 102(2)(c) of the National Environmental Policy
Act.

None of the state agencies involved in the review had comments or
recommendations to offer at this time. We appreciate the opportunity
to review the statement and anticipate receiving the final environ-
mental impact statement when prepared.

Sincerely,


Terry L. Rehma
A-95 Coordinator

TLR:dk

*El noted
12-3-74*

APPENDIX I

List of Mammals

Virginia Opossum (*Didelphis marsupialis virginiana*)
Shorttail shrew (*Blarina brevicauda* ?)
Arkansas mole (*Scalopus aquaticus pulcher*)
Missouri valley mole (*Scalopus aquaticus marchrinoides*)
Little brown myotis (*Myotis lucifugus lucifugus*)
Swamp rabbit (*Sylvilagus aquaticus aquaticus*)
Eastern cottontail (*Sylvilagus floridanus*)
Beaver (*Castor canadenses*)
Raccoon (*Procyon lotor*)
House mouse (*Mus musculus*)
Norway rat (*Rattus norvegicus*)
Cotton Rat (*Sigmodon hippidus*)
Muskrat (*Ondatra zibethica*)
Red fox (*Vulpes fulva*)
Gray fox (*Urocyon cinereoargenteus*)
Coyote (*Canis latrans*)
Longtail weasel (*Mustela frenata*)
Mink (*Mustela vison*)
Striped skunk (*Mephitis mephitis*)
Bobcat (*Lynx rufus*)
Eastern fox squirrel (*Sciurus niger*)
Whitetail deer (*Odocoileus virginianus*)

List of reptiles

Alligator snapping turtle (*Macrochelys temminckii*)
 Slider (*Pseudemys concinna hieroglyphica*)
 Red-eared turtle (*Pseudemys scripta elegans*)
 Smooth softshell turtle (*Trionyx muticus*)
 Eastern spiny softshell (*Trionyx spinifer spinifer*)
 Western spiny softshell (*Trionyx spinifera hartuigi*)
 Southern painted turtle (*Chrysemys picta dorsalis*)
 Western chicken turtle (*Deirochelys reticularia*)
 Stinkpot turtle (*Sternotherus odoratus*)
 Map turtle (*Graptemys geographica*)
 Mississippi map turtle (*Graptemys kohnii*)
 Mississippi mud turtle (*Kinosternon subrubrum hippocrepis*)
 Loggerhead musk turtle (*Sternotherus minor minor*)
 Snapping turtle (*Chelydra serpentina*)
 Three-toed box turtle (*Terrapene carolina triunguis*)

6-lined race runner (*Cnemidophorus sexlineatus*)
 Fence lizard (*Sceloporus undulatus*)

Eastern cottonmouth (*Agkistrodon piscivorus piscivorus*)
 Smooth green snake (*Opheodrys vernalis*)
 Rough green snake (*Opheodrys aestivus*)
 Diamond-backed water snake (*Natrix rhombifera rhombifera*)
 Yellow-bellied water snake (*Natrix erythrogaster flavigaster*)
 Broad-banded water snake (*Natrix sipedon confluens*)
 Eastern garter snake (*Thamnophis sirtalis sirtalis*)
 Eastern hognose snake (*Heterodon platyrhinos*)
 Black rat snake (*Elaphe obsoleta obsoleta*)
 Speckle kingsnake (*Lampropeltis getulus holbrooki*)

List of amphibians

Amphiuma (*Amphiuma means*)
 Fowler's toad (*Rufo woodhousei fowleri*)
 Southern cricket frog (*Acris gryllus gryllus*)
 Green treefrog (*Hyla cinerea*)
 Gray treefrog (*Hyla versicolor*)
 Bullfrog (*Rana catesbeiana*)
 Green frog (*Rana clamitans melanota*)
 Southern leopard frog (*Rana pipiens sphenoccephala*)

List of Fishes

American eel (*Anguilla rostrata*)
 Paddlefish (*Polyodon spathula*)
 Bowfin (*Amia calva*)
 Spotted Gar (*Lepisosteus oculatus*)
 Longnose Gar (*Lepisosteus osseus*)
 Shortnose gar (*Lepisosteus platostomus*)
 Alligator gar (*Lepisosteus spatula*)
 Gizzard shad (*Dorosoma cepedianum*)
 Mooneye (*Hiodon tergisus*)
 Grass carp (*Ctenopharyngodon idellus*)
 Carp (*Cyprinus carpio*)
 Golden shiner (*Notemigonus crysoleucas*)
 Flat head minnow (*Pimephales promelas*)
 Smallmouth buffalo (*Ictiobus bubalus*)
 Bigmouth buffalo (*Ictiobus cyprinellus*)
 Black buffalo (*Ictiobus niger* ?)
 Blue catfish (*Ictalurus furcatus*)
 Black bullhead (*Ictalurus melas*)
 Yellow bullhead (*Ictalurus natalis*)
 Brown bullhead (*Ictalurus nebulosus*)
 Channel catfish (*Ictalurus punctatus*)
 Flathead catfish (*Pylodictis olivaris*)
 Piraterperch (*Aphredoderus sayanus*)
 Brook silverside (*Labidesthes sicculus*)
 White bass (*Morone chrysops*)
 Yellow bass (*Morone mississippiensis*)
 Warmouth (*Lepomis gulosus*)
 Orangespotted sunfish (*Lepomis humilis*)
 Bluegill (*Lepomis macrochirus*)
 Redear Sunfish (*Lepomis microlophus*)
 Spotted bass (*Micropterus punctulatus*) ?
 Largemouth bass (*Micropterus salmoides*)
 White crappie (*Pomoxis annularis*)
 Black crappie (*Pomoxis nigromaculatus*)
 Mud darter (*Etheostoma asprigene*)
 Creole darter (*Etheostoma collettii*)
 Sauger (*Stizostedion canadense*)
 Freshwater drum (*Aplodinotus grunniens*)

Invertebrates

Freshwater shrimp (*Palaemonetes exilipes*)
 Mussel
 Freshwater snail

List of herbaceous plants

Climbing hempweed (*Mikania scaudens*)
 Water willow (*Dianthera americana*)
 Hibiscus (*Hibiscus palustris*)
 Lizard's tail (*Saururus cernuus*)
 Pokeweed (*Phytolacca americana*)
 Cardinal flower (*Ipobelia cardinalis*)
 Trumpet creeper (*Campsis radicans*)
 Water-lily (*Nymphaea odorata*)
 Broad-leaved arrowhead (*Sagittaria latifolia*)
 Arrowhead (*Sagittaria rigida*)
 Morningglory (*Ipomoea lacunosa*)
 Blackberry (*Rubus* spp.)
 Wild cucumber (*Echinocystis lobata*)
 American lotus (*Nelumbo lutea*)
 Partridge-pea (*Cassia fasciculata*)
 Dandelion (*Taraxacum officinale*)
 Japanese honeysuckle (*Lonicera japonica*)
 Greenbrier (*Salix rotundifolia*)
 Cattail (*Typha latifolia*)
 Chufa (*Cyperus esculentus*)
 Redroot sedge (*Cyperus erythrorhizos*)
 Coontail (*Ceratophyllum demersum*)
 Cutgrass (*Zizaniopsis milacea*)
 Swamp dock (*Rumex verticillatus*)
 Duck weed (*Lemna minor*)
 Spike rush (*Eleocharis quadrangulata*)
 Watervelvet (*Azolla caroliniana*)
 Walteri millet (*Echinochloa Walteri*)
 Wild millet (*Echinochloa pungens*)
 Pondweed (*Potamogeton americanus*)
 Pondweed (*Potamogeton vaginatus* ?)
 Coffeebean
 Cocklebur (*Xanthium chinense*)
 Rattlebox (*Crotalaria sagittalis*)
 Ragweed (*Ambrosia artemisiifolia*)
 Goldenrod (*Solidago* spp.)
 Common chickweed (*Stellaria media*)

Shrubby plants

Possum grape (<i>Vitis baileyana</i>)	Mulberry (<i>Lyonia ligustrina</i>)
Decidious holly (<i>Ilex decidua</i>)	Kentucky wisteria (<i>Wisteria</i>
Elderberry (<i>Sambucus canadensis</i>)	macrostachya)
Poison-Ivy (<i>Rhus radicans</i>)	Redbud (<i>Cercis canadensis</i>)
Mistletoe (<i>Phoradendron flavescens</i>)	
Persea (<i>Diospyros virginiana</i>)	

	S	S	F	W
Myrtle Warbler	c		c	c
Black-throated Green Warbler	c		c	
Cerulean Warbler	r		r	
Black-throated Warbler	u		u	
Yellow-throated Warbler	u		u	
Chestnut-sided Warbler	o		o	
Bay-breasted Warbler	u		u	
Blackpoll Warbler	u		u	
Palm Warbler	u		u	
Greenback	r		r	
Northern Acornfinch	u		u	r
Louisiana Waterthrush	o	o	o	
Kentucky Warbler	o	o	o	
Warbling Warbler	r		r	
Yellowthroat	c	c	c	
Yellow-breasted Chat	c	c	c	
Hooded Warbler	r	r	r	
Canada Warbler	r		r	
American Redstart	u	u	u	
House Sparrow	c	c	c	c
Boblink	o		o	
Eastern Meadowlark	c	c	c	c
Red-winged Blackbird	c	c	c	c
Orange Oriole	c	c	c	
Baltimore Oriole	c	c	c	
Rusty Blackbird				u
Common Grackle	c	c	c	c
Black-headed Cowbird	c	c	c	
Scarlet Tanager	o	o		
Summer Tanager	u	u	u	
Cardinal	c	c	c	c
Pied-billed Grebe	u		u	
Blue Grosbeak	r	r		
Indigo Bunting	c	c	c	
Dickcissel	c	c	c	
Purple Finch			o	o
American Goldfinch	u	u	u	u
Pinkish-sided Tanager	c	c	c	c
Song Sparrow	u		u	u
Le Conte's Sparrow	r		r	
Vesper Sparrow	r		r	
Lark Sparrow		r		
State-colored Junco	c		c	c
Tree Sparrow	r		r	o
Chipping Sparrow	u	u		
Field Sparrow	c	c	c	c
North American Sparrow	u		u	u
Antennated Sparrow	c		c	c
Fox Sparrow	u		u	u
Swamp Sparrow	c	c	c	c
Song Sparrow	c		c	c

These additional 10 species are very rare or accidental on the refuge, and have been seen only once or twice:

Brown Pelican
Wood Ibis
Whistling Swan
White-fronted Goose
White-winged Scoter

Peregrine Falcon
Turkey (formerly)
Common Gallinule
Long-billed Marsh Wren
Western Tanager

NOTES:

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.



UNITED STATES DEPARTMENT OF
THE INTERIOR

FISH AND WILDLIFE SERVICE
Bureau of Sport Fisheries and Wildlife



Refuge Leaflet 153-R2
July 1969

BIRDS OF THE BIG LAKE NATIONAL WILDLIFE REFUGE



BIG LAKE NATIONAL WILDLIFE REFUGE, containing 9,900 acres, is in the extreme northeastern corner of Arkansas. Established in 1915, it is the third oldest inland refuge in the national wildlife refuge system.

Headquarters for Big Lake Refuge are near Manila, Arkansas. The old levee road from State Highway 18 to the Arkansas-Missouri line separates the "sunken lands" of the refuge from the State-owned public hunting area. This is a good route for bird viewing. The road has an all weather surface over about half of its length. It is open to the public all year. However, the unsurfaced portion may be closed to vehicle traffic when it is excessively wet. Other levee roads on the refuge also provide excellent bird watching.

The following list contains 201 species. Abundance and other symbols are coded as follows:

a—abundant
c—common
u—uncommon
o—occasional
r—rare

S—March-May
J—June-August
F—September-November
W—December-February
* nests locally

	S	S	F	W
Common Loon	r	r	r	r
Horned Grebe	o	o	o	o
Fred-billed Grebe	c	c	c	o
White Pelican	o	o	o	o
Double-crested Cormorant	u	u	u	u
Anhinga	r	r	r	r
Great Blue Heron	o	c	c	o
Green Heron	u	c	c	u
Little Blue Heron	o	u	c	u
Cattle Egret	u	u	u	u
Common Egret	c	c	c	c
Snowy Egret	r	r	r	r
Black-crowned Night Heron	u	u	u	u
Pink-crowned Night Heron	u	u	u	u
Least B. Heron	r	r	r	r
American B. Heron	u	u	u	u
Canada Goose	u	u	u	c
Snow Goose	u	u	u	u
Blue Goose	u	u	u	u
Mallard	a	o	a	a
Black Duck	u	u	u	c
Goosail	u	u	u	u
Pintail	c	c	c	u
Green-winged Teal	u	u	u	c
Blue-winged Teal	c	c	c	o
American Merganser	c	c	c	u
Shoveler	u	u	u	r
Acad. Duck	c	c	c	c
Redhead	o	o	o	o
Ring-necked Duck	c	c	c	c
Canvasback	u	u	u	u
Greater Scaup	r	r	r	r
Lesser Scaup	c	c	c	u
Common Goldeneye	o	o	o	u
Bittern	o	o	o	u
Red. Duck	u	u	u	o
Hooded Merganser	c	u	c	c
Common Merganser	r	r	r	r
Red-breasted Merganser	o	o	o	o
Turkey Vulture	r	r	r	r
Sharp-shinned Hawk	r	r	r	r
Cooper's Hawk	r	r	r	r
Red-tailed Hawk	c	c	c	c
Red-shouldered Hawk	u	u	u	u
Broad-winged Hawk	u	u	u	u
Belted Eagle	o	o	o	r
Marsh Hawk	u	u	u	u
Catbird	r	r	r	r
Sparrow Hawk	u	r	c	c
Bobcat	u	u	u	u

	S	S	F	W
King Rail	u	u	u	u
Virginia Rail	r	r	r	r
Sora	u	u	u	u
American Coot	c	r	c	u
Semipalmated Plover	r	r	r	r
Killdeer	c	c	c	c
American Woodcock	u	u	u	u
Common Snipe	c	c	c	u
Upland Plover	r	r	r	r
Spotted Sandpiper	u	u	u	u
Solitary Sandpiper	u	u	u	u
Greater Yellowlegs	o	o	o	o
Lesser Yellowlegs	o	o	o	o
Pectoral Sandpiper	c	c	c	c
Least Sandpiper	u	u	u	u
Semipalmated Sandpiper	o	o	o	o
Herring Gull	u	u	u	u
Ring-billed Gull	u	u	u	u
Forster's Tern	r	r	r	r
Common Tern	r	r	r	r
Least Tern	o	o	o	o
Caspian Tern	o	r	o	o
Black Tern	u	r	o	o
Mourning Dove	c	c	c	c
Yellow-billed Cuckoo	c	c	c	c
Black-billed Cuckoo	r	r	r	r
Barn Owl	o	o	o	o
Screech Owl	u	u	u	o
Great Horned Owl	u	u	u	u
Barred Owl	c	c	c	c
Chuck-will's-widow	c	c	c	c
Whip-poor-will	r	r	r	r
Common Nighthawk	u	u	u	u
Chimney Swift	c	c	c	c
Ruby-throated Hummingbird	c	c	c	c
Belted Kingfisher	c	c	c	c
Yellow-shafted Flicker	c	c	c	c
Pileated Woodpecker	c	c	c	c
Red-bellied Woodpecker	c	c	c	c
Red-headed Woodpecker	c	c	c	c
Yellow-bellied Sapsucker	c	c	c	c
Hairy Woodpecker	u	u	u	u
Downy Woodpecker	c	c	c	c
Eastern Kingbird	c	c	c	c
Great Crested Flycatcher	c	c	c	c
Eastern Phoebe	c	c	c	c
Acadian Flycatcher	u	u	u	u
Least Flycatcher	o	o	o	o
Eastern Wood Pewee	c	c	c	c
Horned Lark	c	c	u	u

	S	S	F	W
Tree Swallow	u	u	u	u
Bank Swallow	o	o	o	o
Rough-winged Swallow	u	u	u	u
Barn Swallow	c	c	c	c
Cliff Swallow	r	r	r	r
Purple Martin	c	c	c	c
Blue Jay	c	c	c	c
Fish Crow	u	u	r	r
Common Crow	c	c	c	c
Carolina Chickadee	c	c	c	c
Tufted Titmouse	c	c	c	c
White-breasted Nuthatch	u	u	u	u
Red-breasted Nuthatch	u	u	r	r
Brown Creeper	u	u	u	u
House Wren	u	u	u	o
Winter Wren	o	o	o	u
Bewick's Wren	r	r	r	r
Carolina Wren	c	c	c	c
Mockingbird	c	c	c	u
Catbird	c	c	c	c
Brown Thrasher	c	c	c	c
Robin	c	c	c	c
Wood Thrush	c	c	c	c
Hermit Thrush	u	u	u	u
Swainson's Thrush	u	u	u	u
Gray-cheeked Thrush	u	u	u	u
Verry	r	r	r	r
Eastern Bluebird	c	c	c	c
Blue-gray Gnatcatcher	c	c	c	c
Golden-crowned Kinglet	u	u	u	u
Ruby-crowned Kinglet	c	c	c	c
Cedar Waxwing	c	c	c	c
Loggerhead Shrike	c	c	c	c
Starling	c	c	c	c
White-eyed Vireo	c	c	c	c
Yellow-throated Vireo	u	u	u	u
Red-eyed Vireo	c	c	c	c
Warbling Vireo	r	r	r	r
Black-and-white Warbler	u	u	u	u
Prothonotary Warbler	c	c	c	c
Swainson's Warbler	r	r	r	r
Warm-colored Warbler	r	r	r	r
Golden-crowned Warbler	r	r	r	r
Blue-winged Warbler	r	r	r	r
Tennessee Warbler	o	o	o	o
Nashville Warbler	c	c	c	c
Parula Warbler	r	r	r	r
Yellow Warbler	u	u	u	u
Magnolia Warbler	u	u	u	u
Cape May Warbler	r	r	r	r

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

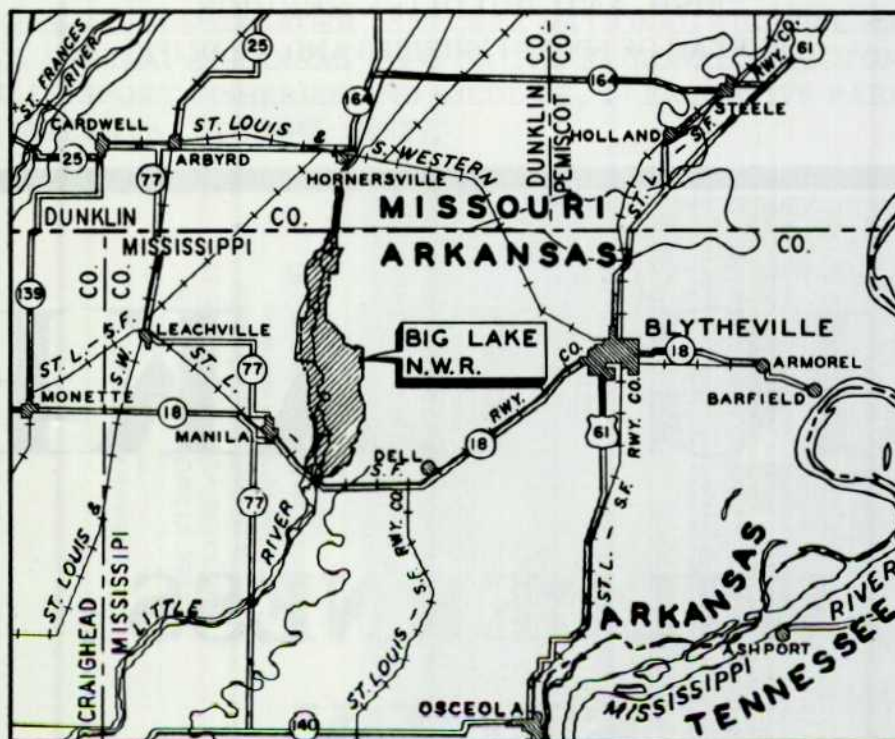
BIG LAKE

WILDERNESS STUDY SUMMARY

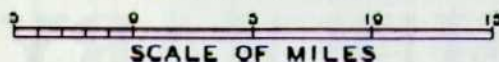


BIG LAKE
NATIONAL WILDLIFE REFUGE

Mississippi County
Arkansas



VICINITY MAP



THIS REPORT WAS PREPARED PURSUANT TO THE WILDERNESS ACT, PUBLIC LAW 88-577. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THIS REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF SPORT FISHERIES AND WILDLIFE, SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PREFACE

This wilderness report summary concerns a national wildlife refuge that has been studied by the Bureau of Sport Fisheries and Wildlife at the direction of the Secretary of the Interior. Its purpose is to summarize the study in sufficient detail to enable the reader to form an opinion regarding the suitability and desirability of including all or part of the refuge within the National Wilderness Preservation System.

The Wilderness Act of September 3, 1964 (Public Law 88-577), requires that the Secretary of the Interior review every roadless area of 5,000 contiguous acres or more and every roadless island, regardless of size, within the National Refuge System within ten years after the effective date of the Act, and report to the President of the United States his recommendations as to the suitability or nonsuitability of each such area as wilderness. A recommendation of the President for designation as wilderness does not become effective unless provided by an Act of Congress.

In defining wilderness, the Act also included areas of less than 5,000 acres that are of sufficient size to make preservation and use in an unimpaired condition practicable.

Sections 4(a) and (b) of the Wilderness Act provide that: (1) The Act is to be within and supplemental to the purposes for which national wildlife refuges are established; and (2) Wilderness areas shall be administered so as to preserve their wilderness character and shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use insofar as primary refuge objectives permit. Wilderness does not remove or alter an area's status as a national wildlife refuge.

I. Introduction

Big Lake Refuge is located in Mississippi County, Arkansas, in the extreme northeastern part of the State. It lies immediately east of Manila, Arkansas and extends from State Highway 18 north to the Missouri State Line. It is about 20 miles west of the Mississippi River.

Big Lake Refuge was established primarily to provide migration habitat for ducks and geese using the Mississippi Flyway. Present management, in addition to waterfowl, includes responsibilities for representative populations of native wildlife; endangered wildlife species, particularly the southern race of the bald eagle and the peregrine falcon; and programs of wildlife-oriented recreation and environmental education.

The refuge contains 11,037.88 acres and is administered from the headquarters located on the refuge some $2\frac{1}{2}$ miles northeast of the city of Manila. The mailing address is P. O. Box 67, Manila, Arkansas 72442. The area was selected for wilderness review because it contains at least 5,000 acres of roadless areas as well as roadless islands.



Mallards

II. History

The Big Lake National Wildlife Refuge was established August 2, 1915, as the Big Lake Reservation by Executive Order 2230 on lands reserved from public domain. Subsequent Executive Orders and Public Land Orders have both added and deleted lands from the original refuge. Since 1940, 563 acres in small tracts have been purchased with Migratory Bird Conservation Fund monies. In 1969, 1,156 acres were obtained by permit from the Corps of Engineers. These latter lands were acquired by the Corps for drainage and flood control purposes and will be transferred to the Bureau of Sport Fisheries and Wildlife in fee title when the Corps' project has been completed. Authorization for the refuge derives from the Migratory Bird Conservation Act.

The formation of Big Lake has been attributed to a series of earth tremors, known collectively as the New Madrid Earthquake, which occurred in 1811 and 1812. Geologists, however, think the lake was formed much earlier than this, perhaps 1,000 years ago, when the Mississippi River attempted to change its course and cut across Little River, backing up water in the old stream channels that the river had formed over a period of many years.

Big Lake, when it was formed, was held by a natural dam or levee. Each year the Mississippi River and other streams overflowed their banks and this action caused accretion, which had the effect of maintaining the dam. However, once man began to control the flooding, rivers were confined to their channels, and there were no great deposits of silt. Accretion was halted. Little River soon eroded a channel through the area which held the lake. During the early 1930's, Big Lake began to dry up each summer. Man-made structures were then substituted for the natural dam to hold the lake. Even though the lake level today is essentially the same as it was hundreds of years ago, it could not be maintained without the assistance of man.

In the early 1920's, drainage interests dug a 100 foot wide ditch down the east boundary of the refuge from the Missouri-Arkansas State Line, south to Arkansas Highway 18. A levee was constructed with the spoil from this ditch (known as Ditch 28). The purpose of the ditch and levee was to speed drainage from Missouri around Big Lake and to confine overflows to the Big Lake area. A large levee on the west boundary of Big Lake was built in about the year 1900 by the St. Francis Levee District for the purpose of confining floods to Big Lake and Little Rivers.

As drainage improvements were made in the Little River watershed in Missouri, Big Lake's problems increased. The lake became a sump and was subjected to periodic floods which reached greater elevations than any time before.

The waters contained enormous amounts of silt. The confining of the waters to the "floodway," which was created by the bordering levees, hastened the erosion of the natural dam holding the lake.

During the early 1930's, a dam was constructed on the north end of Ditch 28. This structure was to divert flows into the lake which had been going down the ditch and around the lake. A dam was later constructed on the south end of this ditch near State Highway 18 to hold water in Big Lake during low stages.

Before the North Dam in Ditch 28 was completed, a dredge was placed on the refuge and the old river channels on the north end were deepened so that waters could be diverted by the dam into the lake. Today, the evidence of this dredging is still visible from the spoil that was piled along the sides of the channels.

In 1939, during the days of the Civilian Conservation Corps, the Sand Slough Dam and a water control structure were built. This permitted the lake to be held at its normal level or to be drawn down if desired.

From the intrusions of silt, the quality of aquatic flora and fauna of the lake deteriorated rapidly. Due to these changes it was no longer possible to provide an abundance of waterfowl food for the thousands of ducks and geese which were accustomed to migrating through the area. To this day, there has never been a satisfactory remedy for this loss of productivity. The refuge acquired or cleared relatively small areas of land suitable for the production of waterfowl food, but this could not begin to replace the volume of food plants that had been lost.

In the mid-1950's, farming interests sought to further improve drainage of land in Missouri by improving flowage through Big Lake. The U. S. Army Corps of Engineers, acting in behalf of the farm interests, was required to coordinate their planning of the project with the U. S. Fish and Wildlife Service, through the provisions of the Fish and Wildlife Coordination Act. As a result, a number of features were added to the plans for the enhancement of fish and wildlife values on the refuge.

III. Physical Description

Big Lake Refuge is bound on the north by the Arkansas-Missouri State Line, on the east by an old levee now maintained by Arkansas Game and Fish Commission, on the west by Drainage District 16's main project levee, and on the south by Arkansas State Highway 18. A small portion of the refuge extends south of the highway where one dam is located and another is planned.

The lands of the refuge range in elevation from 230 feet up to 240 feet m.s.l. Elevations below 233.3 feet are permanent water. Water levels on the refuge may fluctuate during periods of flooding from five to eight feet and inundate 99 percent of the refuge.

The refuge includes 8,138 acres of permanent water interspersed within timbered swamplands. The openings range in size from less than an acre up to more than a thousand acres. The water is managed at a depth of less than 4 feet.

The lake acts as a sump and receives all its inflows of water from agricultural lands. The waters drain rapidly into the lake by the several hundred miles of ditches in the watershed. A rise usually continues for three days regardless of magnitude and takes approximately a week to subside.

The Arkansas Pollution Control Commission has sampled waters from the lake since 1968 and their information indicates that there are no significant amounts of pesticides in these waters; however, residue and turbidity are quite high.

Through the swamps the water depths vary from an inch to a foot or more. The majority of the lands of the refuge is timbered swamp. The 5,500 acres of these lands remain under at least a few inches of water when the lake is at its normal level.

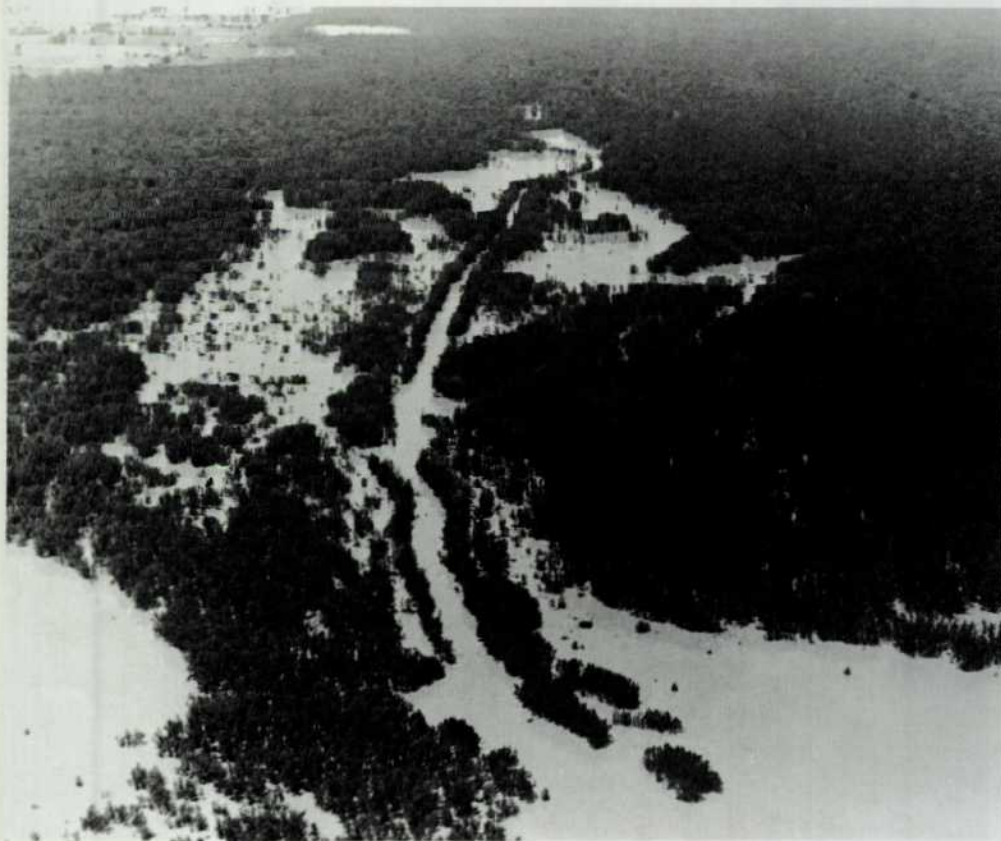
There are approximately 2,900 acres of lands which remain above the level of the lake most of the year. Of this amount, 400 acres have been cleared and converted to farmlands. Another 1,000 acres of these lands contain cutover timber.

The refuge is almost free of roads. Small areas of land bordering the lake and swamps have been cleared for agricultural purposes and road trails have been opened up to these fields. All fields are located along the west and south boundaries of the refuge. There are no roads on the east and north sides of the refuge.

Islands contained in the lake are areas of the swamps which range only slightly above the level of the lake. There are numerous depressions, runs, and sloughs throughout these islands, so most of the land is under water all year. The islands actually do not appear visible as such because the timber growths in the swamps are continuous with those of the islands, and they have a timber composition only slightly different than the flooded swamps. The islands may contain species of cottonwood, boxelder, oak, and hackberry; scattered or in stands, along with stands of cypress and ash which are typical in the swamps.

Habitat types and approximate acreages of each on the refuge are as follows:

Open lake	2,638 acres
Swamplands	5,500 acres
Seasonally flooded timber	2,500 acres
Farmlands	400 acres

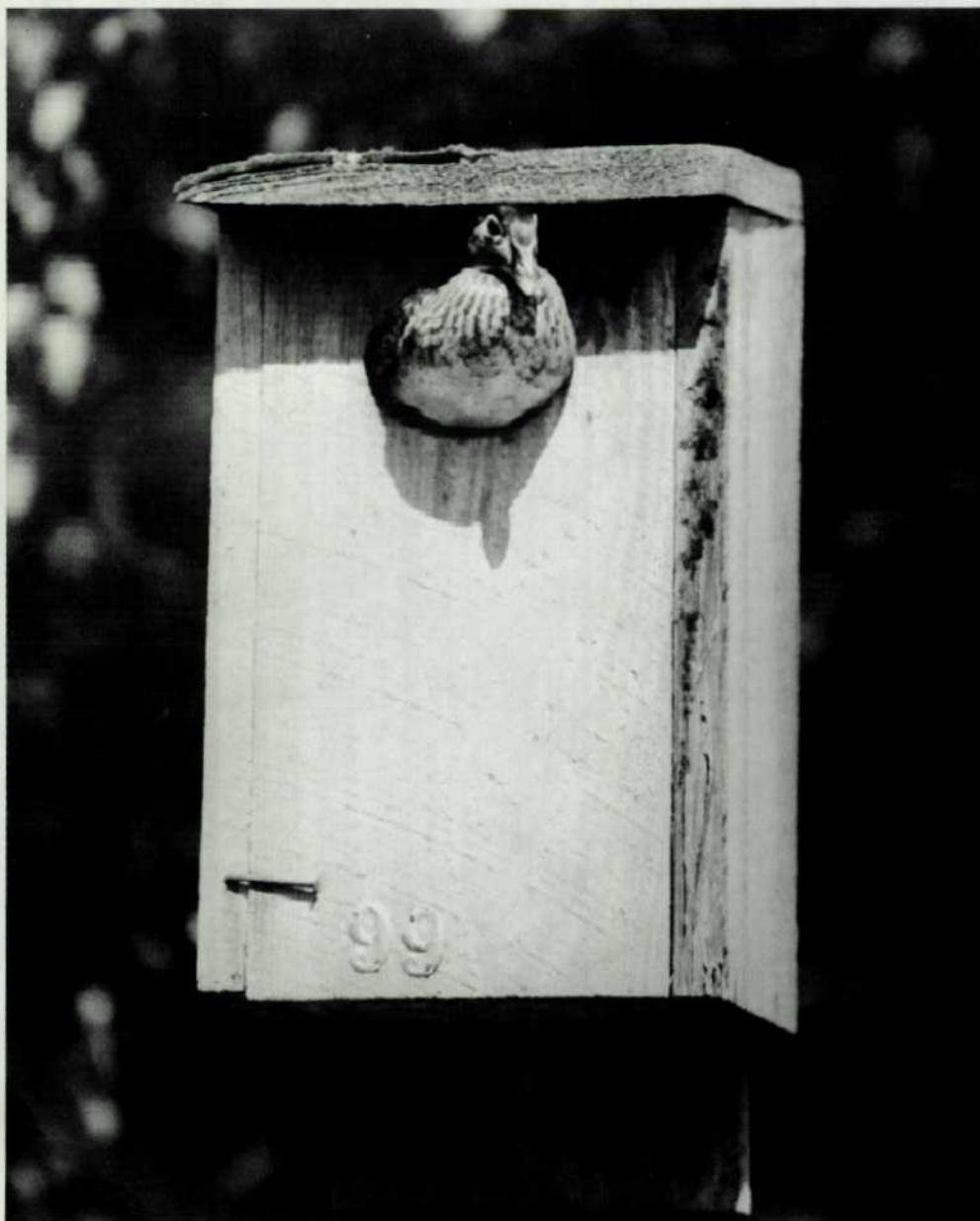


Little River retains signs of earlier dredging.

IV. Resources

Wildlife

Peak waterfowl populations normally reach 30,000 during the winter season. Mallards account for about 90 percent of the waterfowl use while most other duck species that are common in the Mississippi Flyway make up the remaining use. Canada geese usually number about three hundred. Wood ducks and hooded mergansers nest on the refuge. Wood ducks produce about 2,000 young birds annually, largely because of an intensive nest-box program. The number of mergansers is much smaller.



Hérons and egrets are numerous on the refuge during the summer months. Terns, gulls, snipes, and woodcocks are present on the refuge at various times of the year. Most birds common to Arkansas, Missouri, and Tennessee are well represented among the more than 200 bird species that visit or live year-round on the refuge. Almost half of these species nest on or near the refuge. Turkeys have been re-introduced on adjacent State lands by the Arkansas Game and Fish Commission. Endangered, rare, or threatened species that have been seen on the refuge include the bald eagle, osprey, brown pelican, wood ibis, and peregrine falcon. The eagle and osprey rarely use the refuge and the other species have been sighted only one or two times.

Raccoons, muskrats, beaver, and mink are abundant on the refuge. Bobcats, opossums, skunks, red and gray foxes, and white-tailed deer are common. In addition to the birdlife, wildlife on the refuge includes 22 species of mammals, 27 of reptiles, 8 of amphibians, and 38 of fish and minnows.

Minerals

Sand and gravel exist in almost inexhaustible supplies in Mississippi County, Arkansas. There is no commercial oil or gas production in the County. Sand and gravel deposits undoubtedly exist on the refuge; however, none have been located precisely.

Historical Sites

Big Lake itself is historically significant. The lake was near the center of the New Madrid Earthquake that began in 1811. The lake was also the center of a 458,000-acre land dispute in 1852 between Jaques Clamorgan of the Missouri Trading Company and the United States Government. This case was settled in court in favor of the United States. At this time the Arkansas Historic Preservation Program has no listings for distinct historic entities within the confines of the Big Lake National Wildlife Refuge.

The Bureau of Sport Fisheries and Wildlife is formulating its recommendation that the Zebree Homestead-Ancient Indian village site, located near the northwest refuge boundary, be included in the National Register of Historic Places. This site has been excavated and studied by the Arkansas Archaeological Survey.

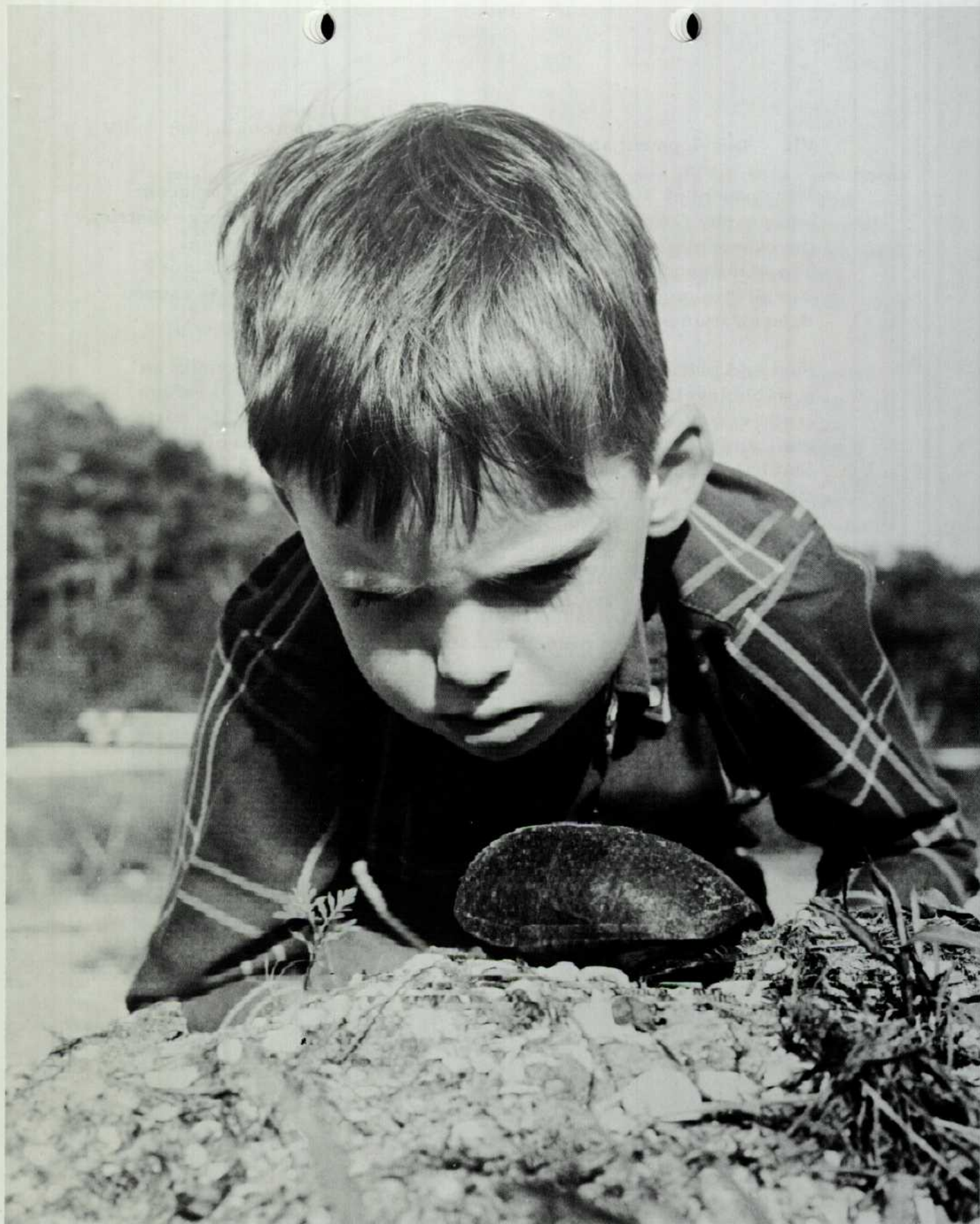


Sport fishing is the major public use at Big Lake.

V. Public Use

Most of Big Lake's visitors live within a 30-mile radius of the refuge. The majority of the use is for fishing. Only a few areas of the refuge can be visited by automobile; however, the second largest category of use is for nature appreciation. In calendar year 1972, visitor use by activities was as follows:

<u>Activities</u>	<u>Number of Visits</u>
Wildlands Interpretative Programs	1,080
Environmental Education	200
Resident Game Hunting	935
Fishing	46,197
Wildlife Observation	3,214
Wildlands Appreciation	3,375
Camping	1,160
Picnicking	1,035
Total Visits	57,196



Environmental education and wildlife interpretation are important refuge activities.

VI. Development and Management

Management of Big Lake recently has been influenced by adjacent and nearby Corps of Engineers' developments, local drainage district developments, and agricultural demands for better drainage. These influences currently exist and will undoubtedly continue. The diversion of silt-laden flood waters onto the refuge has caused deterioration of fish and wildlife habitat.

Past and present management of Big Lake has been essentially as a stable level impoundment. Water management affects all refuge lands except subdiked areas, some timbered lands near the north end, and a few small, high elevation areas on the edges of the refuge. Stable level management provides good conditions for duck production, fishing, and wildlife-oriented recreation. Drawdowns or other forms of management would be more advantageous for waterfowl food production and could be implemented if the need should become sufficient to warrant more intensive management.

In addition to water management, other habitat management includes pest plant control as needed and crop production on approximately 400 acres.



Big Lake nest boxes produce 2,000 wood ducks annually.

VII. Social and Economic Considerations

Historically, Big Lake's primary value has been its wildlife resources, and it has provided a commercial source of fish, fur bearers, and other wildlife. In 1972, the refuge issued 21 permits for commercial fishing in Big Lake; however, many permittees fish more for pleasure than for economic benefits. Today, only a few people derive any significant portion of their annual income from commercial taking of wildlife from the refuge.

The sale of refuge products has been insignificant; however, under the Refuge Revenue Sharing Act, Mississippi County receives an annual payment equal to three-fourths of one percent of the value of refuge lands (excluding Public Domain) for schools and roads.

Viewpoints on the values of the refuge vary. People north of the refuge are mainly concerned with how the refuge affects the drainage of agricultural land in Missouri. People in Arkansas are concerned primarily with the recreational value of the refuge.



Commercial fishermen also share refuge benefits.

VIII. Summary and Conclusions

The Big Lake National Wildlife Refuge was established primarily to provide wintering habitat for waterfowl. Refuge responsibilities now include major considerations for waterfowl, endangered species, native wildlife, public use, and protection and preservation of the ecosystem.

Refuge objectives include the following:

1. To develop and manage the refuge for a full spectrum of wildlife including rare and endangered species that use the refuge and provide habitat capable of supporting (1) peak populations of 35,000 ducks of various species, (2) 1,000 Canada geese, (3) production of 4,500 ducks including 4,200 wood ducks, 200 hooded mergansers, and 100 mallards, and (4) sufficient numbers of other migratory and native wildlife for frequent viewing by refuge visitors.
2. To promote opportunities for environmental education.
3. To promote wildlife-oriented recreation, primarily fishing and wildlife observation, on the refuge.

The refuge is bordered on all sides by levees, canals, roads, and other management and water control structures. These facilities influence the entire ecosystem of the refuge. In addition to altered drainage patterns, the waters which flow into Big Lake carry farm and household refuse to a permanent resting place on the refuge.

The use of motorboats on the lake is a well established use and provides an important commercial and recreational use of the fish resource. Construction and maintenance of waterfowl nesting structures also require the use of motorized equipment.

Wilderness designation is not recommended for any part of the Big Lake Refuge because:

1. Large volumes of silt-laden flood waters have been diverted into Big Lake by drainage projects and have altered materially the ecosystem of the entire refuge.
2. Big Lake, although created by natural forces, would not exist today--with water levels that flood three-fourths of the refuge--without man-made levees and water control structures. The entire refuge is currently involved with a Corps of Engineers' project that allows for diverting flood waters onto the refuge from planned structures; one on the north end of the refuge and one on the south end of the refuge.
3. Large drainage ditches out of Missouri have in the past and continue to deliver tons of farm and household refuse onto the north end of the refuge.
4. Use of power boats throughout the refuge is essential to the refuge's public use and management programs.

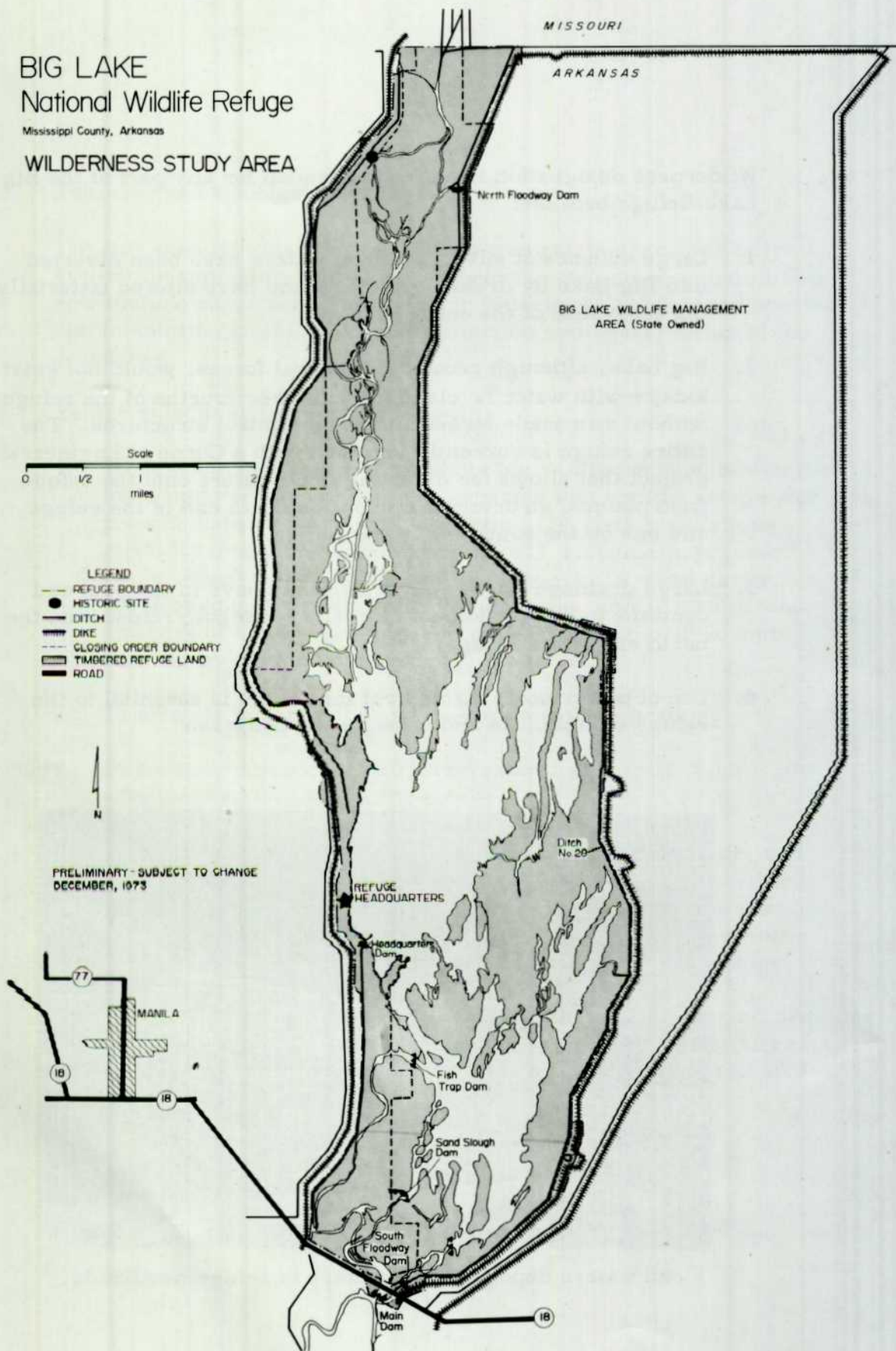


Flood waters deposit tons of refuse in refuge woodlands.

BIG LAKE National Wildlife Refuge

Mississippi County, Arkansas

WILDERNESS STUDY AREA



The Refuge System is a National network of lands and waters managed and safeguarded for preservation and enhancement of the human benefits associated with wildlife and their environments. It presently consists of over 320 units, embracing nearly 30 million acres in 46 States. About 113 refuges containing 26 million acres in over 37 States qualify for study under the Wilderness Act.

ANYONE CONCERNED WITH THIS STUDY IS URGED TO PERSONALLY INSPECT THE BIG LAKE NATIONAL WILDLIFE REFUGE. ADDITIONAL INFORMATION ON THE BIG LAKE WILDERNESS STUDY MAY BE OBTAINED FROM THE REFUGE MANAGER, BIG LAKE NATIONAL WILDLIFE REFUGE, BOX 67, MANILA, ARKANSAS 72442 OR THE REGIONAL DIRECTOR, BUREAU OF SPORT FISHERIES AND WILDLIFE, 17 EXECUTIVE PARK DRIVE, N. E., ATLANTA, GEORGIA 30329.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
17 EXECUTIVE PARK DRIVE, N. E.
ATLANTA, GEORGIA 30329

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF THE INTERIOR
EFT 413



AS THE NATION'S PRINCIPAL CONSERVATION AGENCY, THE DEPARTMENT OF THE INTERIOR HAS BASIC RESPONSIBILITIES FOR WATER, FISH, WILDLIFE, MINERAL, LAND, PARK, AND RECREATIONAL RESOURCES. INDIAN AND TERRITORIAL AFFAIRS ARE OTHER MAJOR CONCERNS OF AMERICA'S "DEPARTMENT OF NATURAL RESOURCES."

THE DEPARTMENT WORKS TO ASSURE THE WISEST CHOICE IN MANAGING ALL OUR RESOURCES SO EACH WILL MAKE ITS FULL CONTRIBUTION TO A BETTER UNITED STATES--NOW AND IN THE FUTURE.

DESCRIPTION
OF THE
BIG LAKE WILDERNESS AREA
BIG LAKE NATIONAL WILDLIFE REFUGE
MISSISSIPPI COUNTY, ARKANSAS

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 3, 4, 9, 10, 14, 15, 16, 22, 23, 26 and 27, and in

T. 16 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 27, 33 and 34, all lying westerly of the west right-of-way boundary of Ditch No. 28 of Drainage District No. 17 and lying easterly of Big Lake and the easterly channels of Little River, more particularly described as follows:

BEGINNING at a point in said Section 27, T. 16 N., R. 9 E., in the westerly right-of-way boundary of said Ditch No. 28 and 100.0 feet southerly of the North Floodway Dam, a point; thence S. $0^{\circ}18'$ E., approximately 2,600.0 feet to the south boundary of said Section 27, a point lying WEST, 0.66 foot from the southwest corner of the $SE\frac{1}{4}$ of said Section, a capped iron pipe; thence in said Section 34, T. 16 N., S. $0^{\circ}18'$ E., 52.80 feet, a capped iron pipe; thence S. $26^{\circ}44'$ W., 2,913.90 feet, a capped iron pipe; thence S. $0^{\circ}21'$ W., 1,405.80 feet, a capped iron pipe; thence S. $22^{\circ}38'$ W., 1,326.60 feet to the south boundary of said Section 34, a point lying EAST, 808.50 feet from the southwest corner thereof, a capped iron pipe; thence in said Section 3, T. 15 N., S. $0^{\circ}17'$ E., 5,092.56 feet, a capped iron pipe; thence S. $46^{\circ}34'$ E., 90.42 feet, to the south boundary of said Section 3, a point lying N. $89^{\circ}57'$ W., 1,231.56 feet from the southeast corner of the $SW\frac{1}{4}$ of said section, a capped iron pipe; thence in Section 10. S. $46^{\circ}34'$ E., 5,308.38 feet, to the east boundary of said Section 10, a point lying S. $0^{\circ}01'$ E., 999.24 feet from the northeast corner of the $SE\frac{1}{4}$ thereof, a capped iron pipe; thence in Section 11, S. $46^{\circ}34'$ E., 40.92 feet, a capped iron pipe; thence S. $17^{\circ}08'$ E., 295.68 feet, a capped iron pipe; thence S. $0^{\circ}06'$ E., 1,172.16 feet, a capped iron pipe; thence S. $51^{\circ}47'$ E., 254.10 feet to the north boundary of said Section 14, a point lying EAST, 322.08 feet from the northwest corner thereof, a

capped iron pipe; thence in Section 14, S. 73°19' E., 3,862.98 feet, a capped iron pipe; thence S. 0°15' E., 4,111.80 feet to the north boundary of said Section 23, a point lying N. 89°59' W., 1,170.84 feet from the northeast corner thereof, a capped iron pipe; thence in said Section 23, S. 0°15' E., 1,524.60 feet, a capped iron pipe; thence S. 15°15' W., 683.76 feet, a capped iron pipe; thence S. 0°17' W., 2,643.30 feet, a capped iron pipe; thence S. 23°59' E., 498.30 feet to the north boundary of said Section 26, a point lying S. 89°57' W., 1,148.4 feet from the northeast corner thereof, a capped iron pipe; thence in said Section 26, S. 77°15' W., approximately 3,500 feet to the easterly shore of a finger of Big Lake, a point; thence NORTHERLY, with the said easterly shore approximately 528.0 feet to the south boundary of said Section 23, a point; thence NORTHERLY, with said east lakeshore, in said Section 23 approximately 9,300 feet to the south boundary of said Section 14, a point; thence NORTHERLY and SOUTHERLY, in said Section 14 approximately 1,350 feet to the north boundary of said Section 23, a point; thence SOUTHERLY and NORTHERLY, in said Section 23, approximately 2,970.0 feet to the south boundary of said Section 14, a point; thence NORTHERLY, WESTERLY and SOUTHERLY, in said Section 14, approximately 12,870 feet to the north boundary of said Section 23, a point; thence SOUTHERLY, in said Section 23, approximately 1,780 feet to the east boundary of said Section 22, a point; thence in said Section 22, SOUTHWESTERLY and NORTHERLY, approximately 1,980 feet to the south boundary of said Section 15, a point; thence in said Section 15, NORTHERLY, approximately 4,290 feet to the east boundary of said Section 15, a point; thence along the shoreline and the section line, NORTHERLY, approximately 265 feet, a point; thence SOUTHERLY, NORTHERLY and SOUTHERLY, with the said easterly shoreline, approximately 11,550 feet to the north boundary of said Section 22, a point; thence in said Section 22, SOUTHERLY and NORTHERLY, approximately 2,150 feet to the south boundary of said Section 15, a point; thence NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 15, approximately 11,200 feet to the south boundary of said Section 10, a point; thence NORTHERLY and SOUTHERLY in said Section 10, approximately 5,400 feet to the north boundary of said Section 15, a point; thence in said Section 15, SOUTHERLY and NORTHERLY approximately 330 feet to the south boundary of said Section 10, a point; thence in said Section 10, NORTHERLY and SOUTHERLY, approximately 1,500 feet to the north line of said Section 15, a point; thence SOUTHERLY, in said Section 15, approximately 7,000 feet to the north line of said Section 22,

a point; thence SOUTHERLY and NORTHERLY in said Section 22, approximately 6,700 feet to the south boundary of said Section 15, a point; thence NORTHERLY and SOUTHERLY in said Section 15, approximately 2,000 feet to the north boundary of said Section 22, a point; thence SOUTHERLY, WESTERLY and NORTHERLY, in said Section 22, approximately 3,600 feet to the south boundary of said Section 15, a point; thence continuing with the easterly shore of Big Lake and the Little River, NORTHERLY, approximately 2,970 feet to the east boundary of said Section 16, a point; thence NORTHERLY, SOUTHERLY, NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 16, approximately 10,900 feet to the south boundary of said Section 9, a point; thence continuing NORTHERLY with said shore, approximately 2,300 feet to the west boundary of said Section 10, a point; thence NORTHERLY, in said Section 10, approximately 1,500 to the easterly boundary of said Section 9, a point; thence NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 9, approximately 5,600 feet to the north boundary of said Section 4, a point; thence NORTHERLY, with the most easterly shore of said Little River, approximately 6,300 feet to the south boundary of said Section 33, T. 16 N., R. 9 E., a point; thence in said Section 33, continuing with the said most easterly shore, NORTHERLY, approximately 7,600 feet to the westerly boundary of said Section 34, a point; thence NORTHERLY, in said Section 34, 1,500 feet to the south boundary of said Section 28, a point; thence NORTHERLY, in said Section 28 to the confluence of the said easterly shore of Little River with the easterly shore of Jones Cutoff, approximately 300 feet, a point; thence NORTHEASTERLY, with said east shore of Jones Cutoff in Section 28, approximately 725 feet to the west boundary of said Section 27, a point; thence continuing with said cutoff, NORTHEASTERLY, approximately 1,400 feet to the confluence of the easterly shores of Jones Cutoff and a ditch, a point; thence NORTHEASTERLY, with the said easterly shore of the ditch, approximately 1,100 feet to a point on a line parallel with and 100 feet normal to the said North Floodway Dam and its intersection with said ditch shore, a point; thence with said parallel line, EASTERLY, approximately 100 feet to the PLACE OF BEGINNING, containing 1,998.00 acres, more or less, and in

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 26 and 27 described as follows:

COMMENCING at a point on the north boundary of said Section 26, at its intersection with the westerly right-of-way boundary of said Ditch No. 28 of Drainage District

No. 17, S. $89^{\circ}57'$ W., 1,148.4 feet from the northeast corner of said section, a capped iron pipe; thence in said Section 26, S. $77^{\circ}15'$ W., approximately 3,700 to the westerly shore of a finger inlet of Big Lake, a point; thence continuing S. $77^{\circ}15'$ W., approximately 100 feet to the easterly boundary of said Section 27, a point; thence continuing S. $77^{\circ}15'$ W., in said Section 27, approximately 1,650 feet to the easterly shore of said Big Lake, a point; thence NORTHERLY and EASTERLY, with said easterly shore, approximately 3,600 feet to the west boundary of said Section 26, a point; thence SOUTHERLY, in said Section 26, approximately 660 feet to the PLACE OF BEGINNING, containing 18.00 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; an island located in Sections 22, 23, 26 and 27, containing 68.40 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; a long narrow island, locally named Katy Ray Ridge, lying in Sections 14 and 23, containing 54.00 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN: an island located in the north-central portion of Section 23, containing 5.40 acres, more or less.

The above described five areas contain in the aggregate 2,143.80 acres, more or less.

I hereby certify that the legal description and map herewith represent the location of the boundary of the Big Lake Wilderness on the Big Lake National Wildlife Refuge as approved by Public Law 94-557.

Date _____

Deputy

BIG LAKE WILDERNESS AND BI

UNITED STATES
DEPARTMENT OF THE INTERIOR

MISSISSIPPI

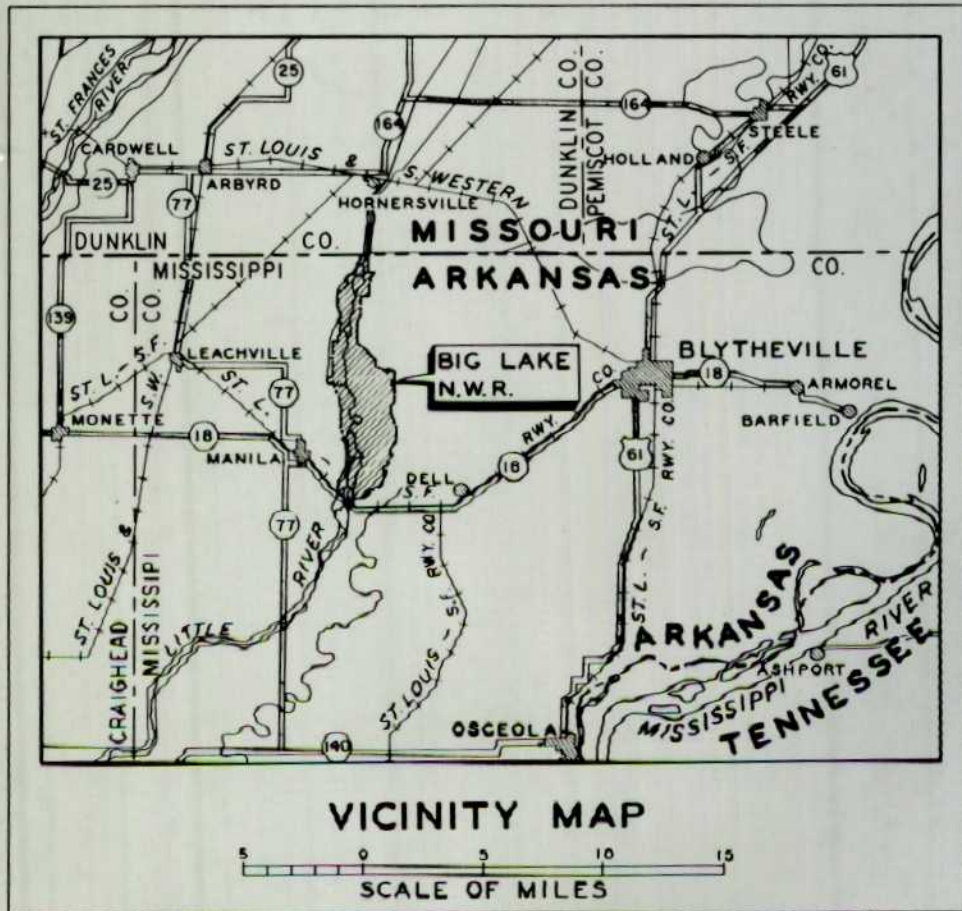
R8E

90°10'

T 16 N

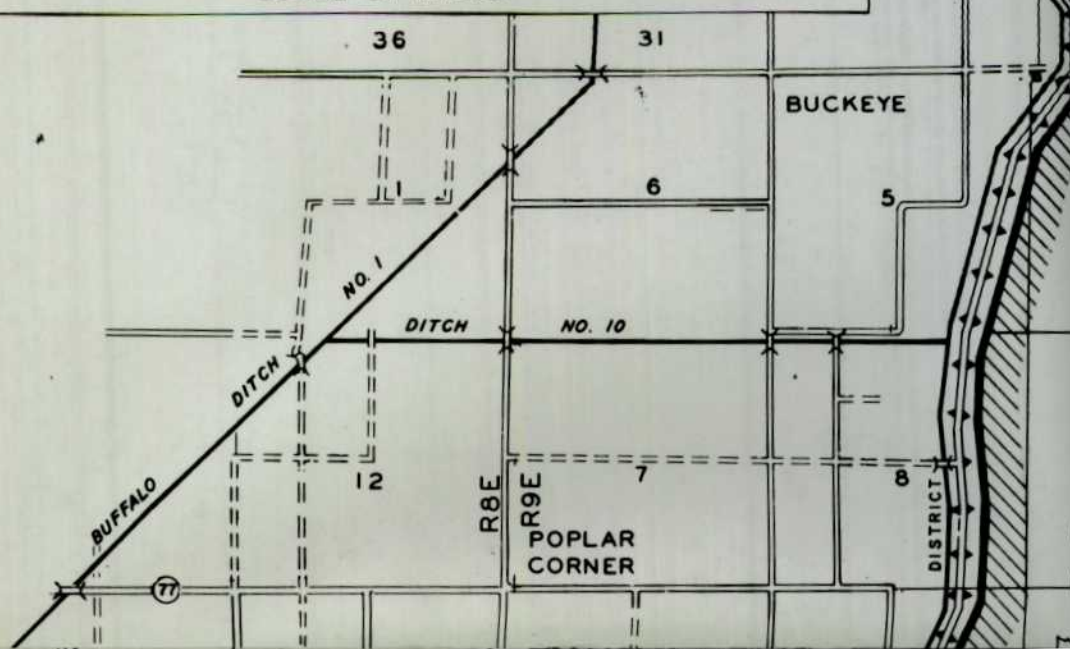
35°58'

35°56'



VICINITY MAP

5 0 5 10 15
SCALE OF MILES



DUNKLIN
MISSISSIPPI

BUCKEYE

R8E
R9E
POPLAR
CORNER

DISTRICT

LAKE NATIONAL WILDLIFE REFUGE

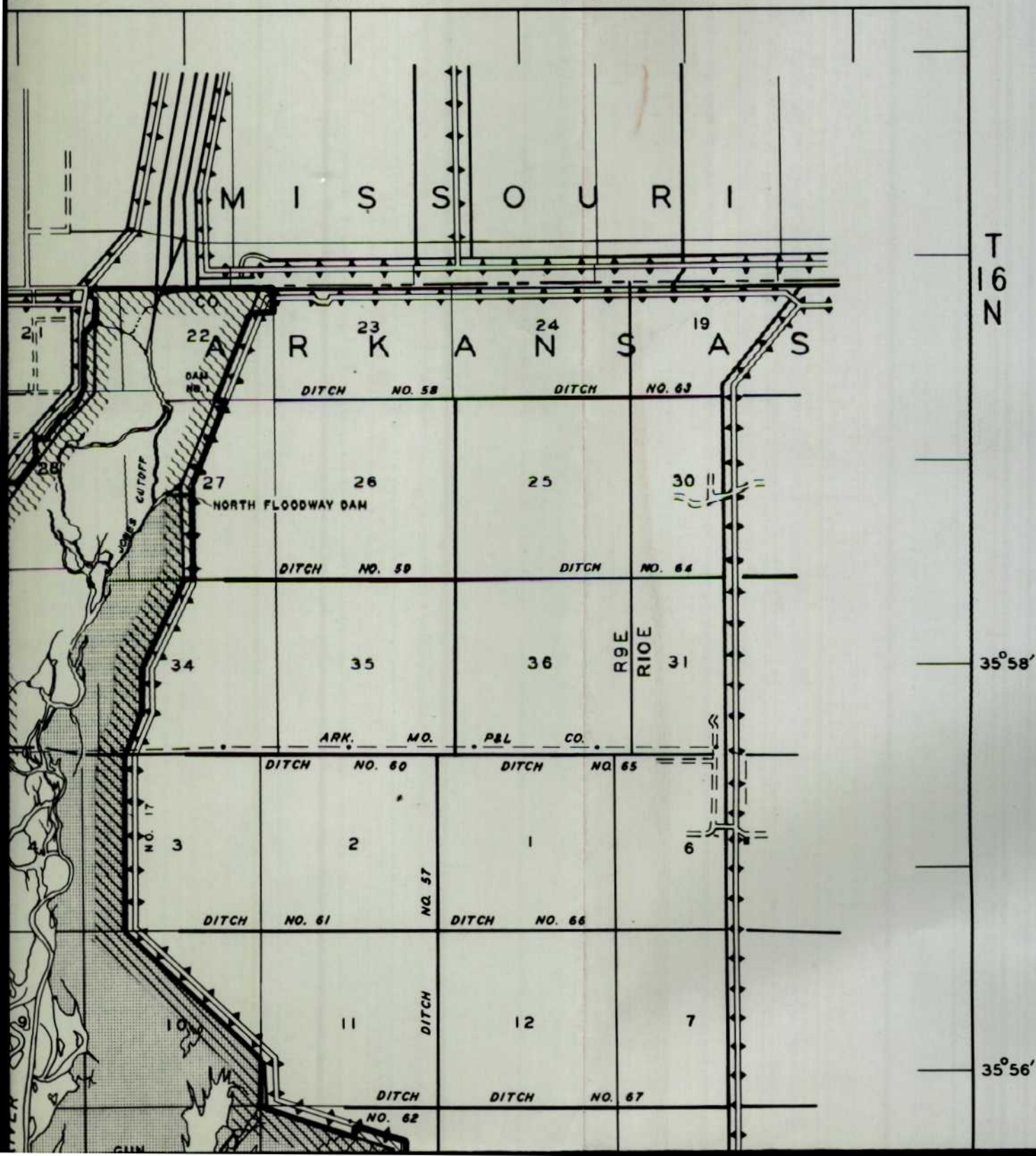
COUNTY, ARKANSAS

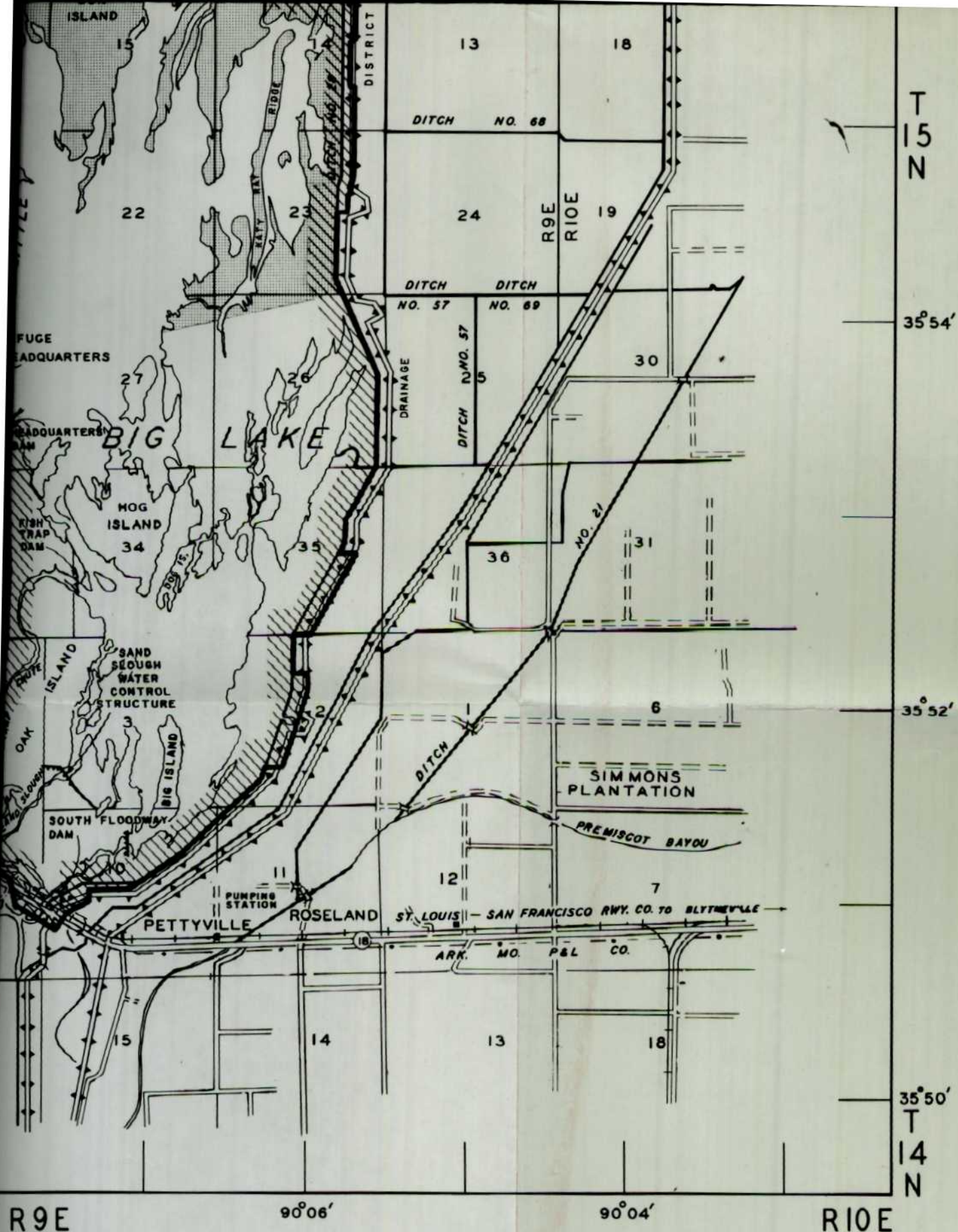
UNITED STATES
FISH AND WILDLIFE SERVICE

0°08'

90°06'

R9E 90°04'

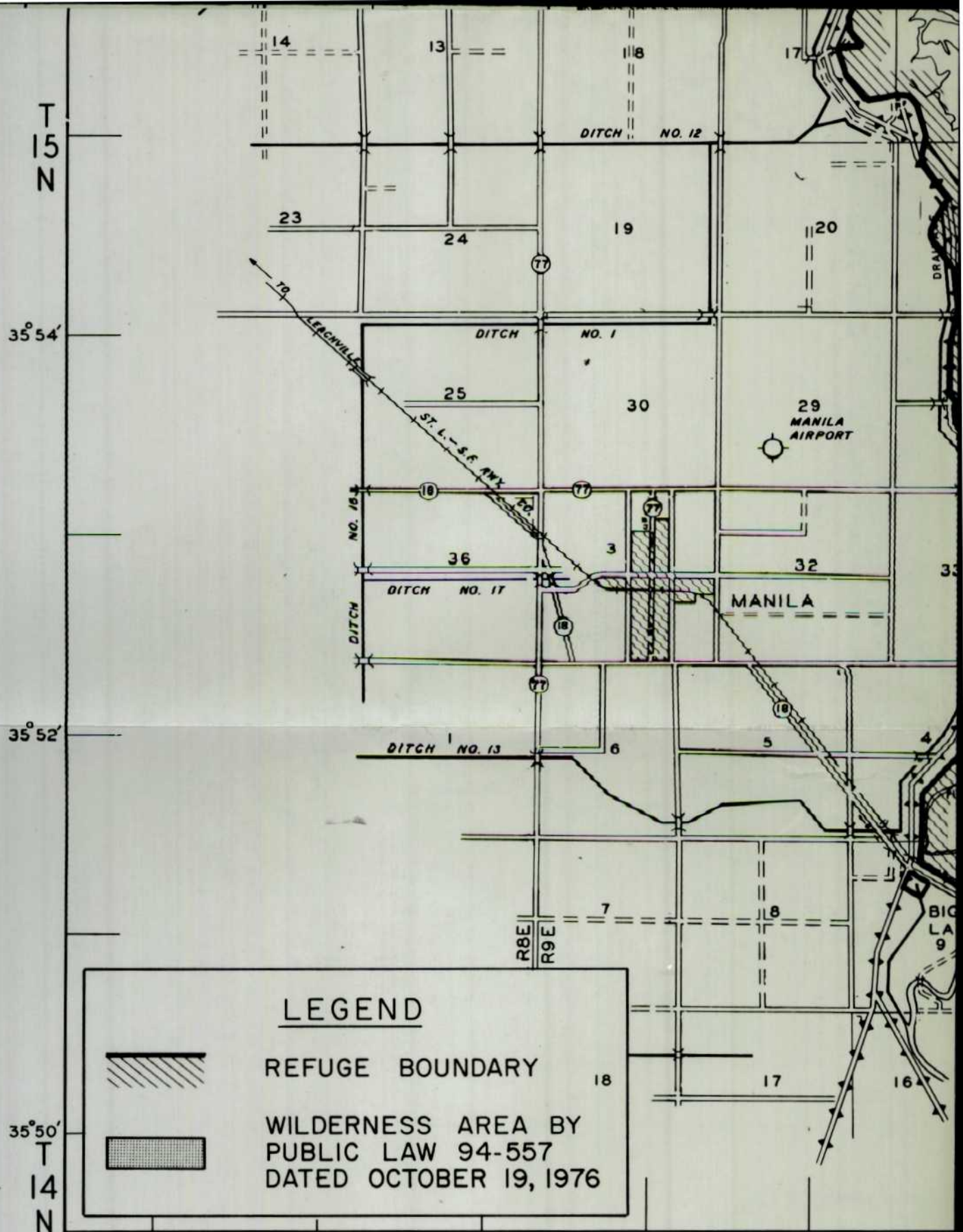




AL MERIDIAN

TOWNSHIP
DIAGRAM

MEAN
DECLINATION
1963



PUBLIC HEARING RECORD ANALYSIS

BIG LAKE WILDERNESS STUDY

As required by Section 3(d)(1)(B) of the Wilderness Act, a public hearing for the Big Lake Wilderness Study was held at Manila, Arkansas. The Notice of Public Hearing was published in the Federal Register on February 27, 1974.

An original letter announcing the hearing and explaining the proposal, a copy of the wilderness study summary, and a copy of the Regional Director's public hearing announcement were mailed from Atlanta on March 8, 1974, to Federal, State, and local governmental agencies and officials. Specific individuals include the Governor of Arkansas, County Commissions, Federal Department heads, U. S. Congressmen and Senators, and Arkansas State legislators.

A similar package was also mailed to groups, organizations, and individuals. Local newspapers and radio and television stations were provided with the hearing announcement package and a Regional Office-prepared news release.

The public hearing was held in the Manila Elementary School Gymnasium, Manila, Arkansas, on April 16, 1974. The hearing, which began at 9 a.m.,

was conducted by Raymond C. Coulter, Regional Solicitor. Associate Regional Director Phillip S. Morgan represented the Bureau of Sport Fisheries and Wildlife.

THE PUBLIC HEARING

Eighteen people attended the public hearing. Six oral or written statements were presented for the record, excluding the Bureau statement. Four statements opposed the Bureau's finding of nonsuitability and proposed wilderness for the refuge, and two spoke without taking a position.

1. Bureau of Sport Fisheries and Wildlife

Associate Regional Director Phillip S. Morgan summarized the Bureau's wilderness suitability study of Big Lake National Wildlife Refuge and reasons for the nonsuitability proposal.

2. Elected Public Officials

Arkansas Governor Dale Bumpers indicated his general interest in wilderness preservation and said his comments would be sent later in a letter read into the record by the hearing officer.

Senator John L. McClellan acknowledged the invitation to the hearing but did not comment further in a letter read into the record by the hearing officer.

J. B. Brown, Mayor of Manila, was present but did not make a statement.

3. State Agencies

Wildlife Officer Terry Hanners, representing the Arkansas Game and Fish Commission, presented a statement supporting The Wilderness Society proposal to designate about 2,500 acres as wilderness.

The Arkansas Department of Planning was represented at the hearing but did not make a statement.

4. Organizations

Three statements from organizations were presented at the hearing.

All three proposed wilderness designation for a portion of the refuge.

BEFORE AND AFTER THE HEARING

A total of 199 written statements were received prior to May 16, the date the official record closed. The great majority, 182, favored wilderness designation for a portion of the refuge. Seven statements supported the Bureau's finding of nonsuitability, and ten did not comment or had no discernible position with regard to the proposal.

1. Elected Public Officials

Arkansas Governor Dale Bumpers submitted two letters, the first without specific comment, and another supporting wilderness on about 2,600 acres as proposed by citizen groups.

U. S. Senator John L. McClellan acknowledged the public hearing notice but did not comment further.

2. Federal Officials, Departments, and Agencies

Communications were received from the General Counsel of the Department of Commerce, Bureau of Land Management, Bureau of Outdoor Recreation, U. S. Forest Service, U. S. Geological Survey, and the National Park Service, but none made a specific comment with regard to the proposal.

3. State Agencies

Arkansas Game and Fish Commission favored wilderness designation for about 2,600 acres on the refuge.

Michigan Department of Natural Resources supported the Bureau's finding of nonsuitability.

4. Organizations

Twenty-one statements were submitted by organizations. Two of these supported the Bureau's finding of nonsuitability, and 19 favored wilderness designation for a portion of the refuge.

5. Individuals

Statements from individuals totaled 172. Of this number four supported the Bureau's finding of nonsuitability, 166 favored wilderness designation for a portion of the refuge, and two took no discernible position.

SUMMARY

Two hundred three written and oral statements were submitted concerning the Big Lake Wilderness Study. The majority of these, 186, favored wilderness designation for a portion of the refuge. Seven supported the Bureau's finding of nonsuitability, and ten did not indicate a position.

DISCUSSION

Approximately 91 percent of all statements wanted wilderness for Big Lake Refuge. Recommendations ranged from general statements favoring wilderness for some part of the refuge to designation of the entire refuge acreage. The majority, 169, recommended or endorsed The Wilderness Society proposal to designate a cypress-timbered area bounded on the north by the north floodway dam, on the east by the west bank of ditch number 26, on the northwest by the east bank of the main channel of Little River, on the southwest by the open water of Big Lake, and on the south by the north boundary of a proposed impoundment. Recommended acreages varied from 1,900 to 2,600 acres.

The Bureau's study of Big Lake Refuge determined that the entire refuge does not qualify for wilderness designation under the criteria set forth in the Wilderness Act. Arguments presented by proponents of wilderness did not show that conditions were different than stated by the Bureau. Rather, these people indicated they were willing to accept wilderness

with the nonconforming conditions present on the refuge. The facts have not changed, and the Bureau continues to feel that Big Lake Refuge is nonsuitable for wilderness designation under the terms of the Wilderness Act of 1964. Designation of the area proposed by The Wilderness Society and others will lower the quality of the National Wilderness Preservation System.

*changed
6/26/71*

SUMMARY

Two hundred three written and oral statements were submitted concerning the Big Lake Wilderness Study. The majority of these, 186, favored wilderness designation for a portion of the refuge. Seven supported the Bureau's finding of nonsuitability, and ten did not indicate a position.

DISCUSSION

Approximately 91 percent of all statements wanted wilderness for Big Lake Refuge. Recommendations ranged from general statements favoring wilderness for some part of the refuge to designation of the entire refuge acreage. The majority, 169, recommended or endorsed The Wilderness Society proposal to designate a cypress-timbered area bounded on the north by the north floodway dam, on the east by the west bank of ditch number 26, on the northwest by the east bank of the main channel of Little River, on the southwest by the open water of Big Lake, and on the south by the north boundary of a proposed impoundment. Recommended acreages varied from 1,900 to 2,600 acres.

The Bureau's initial recommendation to the Secretary of the Interior explained that some of the refuge possessed wilderness qualities, but that the works of man and their effects on the refuge made the area unsuitable according to the criteria set forth in the Wilderness Act of 1964. It was stated that our final recommendation would, in large measure, be guided by public

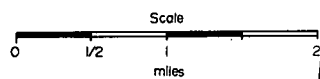
response since wilderness designation of certain portions of the refuge would be compatible with our management of the area.

The public hearing results indicate that an overwhelming majority of those expressing their opinion were willing to accept the conditions present at Big Lake within a designated wilderness. As a result of this public response, the Bureau recommends wilderness designation for approximately 1,818 acres of the cypress and hardwood timbered swamp and seasonally flooded lowland within the boundaries recommended by The Wilderness Society and other citizen groups as indicated on the attached revised map.

BIG LAKE National Wildlife Refuge

Mississippi County, Arkansas

WILDERNESS STUDY AREA

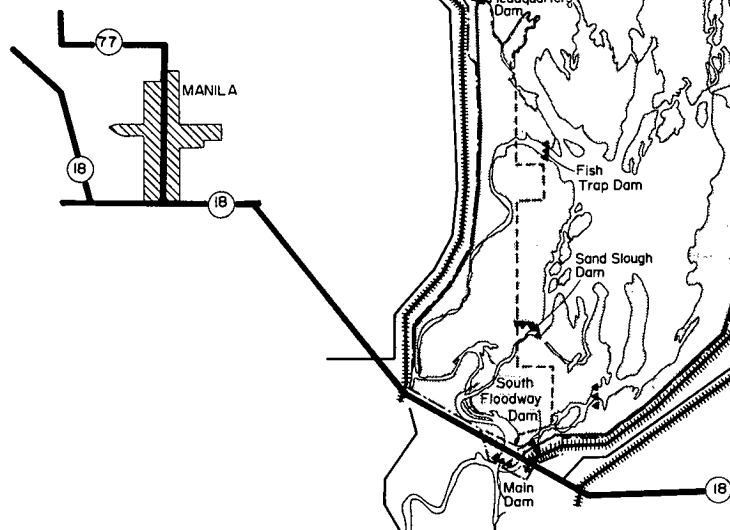


- LEGEND**
- REFUGE BOUNDARY
 - HISTORIC SITE
 - DITCH
 - ▨ DIKE
 - CLOSING ORDER BOUNDARY
 - ▨ TIMBERED REFUGE LAND
 - ROAD
 - ▨ Proposed Wilderness



PRELIMINARY - SUBJECT TO CHANGE
DECEMBER, 1973

Revised June 1974



DRAFT

A B I L L

To designate certain lands within the Big Lake National Wildlife Refuge in Mississippi County, Arkansas, as wilderness.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in accordance with Section 3(c) of the Wilderness Act of September 3, 1964 (78 Stat. 890, 892; 16 U.S.C. 1132(c)), certain lands in the Big Lake National Wildlife Refuge, Arkansas, which comprise about 1,818 acres and which are depicted on a map entitled "Big Lake Wilderness Proposal," dated June 1974, are hereby designated as wilderness.

SEC. 2. As soon as practicable after this Act takes effect, a map of the wilderness area and a description of its boundaries shall be filed with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such map and description shall have the same force and effect as if included in this Act: Provided, however, That correction of clerical and typographical errors in such map and description may be made.

SEC. 3. The area designated by this Act as wilderness shall be known as the "Big Lake Wilderness" and shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness

Act governing areas designated by that Act as wilderness areas, and any reference in that Act to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

SEC. 4. Subject to all valid rights existing on the date of enactment of this Act, lands designated as wilderness by this Act are hereby withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto.

DATE June 26, 1974

Fact Sheet--Wilderness Proposal

Name of Area

Big Lake National Wildlife Refuge

1.	Authority creating Federal unit (cite U.S. Code, Statute numbers, E.O. number, Proclamation date, etc.)	45 Stat. 1222 E. O. 2230
2.	a. Area of authorized Federal unit (acres)	11,037.88
	b. Present land ownership (acres)--Federal	11,037.88
	State/local	0
	Private	0
	Total	11,037.88
	c. Cost of acquiring remaining private lands	N/A
3.	a. Area of wilderness proposal (acres)	1,818
	b. Present land ownership (acres)--Federal	1,818
	State/local	0
	Private	0
	Total	1,818
	c. Cost of acquiring remaining private lands	N/A
4.	a. Area of "potential" wilderness (acres)	1,818
	b. Present land ownership (acres)--Federal	1,818
	State/local	0
	Private	0
	Total	1,818
	c. Cost of acquiring remaining private lands	N/A
5.	a. Does the wilderness proposal include outstanding mineral claims?	No
	b. Cost of purchasing these rights.	N/A
6.	a. Does the "potential" wilderness include outstanding mineral rights	No
	b. Cost of purchasing these rights.	N/A
7.	a. Does the proposed wilderness or "potential" wilderness area include any outstanding grazing, water, or access rights?	No
	b. Cost of purchasing these rights.	N/A

8. a. Has a GS, or other, mineral survey been conducted? None Known
 b. Date of survey. -----
 c. Findings. -----
9. Is there pending or currently needed legislation to increase acquisition ceiling or increase the area of the total Federal management unit? No
10. Will a wilderness designation necessitate changes in any present laws, executive orders, etc.? Give details. No
11. Are there any unresolved legal problems involving NEPA statements, condemnations, or other in any part of the total management unit? Provide details. None Known
12. What is official position of the State and local governments?
- State - Favor
 Oppose Governor, Ark. G&F (*New Proposal*) X
 Indifferent -----
 Unknown -----
- Local - Favor -----
 Oppose -----
 Indifferent -----
 Unknown County X
13. If the proposal involves any Indian rights, what is the position of the Indians? N/A

Favor

Oppose
Indifferent
Unknown

14. Views of other Interior Bureaus:

Geological Survey	No position stated
Bureau of Mines	Unknown
Bureau of Indian Affairs	Unknown
Bureau of Land Management	No position stated
Bureau of Sport Fish/Wildlife	Favor (Negative Proposal)
National Park Service	No position stated
Bureau of Reclamation	Unknown
Solicitor's Office	Unknown

15. Private organizations favoring wilderness. The Southern Oregon-Northern California Wilderness Coalition; Arkansas Wildlife Federation--Ft. Smith, Jackson County, Grant Prairie, & Pulaski County Chapters; Ouchita Wildlife Association; Hot Springs Wildlife Federation; Jefferson Audubon Society, Jefferson Wildlife Assn.; Ozark Society, Pulaski Chapter; Saguaro Ecology Club, St. Francis Lake Recreation
16. Private organizations opposing wilderness. (Continued below)

The Wilderness Society, San Diego Group & Wildlife Management Institute

17. What impact will the proposal have on other Federal agencies?

Possible conflict with Corps of Engineers flood control and drainage project (St. Francis River Basin Project).

18. List any other specific resource tradeoffs (not cited above) are associated with this proposal?

None known.

15. (Cont.) Association, Inc.; Sierra Club, Harvey Broome Group; Sierra Club, Tampa Bay Chapter; Southwest River Study Committee; Sussex Woodlands, Inc; The Wilderness Society; Western Wilderness Association; Yell County Wildlife Federation.

ROUTING AND TRANSMITTAL SLIP

Date

4/27/93

TO: (Name, office symbol, room number, building, Agency/Post)

Initials

Date

1. ~~SAM DRAKE~~, ~~FW5~~, ~~Region 4~~

2. ~~Atlanta, Ga.~~

3. ~~Phil Morgan~~

4.

5.

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

FYI. I discussed this with Phil Morgan in your absence last week and he advised me to send it on. After reviewing, please share it with Phil Morgan. Thanks.

Dennis

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)

Room No.—Bldg.

Phone No.

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
NORTHEAST ARKANSAS REFUGES
Wapanocca/Big Lake/Cache River National Wildlife Refuges
P.O. Box 279, Turrell, AR 72384; Phone: 501/343-2595
Date: April 26, 1993

Nancy G. Skinner
Southwest Regional Office
National Park Service
U.S. Dept. of Interior
1220 S. St. Francis Dr.
P.O. Box 728
Santa Fe, NM 87504-0728

Dear Nancy,

Please find enclosed a copy of the Big Lake Natural Area Brief which was updated in August 1992, and a copy of the Request for Feedback on the Big Lake Wilderness Area which was sent to the USFS's Southeast Region Wilderness Excellence Team for their comments. The problems associated with the Wilderness Area also apply to the Natural Area and I believe the narrative describing the situation also applies.

The fact that these problems are on-going lead us to the conclusion that something must be done in the near future to protect the Natural Area. The siltation, trash/debris, tree mortality, and the possible chemical contamination are the primary threats. The recent successful nesting of the bald eagle in the Natural Area adds to our concerns for the area.

With regards to your Section 8 report to Congress, we could like for all of Big Lake's problems to be listed, especially the accelerated succession of the lake due to siltation. Please forward us a draft of your report and your Regional Director's letter via Fax (501) 343-2416 so we may suggest any changes that are necessary.

If you need additional information on the area, please contact Dennis Widner, Project Leader, Northeast Arkansas Refuges at (501) 343-2395 or Bobby Moore, Big Lake NWR at (501) 564-2429.

Sincerely,


Luke F. Eggering
Refuge Manager

LFE/bs

Big Lake Wilderness - Request for Feedback

History and Background

Approximately 2,100 acres of the Big Lake National Wildlife Refuge was designated as a Wilderness Area by Public Law 94-557 on October 19, 1976. Big Lake NWR is located in north-central Mississippi county in northeastern Arkansas and contains approximately 11,038 acres. The refuge lies within the Arkansas Delta, and except for the adjacent 12,000-acre Big Lake Wildlife Management Area, it is totally surrounded by cotton producing farm land. The Big Lake watershed consists of 2,500 square miles (over 1.2 million acres) of Missouri agricultural land. Northeast Arkansas and Southeast Missouri was once a vast bottomland hardwood swamp with meandering river channels, sloughs, cypress breaks, and hardwood ridges but during the late 1800's and throughout the 20th century the area was logged and drained. The self proclaimed largest drainage district in the world, the Little River Drainage District, has turned the entire watershed into productive farmland. The drainage district maintains 250 miles of levees and 1,200 miles of ditches which all funnel into the north end of the refuge. Through the Flood Control Act of 1935 the Corps of Engineers and the drainage districts were given authorization to use Big Lake as a sump for flood water. Unfortunately, the problems associated with this flood water such as trash, drift, possible chemical contamination, and the silt-laden water itself, have degraded the refuge and especially the Wilderness Area.

During the mid-1970's a 10.5 mile ditch was dredged around the west boundary of the refuge, and a series of COE water control structures were constructed to divert some of the water from Missouri around the refuge. Although 16 million dollars were spent on the project, due to water management agreements signed by the FWS, COE and the drainage interests, the only time water could be diverted around the refuge was when the water in the ditches were below flood levels. Consequently, every time there was a flood in the system, the same drift, trash and silt problems continued.

According to preliminary data furnished to the FWS by geologists from the University of Arkansas, carbon dating from core samples in the refuge's lake bottom sediment revealed that since 1938 silt up to one meter deep has been deposited. At the north end of the refuge, especially on the Wilderness Area, the effects of the drift and trash are much more apparent. Drift accumulation up to four feet deep and scouring erosion through the Wilderness Area timber are apparent, and tree-core samples in the Wilderness Area timber indicate slower growth rates since the late 1970's. This correlates with the completion of the diversion project. The absence of oak species and other water intolerant species, even on relatively high areas of the Wilderness Area, also suggests that there has been an adverse impact on the timber.

Ironically, the FWS's Big Lake Wilderness Study Summary of 1975 recommended that no part of Big Lake Refuge be designated as wilderness because:

1. Large volumes of silt-laden waters have been diverted into Big Lake by drainage projects and have altered materially the ecosystem of the entire refuge.
2. Although created by natural forces, Big Lake would not exist today without man-made levees and water control structures.
3. Missouri drainage ditches had in the past and continue to deliver tons of farm and household refuse onto the north end of the refuge.
4. Use of power boats throughout the refuge is essential to the refuge's public use and management programs.

To date only the power boat issue has been significantly addressed. By including only land areas and exempting watered areas from the Wilderness Area, the FWS's could allow public use to continue around the area.

Recently the cooperative water management agreement has been amended to allow flood water to be diverted around the refuge during minor floods, and a drift barrier has been installed to try and limit the amount of drift/trash from entering the refuge. During any significant flooding event, however, we still have the same old problems.

As Wilderness managers we realize that this system can not be allowed to degrade further. The silt from the floodwater has greatly accelerated the succession of Big Lake, and the continued contamination of the Wilderness Area will eventually lead to mortality in even the most tolerant trees. We are in the process of "brainstorming" for possible solutions to our problem and would appreciate any constructive comments on the management of our unique dilemma.

Although the problems within the Wilderness Area are readily seen with the naked eye, to date there have not been attempts to document, quantitatively or qualitatively, the actual damages to the area.

Documentation

A comprehensive plan to document these damages would have to be the first step to recovery. Sediment core samples, timber core samples, and testing for possible chemical contamination have been ways suggested to identify the magnitude of the problem. Are there other ways we have omitted? Who could or should undertake a study of this nature? Are there funding sources available for Wilderness Research?

Mitigation or Restoration

- Can the area be restored?
- How can the Wilderness Area be restored? Timber cutting followed by the planting of tree species that once occurred in the floodplain has been one suggestion.
- Should the drift/trash be removed from the system?

- Should we try to mitigate damages instead?
- How can the damages be mitigated?
- Should the area be removed from the Wilderness Preservation System?

Prevention

- How can we minimize or eliminate future problems?
- Are there legal avenues the FWS should be taking? (Specifically within the Wilderness Act of 1964)
- When two Congressional Acts conflict, namely the Flood Control Act of 1935 and the Wilderness Act of 1964, which Act takes precedence?
- Who should we contact to explore these possibilities?

Update:

Natural Landmark Brief September 1974

1. Site: Big Lake Natural Area, Mississippi County, Arkansas
2. Description: The approximately 5,000-acre landmark tract, located within the 11,038-acre Big Lake National Wildlife Refuge, is an area characterized by a lake bordered by cypress swamp and southern bottomland hardwood forests. There are large tracts of seasonally flooded bottomlands, open water and more or less permanently flooded swamplands within this area. The swamplands contain many pure stands of bald cypress, which are the only significant stands of virgin timber remaining in the area. Threatened and endangered bird species are known to inhabit or visit the area and an abundance of other animals typical of such areas are present. Approximately 2,100 acres of the refuge has been designated as a Wilderness Area and that area lies almost entirely within the natural area boundary. The natural area site is located 3 miles east of Manila, Arkansas.
3. Owner: U.S. Government; administered by the U.S. Fish and Wildlife Service, Big Lake National Wildlife Refuge, Department of the Interior.
4. Proposed by: Gary S. Waggoner in one of the Eastern Deciduous Forest Themes studies.
5. Significance: The area is the only comparatively large area remaining in the northeast Arkansas region that contains a significant amount of virgin timber. It illustrates well the northern extension of southern swampland and bottomland hardwood forest types of the Mississippi Embayment. This southern flora is mixed with Ozark and mid-western species, making the area unusually rich from a floristic standpoint. It supports threatened or endangered bird species and an abundance of other animals typical of the forest types present. The area stands out as a tract of nature surrounded by many square miles of agricultural lands.
6. Land Use: The area is primarily a wildlife refuge with limited hunting and fishing opportunities.
7. Dangers to Integrity: The factors which were deemed "dangers" to the Natural Area in 1974 such as public pressure for recreation, timber thinning for deer management and increased water elevations are no longer considered a threat. However, siltation, drift accumulations, and possible agricultural chemical contaminations from the Missouri watershed are the primary dangers to the natural area.
8. Special Conditions: The water level in Big Lake is maintained by manmade dams, but at or near its original level. Periodic debris, such as silt, drift, and trash, washes through

the refuge from farmlands in the Missouri watershed. When the area was designated in the mid-1970's, the natural area was not adversely affected by these contaminants. However, over the past 20 years the ecosystem has experienced significant impacts. Timber mortality, increased crown thinning and slower growth rates within the timber have been observed and documented in much of the forested portions of the natural area.

9. Studied by: This area was originally studied by Dr. Edward E. Dale, Jr., Professor of Botany, and Robert T. Huffman, Graduate Assistant, Department of Botany and Bacteriology, University of Arkansas, Fayetteville, Arkansas.

10. Briefing Update: This brief was updated by Luke F. Eggering, Refuge Manager, Big Lake NWR and approved by Glem Miller, Acting Project Leader, Northeast Arkansas Refuges, on August 18, 1992.

U.S. Fish and Wildlife Service
Region Four

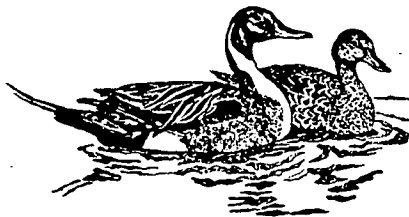
Date: April 16, 1993

To: Refuge Manager, NE Arkansas Refuges

Please see Ken Chitwood's note relative to getting the Forest Service Wilderness Excellence Team input into the Big Lake Wilderness issue. You have the "green light" to proceed.

Sam

Attachment



Sam

4/15/93

I don't have any problems
with the refuge seeking
assistance from the WET

From what they have
described here they
do have some concerns
and FWS should be
addressing these issues
To my knowledge, FWS
hasn't withdrawn an area
from Wilderness designation
Chetwood

1. Ken Chitwood

UNITED STATES GOVERNMENT

MEMORANDUM

DATE: March 29, 1993

REPLY TO

ATTN OF: Refuge Manager, FWS, Big Lake NWR, Manila, Arkansas

SUBJECT: Big Lake Wilderness - Request for Feedback

TO: Associate Manager, FWS, Region 4, Atlanta, GA (RP-1) *JP*

We are in the process of trying to address some of the continuing problems within the Big Lake Wilderness Area. Since these problems are so complex, and we have little practical experience with Wilderness Management, we would like to solicit advice from experts in the Wilderness Management Field.

Within the Southeast Region of the Forest Service (Region 8), there is a Wilderness Excellence Team (WET) which consists of representatives from each Southeast forest with wilderness, two current National WET members, and a Regional Wilderness Specialist. They provide technical assistance and advise with on-the-ground wilderness management issues, and act within an intra-regional information network to discuss and provide input on Wilderness management problems.

We would like to submit a brief summary of the Big Lake Wilderness history and an explanation of our current problems for their review. Hopefully, their feedback may provide some assistance and possibly some insight as to the direction we need to be taking. Please review the attached Big Lake Wilderness Summary. If you have any input or objection to us sending this to the Wilderness Excellence Team, please let us know.

Luke Pizzini

Big Lake Wilderness - Request for Feedback

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... O/C LAKE NATIONAL WILDLIFE REFUGE

- Should we try to mitigate damages instead?
- How can the damages be mitigated?
- Should the area be removed from the Wilderness Preservation System?

Prevention

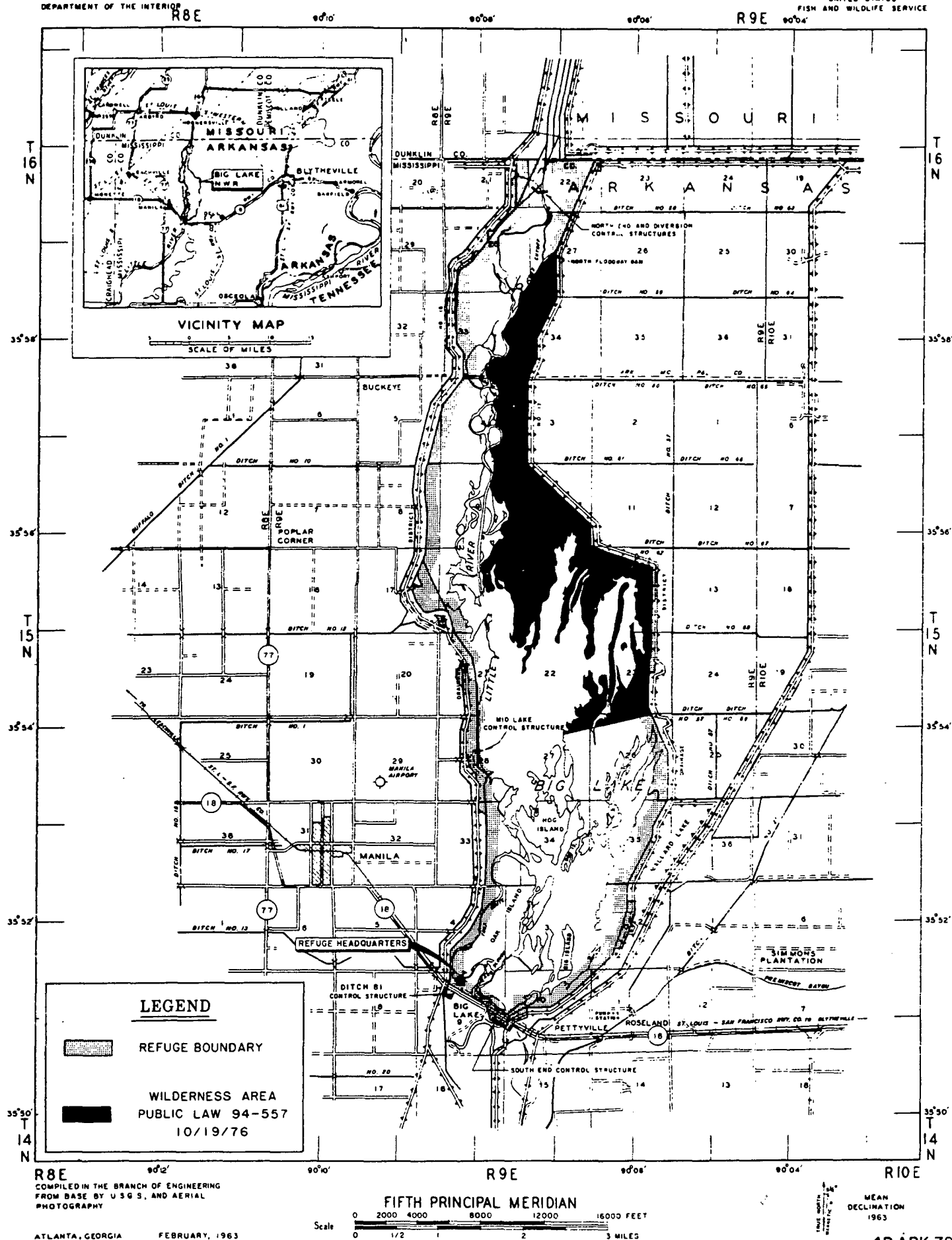
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- Who should we contact to explore these possibilities?

BIG LAKE NATIONAL WILDLIFE REFUGE

MISSISSIPPI COUNTY, ARKANSAS

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE



Refuge Manager, J.N. "Ding" Darling NWR

June 20, 1977

Senior Staff Specialist, Operations
Refuges & Wildlife Resources

Wilderness Areas - Legal Description & Map

Attached are your file copies of the legal description and Class B refuge map with wilderness boundary of the J.N. "Ding" Darling Wilderness Area as designated by Public Law 94-557, October 19, 1976.

Curtis T. Wilson

Attachments

Identical Memo mailed to:

Big Lake NWR

Chassahowitzka NWR

Lacassine NWR

Swanquarter NWR

Lake Woodruff NWR

VANDYCK:dw

"Play Safe - 10-4"

DESCRIPTION
OF THE
BIG LAKE WILDERNESS AREA
BIG LAKE NATIONAL WILDLIFE REFUGE
MISSISSIPPI COUNTY, ARKANSAS

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 3, 4, 9, 10, 14, 15, 16, 22, 23, 26 and 27, and in

T. 16 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 27, 33 and 34, all lying westerly of the west right-of-way boundary of Ditch No. 28 of Drainage District No. 17 and lying easterly of Big Lake and the easterly channels of Little River, more particularly described as follows:

BEGINNING at a point in said Section 27, T. 16 N., R. 9 E., in the westerly right-of-way boundary of said Ditch No. 28 and 100.0 feet southerly of the North Floodway Dam, a point; thence S. $0^{\circ}18'$ E., approximately 2,600.0 feet to the south boundary of said Section 27, a point lying WEST, 0.66 foot from the southwest corner of the SE $\frac{1}{4}$ of said Section, a capped iron pipe; thence in said Section 34, T. 16 N., S. $0^{\circ}18'$ E., 52.80 feet, a capped iron pipe; thence S. $26^{\circ}44'$ W., 2,913.90 feet, a capped iron pipe; thence S. $0^{\circ}21'$ W., 1,405.80 feet, a capped iron pipe; thence S. $22^{\circ}38'$ W., 1,326.60 feet to the south boundary of said Section 34, a point lying EAST, 808.50 feet from the southwest corner thereof, a capped iron pipe; thence in said Section 3, T. 15 N., S. $0^{\circ}17'$ E., 5,092.56 feet, a capped iron pipe; thence S. $46^{\circ}34'$ E., 90.42 feet, to the south boundary of said Section 3, a point lying N. $89^{\circ}57'$ W., 1,231.56 feet from the southeast corner of the SW $\frac{1}{4}$ of said section, a capped iron pipe; thence in Section 10. S. $46^{\circ}34'$ E., 5,308.38 feet, to the east boundary of said Section 10, a point lying S. $0^{\circ}01'$ E., 999.24 feet from the northeast corner of the SE $\frac{1}{4}$ thereof, a capped iron pipe; thence in Section 11, S. $46^{\circ}34'$ E., 40.92 feet, a capped iron pipe; thence S. $17^{\circ}08'$ E., 295.68 feet, a capped iron pipe; thence S. $0^{\circ}06'$ E., 1,172.16 feet, a capped iron pipe; thence S. $51^{\circ}47'$ E., 254.10 feet to the north boundary of said Section 14, a point lying EAST, 322.08 feet from the northwest corner thereof, a

capped iron pipe; thence in Section 14, S. 73°19' E., 3,862.98 feet, a capped iron pipe; thence S. 0°15' E., 4,111.80 feet to the north boundary of said Section 23, a point lying N. 89°59' W., 1,170.84 feet from the northeast corner thereof, a capped iron pipe; thence in said Section 23, S. 0°15' E., 1,524.60 feet, a capped iron pipe; thence S. 15°15' W., 683.76 feet, a capped iron pipe; thence S. 0°17' W., 2,643.30 feet, a capped iron pipe; thence S. 23°59' E., 498.30 feet to the north boundary of said Section 26, a point lying S. 89°57' W., 1,148.4 feet from the northeast corner thereof, a capped iron pipe; thence in said Section 26, S. 77°15' W., approximately 3,500 feet to the easterly shore of a finger of Big Lake, a point; thence NORTHERLY, with the said easterly shore approximately 528.0 feet to the south boundary of said Section 23, a point; thence NORTHERLY, with said east lakeshore, in said Section 23 approximately 9,300 feet to the south boundary of said Section 14, a point; thence NORTHERLY and SOUTHERLY, in said Section 14 approximately 1,350 feet to the north boundary of said Section 23, a point; thence SOUTHERLY and NORTHERLY, in said Section 23, approximately 2,970.0 feet to the south boundary of said Section 14, a point; thence NORTHERLY, WESTERLY and SOUTHERLY, in said Section 14, approximately 12,870 feet to the north boundary of said Section 23, a point; thence SOUTHERLY, in said Section 23, approximately 1,780 feet to the east boundary of said Section 22, a point; thence in said Section 22, SOUTHWESTERLY and NORTHERLY, approximately 1,980 feet to the south boundary of said Section 15, a point; thence in said Section 15, NORTHERLY, approximately 4,290 feet to the east boundary of said Section 15, a point; thence along the shoreline and the section line, NORTHERLY, approximately 265 feet, a point; thence SOUTHERLY, NORTHERLY and SOUTHERLY, with the said easterly shoreline, approximately 11,550 feet to the north boundary of said Section 22, a point; thence in said Section 22, SOUTHERLY and NORTHERLY, approximately 2,150 feet to the south boundary of said Section 15, a point; thence NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 15, approximately 11,200 feet to the south boundary of said Section 10, a point; thence NORTHERLY and SOUTHERLY in said Section 10, approximately 5,400 feet to the north boundary of said Section 15, a point; thence in said Section 15, SOUTHERLY and NORTHERLY approximately 330 feet to the south boundary of said Section 10, a point; thence in said Section 10, NORTHERLY and SOUTHERLY, approximately 1,500 feet to the north line of said Section 15, a point; thence SOUTHERLY, in said Section 15, approximately 7,000 feet to the north line of said Section 22,

a point; thence SOUTHERLY and NORTHERLY in said Section 22, approximately 6,700 feet to the south boundary of said Section 15, a point; thence NORTHERLY and SOUTHERLY in said Section 15, approximately 2,000 feet to the north boundary of said Section 22, a point; thence SOUTHERLY, WESTERLY and NORTHERLY, in said Section 22, approximately 3,600 feet to the south boundary of said Section 15, a point; thence continuing with the easterly shore of Big Lake and the Little River, NORTHERLY, approximately 2,970 feet to the east boundary of said Section 16, a point; thence NORTHERLY, SOUTHERLY, NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 16, approximately 10,900 feet to the south boundary of said Section 9, a point; thence continuing NORTHERLY with said shore, approximately 2,300 feet to the west boundary of said Section 10, a point; thence NORTHERLY, in said Section 10, approximately 1,500 to the easterly boundary of said Section 9, a point; thence NORTHERLY, SOUTHERLY and NORTHERLY, in said Section 9, approximately 5,600 feet to the north boundary of said Section 4, a point; thence NORTHERLY, with the most easterly shore of said Little River, approximately 6,300 feet to the south boundary of said Section 33, T. 16 N., R. 9 E., a point; thence in said Section 33, continuing with the said most easterly shore, NORTHERLY, approximately 7,600 feet to the westerly boundary of said Section 34, a point; thence NORTHERLY, in said Section 34, 1,500 feet to the south boundary of said Section 28, a point; thence NORTHERLY, in said Section 28 to the confluence of the said easterly shore of Little River with the easterly shore of Jones Cutoff, approximately 300 feet, a point; thence NORTHEASTERLY, with said east shore of Jones Cutoff in Section 28, approximately 725 feet to the west boundary of said Section 27, a point; thence continuing with said cutoff, NORTHEASTERLY, approximately 1,400 feet to the confluence of the easterly shores of Jones Cutoff and a ditch, a point; thence NORTHEASTERLY, with the said easterly shore of the ditch, approximately 1,100 feet to a point on a line parallel with and 100 feet normal to the said North Floodway Dam and its intersection with said ditch shore, a point; thence with said parallel line, EASTERLY, approximately 100 feet to the PLACE OF BEGINNING, containing 1,998.00 acres, more or less, and in

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; those parts of Sections 26 and 27 described as follows:

COMMENCING at a point on the north boundary of said Section 26, at its intersection with the westerly right-of-way boundary of said Ditch No. 28 of Drainage District

No. 17, S. $89^{\circ}57'$ W., 1,148.4 feet from the northeast corner of said section, a capped iron pipe; thence in said Section 26, S. $77^{\circ}15'$ W., approximately 3,700 to the westerly shore of a finger inlet of Big Lake, a point; thence continuing S. $77^{\circ}15'$ W., approximately 100 feet to the easterly boundary of said Section 27, a point; thence continuing S. $77^{\circ}15'$ W., in said Section 27, approximately 1,650 feet to the easterly shore of said Big Lake, a point; thence NORTHERLY and EASTERLY, with said easterly shore, approximately 3,600 feet to the west boundary of said Section 26, a point; thence SOUTHERLY, in said Section 26, approximately 660 feet to the PLACE OF BEGINNING, containing 18.00 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; an island located in Sections 22, 23, 26 and 27, containing 68.40 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN; a long narrow island, locally named Katy Ray Ridge, lying in Sections 14 and 23, containing 54.00 acres, more or less.

T. 15 N., R. 9 E., FIFTH PRINCIPAL MERIDIAN: an island located in the north-central portion of Section 23, containing 5.40 acres, more or less.

The above described five areas contain in the aggregate 2,143.80 acres, more or less.

NATIONAL WILDERNESS PRESERVATION SYSTEM
BIG LAKE WILDERNESS
ARKANSAS

I hereby certify that the legal description and map
herewith represent the location of the boundary of the
Big Lake Wilderness on the Big Lake National Wildlife
Refuge as approved by Public Law 94-557.

JUN 15 1977

Date


Deputy Regional Director

BIG LAKE WILDERNESS AND BIG

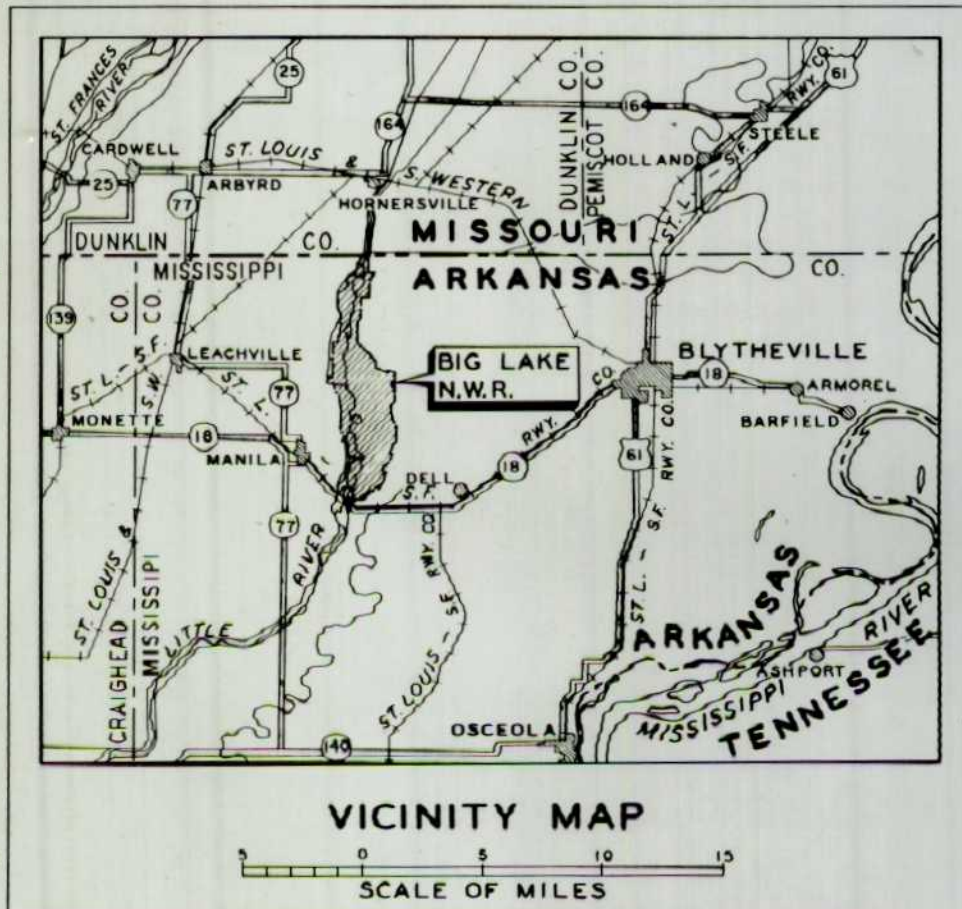
UNITED STATES
DEPARTMENT OF THE INTERIOR

MISSISSIPPI C

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90°10'

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16
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R8E
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DUNKLIN CO.
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20

29

32

NO. 16

36

31

BUCKEYE

6

5

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DITCH

NO. 10

12

R8E

R9E

POPLAR
CORNER

7

8

DISTRICT

LAKE NATIONAL WILDLIFE REFUGE

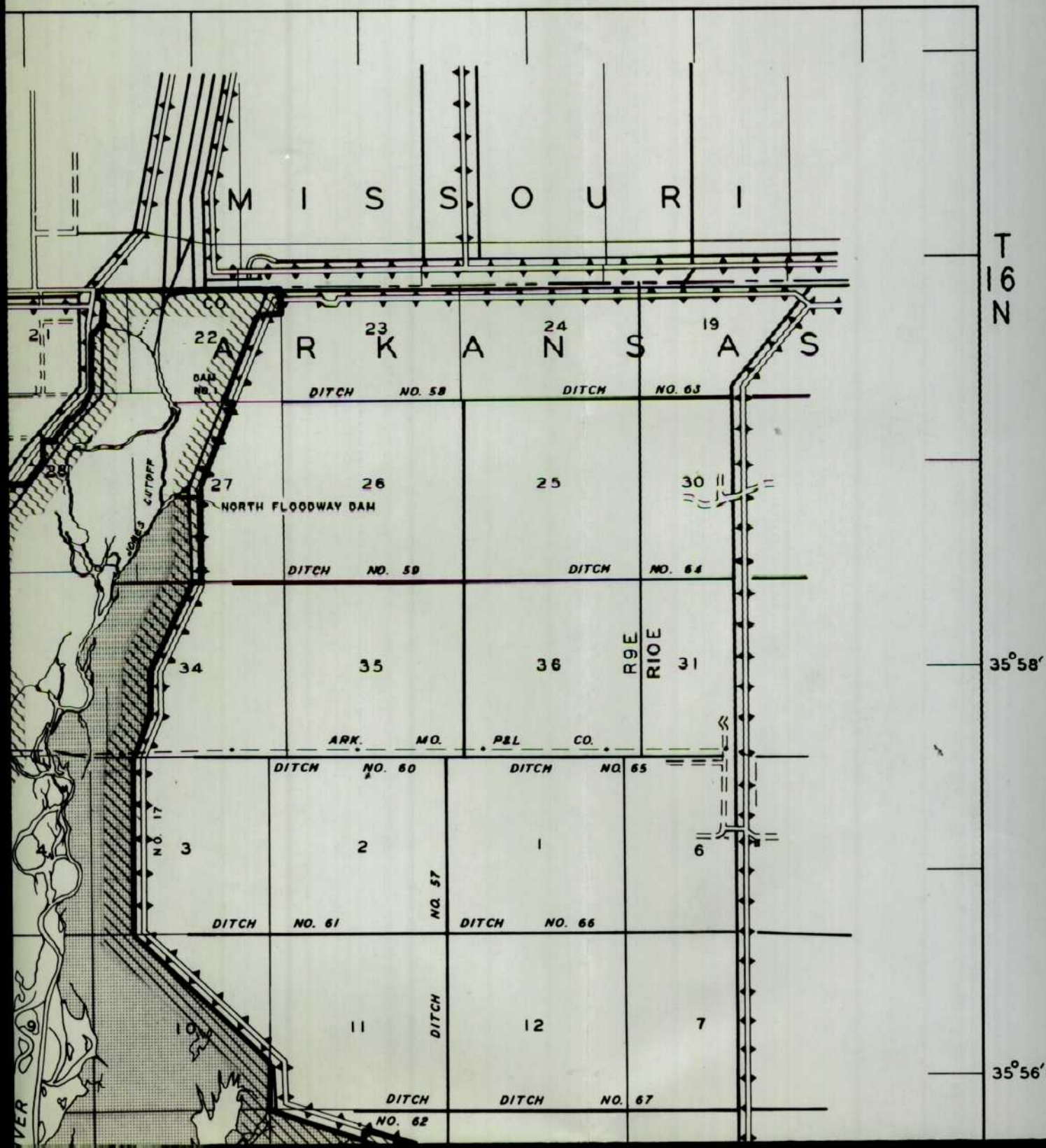
OUNTY, ARKANSAS

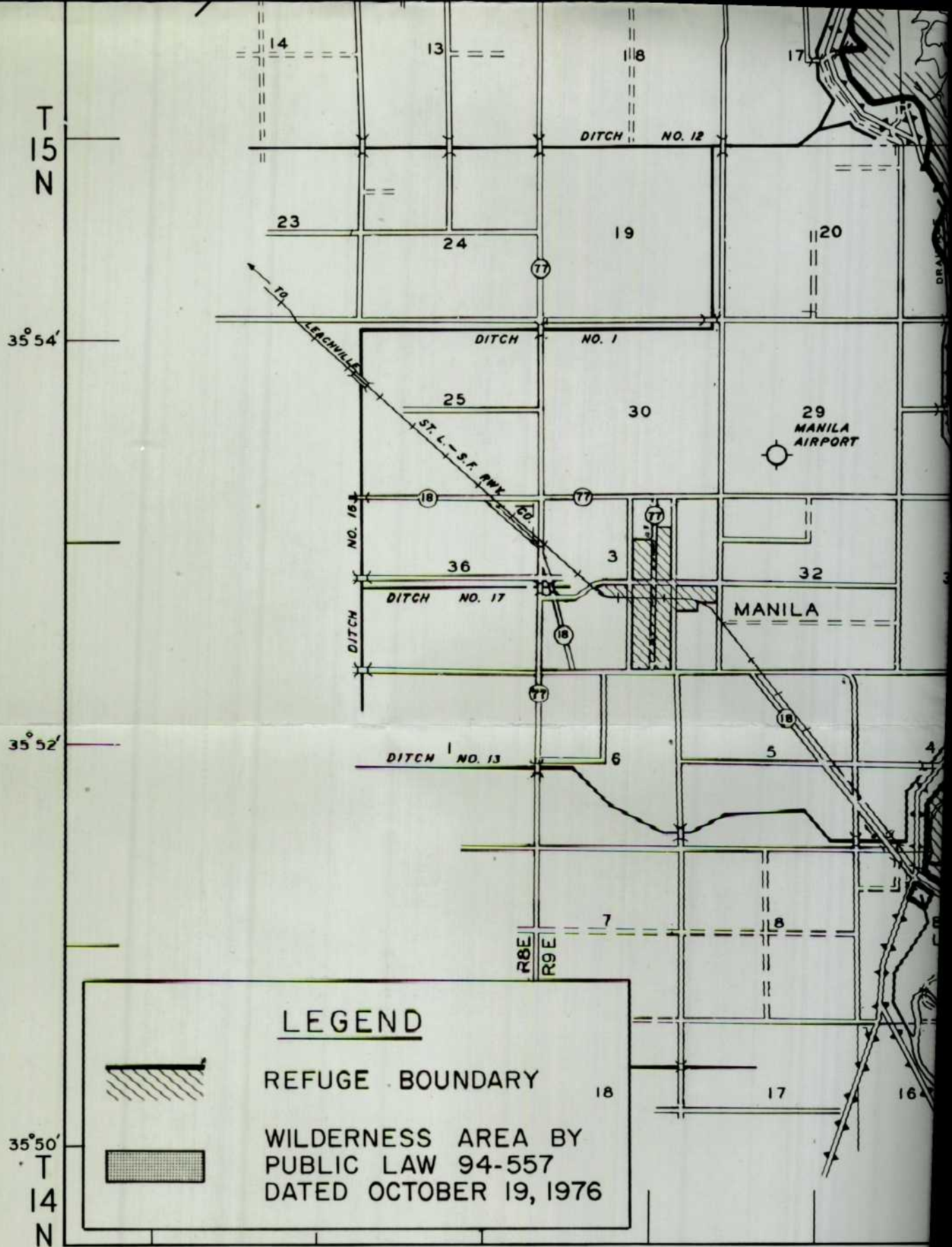
UNITED STATES
FISH AND WILDLIFE SERVICE

90°08'

90°06'

R 9E 90°04'





R8E

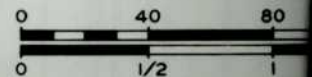
COMPILED IN THE BRANCH OF ENGINEERING
FROM BASE BY U.S.G.S., AND AERIAL
PHOTOGRAPHY.

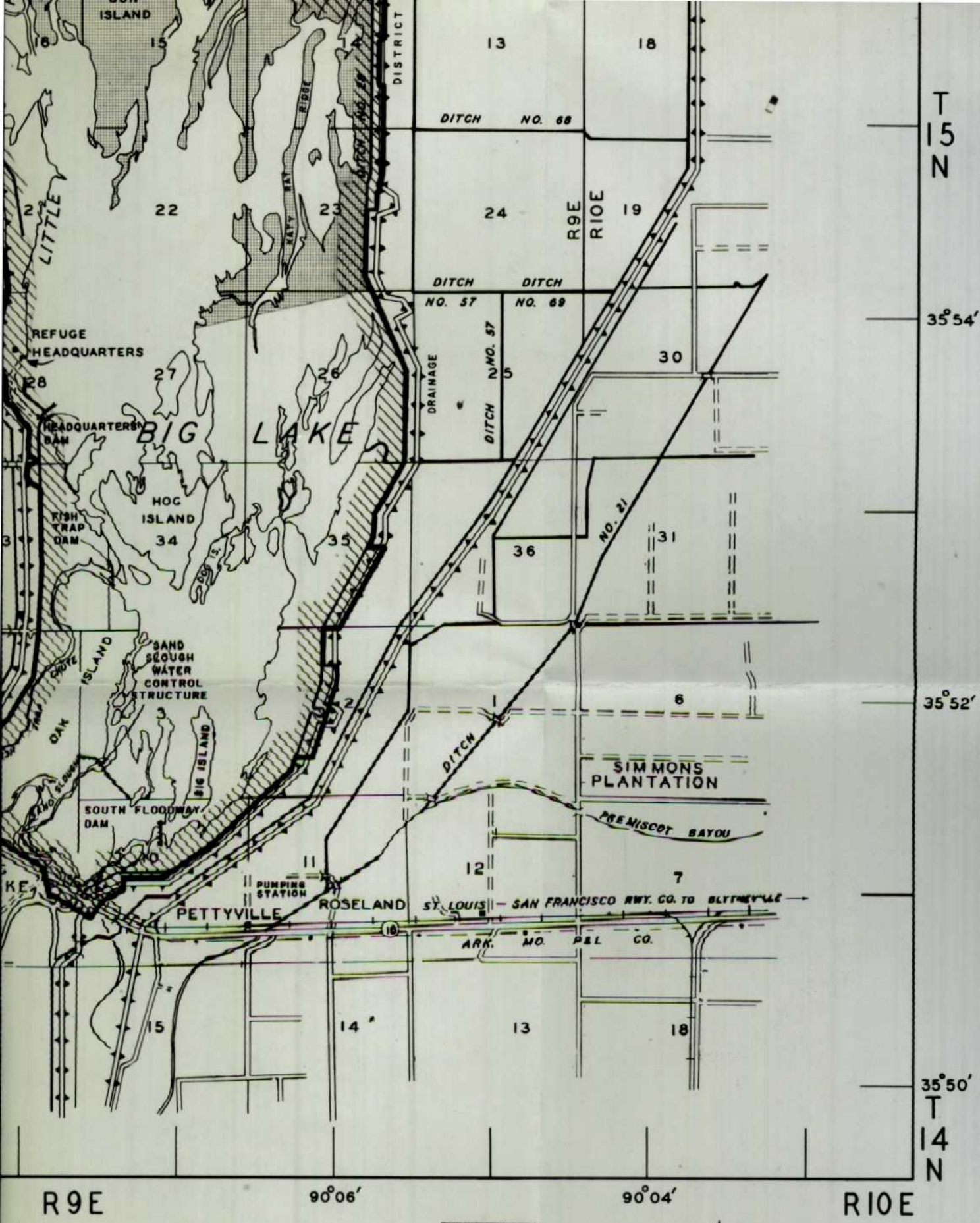
ATLANTA, GEORGIA

APRIL, 1977

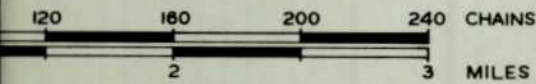
FIFTH PRI

Scale



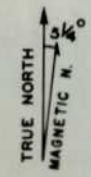


PRINCIPAL MERIDIAN



6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

TOWNSHIP
DIAGRAM



MEAN
DECLINATION
1963

Refuge Manager, Big Lake NWR

February 25, 1976

Assistant Regional Supervisor, Division of Refuges
Atlanta, Georgia

Environmental Impact Statement 76-6 (Big Lake Wilderness)

Attached is your station's file copy of the approved FES 76-6.

Curtis T. Wilson

Attachment

PGVanDyck:ws

PV
DS?

UNITED STATES GOVERNMENT

Memorandum

TO : Regional Director, Atlanta, Ga.
Attention: Bob Barber

FROM : Refuge Manager, Big Lake Refuge

SUBJECT: Comments on Wilderness Management

DATE: 1/12/76

The Big Lake Wilderness Area is relatively problemless. It lies in an isolated portion of the refuge with only one major boat run through it. The main concern would be the quality of the water coming in from Missouri and the litter and garbage that it deposits. Much of this trash however, is flushed on through during the general floods.

Boating here would not be necessary at this time or in the near future. On other areas where higher public use develops boating may be necessary.

If Bachman's warbler is found in this area then management of the area may be turned toward more favorable habitat for this endangered species.

I am relatively unacquainted with wilderness management at this time, but feel that management plans are needed. The use of these plans is further contingent upon the availability of funds and manpower.

I am not now aware of other problems, but as I become more familiar with this area I am confident that I will.

Mervin L. Nichols
Mervin L. Nichols





United States Department of the Interior

FISH AND WILDLIFE SERVICE

WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

RF

In Reply Refer To:
FWS/RF

Memorandum

To: Bureau of Outdoor Recreation
U. S. Geological Survey
Bureau of Mines
Bureau of Land Management
National Park Service

From: Acting Chief, Division of Wildlife Pefuges

Subject: Final Environmental Impact Statement for the Proposed
Big Lake Wilderness Area, Big Lake National Wildlife Refuge,
Arkansas

In accordance with the requirements of Section 102(2)(C) of the National Environmental Policy Act of 1969, the U. S. Fish and Wildlife Service has prepared the final environmental statement regarding the Proposed Big Lake Wilderness Area, Big Lake National Wildlife Refuge, Arkansas.

We are pleased to provide a copy for your records.

Attachment

~~WADDELL~~ *RF*
RUDOLPH
WILSON *W*
CARTER
VAN DYKE *W*
BARDEN *RF*
BUTTS
POWELL
CHILDS
GIBSON
Date Rec'd 2/23/76
File
Copy

W. L. K. K. K.



Regional Director, Atlanta, Georgia



United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

FEB 16 1976

In Reply Refer To:
FWS/RF

Dr. David Ward
Acting Coordinator
Environmental Quality Activities
Office of the Secretary
Department of Agriculture
Washington, D. C. 20250

Dear Dr. Ward:

In accordance with the requirements of Section 102(2)(C) of the National Environmental Policy Act of 1969, the U. S. Fish and Wildlife Service has prepared the final environmental statement regarding the Proposed Big Lake Wilderness Area, Big Lake National Wildlife Refuge, Arkansas.

We are pleased to provide a copy for your records.

Sincerely yours,

W. ELIS KLET

Acting Chief,
Division of Wildlife Refuges

Enclosure



Regional Director, Atlanta, Georgia

Identical letter sent to the following:

Department of the Air Force
Office of the Assistant Secretary
Washington, D. C. 20380

Missouri Department of Community
Affairs
P. O. Box 1157
505 Missouri Boulevard
Jefferson City, Missouri 65101

Dr. Sidney R. Galler
Deputy Assistant Secretary for
Environmental Affairs
Department of Commerce
Washington, D. C. 20230

The Wilderness Society
1901 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Mr. Hubert E. De Simone
Assistant Secretary for
Environmental & Urban System
Department of Transportation
Washington, D. C. 20590

Director for Environmental Quality
Office of Assistant Secretary for
Health and Environment
Department of Defense
Washington, D. C. 20301

Department of the Army
(Corps of Engineers)
Executive Director of Civil Works
Office of the Chief of Engineers
Washington, D. C. 20314

Arkansas Planning Commission
Room 300
Game & Fish Commission Building
Little Rock, Arkansas 72201