## HUNTING PLAN

## MORGAN BRAKE NATIONAL WILDLIFE REFUGE

Prepared:

April 1980

Recommended by:	
Project Leader	Date
Area Manager	Date
Regional Director	Date
Approved: Director	Date
pirector	. Date

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### I. .INTRODUCTION

### A. Location and General Description

Morgan Brake National Wildlife Refuge is located in west central Mississippi in the Yazoo River Easin of the Mississippi Delta, between the loessial hills and U. S. Highway 49, 21 miles south of Greenwood, Mississippi, and approximately 3 miles north of Tchula, Mississippi, in Holmes County.

The refuge occupies 1330 acres with additional land acquisitions planned.

Topography is level to gently sloping with maximum land elevations seldom exceeding 115 feet above mean sea level. The soils consist of somewhat poorly drained clays to well-drained silty soils in natural levees.

Drainage in Morgan Brake Refuge is primarily through Morgan Brake and Millstone Bayou into Tchula Lake.

The climate is humid sub-tropical with an average annual temperature of 64.8 degrees. Mean annual rainfall is 51.8 inches. Winter rains, November through April, account for 30 inches of the annual precipitation.

#### B. Habitat and Wildlife

Historically, the Mississippi Delta produced an abundance of diverse fish and wildlife resources. The clearing of bottom-land hardwood forests in this centry to produce agricultural crops has resulted in a drastic decline in these high quality resources. Morgan Brake habitat types are dominated by bottomland hardwood forest interspersed with bald cypress/tupelo sloughs and brakes (Type 7 wetlands) and shallow depressions characterized by buttonbush, water elm, swamp privet, and willow (Type 6 wetlands).

Dominant forest species are sweet gum, water cak, and willow oak occuring along the ridges; sugarberry, American elm, green ash, bitter pecan, and overcup oak on the intermediate to low flats; and bald cypress, swamp cottonwood, and swamp tupelo in the low depressions and sloughs.

The fauna is diverse with many popular and important species present. Refuge wetlands are noted for large numbers of wintering waterfowl. Mallard, wood duck, wigeon, greenwinged teal, and gadwall are the most numerous migratory waterfowl. Wood ducks are common summer nesters.

The recreational use authorized by these regulations will not interfere with the primary purposes for which these refuges were established. This determination is based upon consideration of among other things, the Service's Final Environmental Statement on the Operation of the National Wildlife Refuge System published in November, 1976. Funds are available for the administration of the recreational activities permitted by these regulations.

- § 32.12 Special regulations; migratory game bird hunting for individual wildlife refuge areas.
  - (1) Ducks and coots only may be hunted on Monday, Wednesday, and Saturday mornings on approximately 520 acres from one-half hour before sunrise until 12 noon during the regular State season(s).
  - (2) Woodcock and snipe may be hunted one-half hour before sunrise until 12 noon during the State season(s).
- § 32.22 Special regulations; upland game hunting for individual wildlife refuge areas.
  - (1) Rabbits may be hunted same as State season, but no dogs will be allowed until after January 31, 1981.
  - (2) Raccoon and opossum season will be the same as the State season except the refuge season will be closed during the State deer-dog hunting season.
  - (3) Beaver may be taken incidental to other species bags.
- § 32.32 Special regulations; big game hunting for individual wildlife refuge areas.
  - (1) Archery deer hunt: the season shall be the same as the State season.
  - (2) Primitive Weapons deer hunt: the season shall be the same as the State season.
  - (3) Gun (still hunt) deer season: the season shall be the same as the State gun still hunt.
  - (4) The use of any drug on arrows is prohibited. Bow hunters may not have arrows employing drugs or drug holding devices in their possession.

The Department of the Interior has determined that this document is not a significant rule and does not require a regulatory analysis under Executive Order 12044 and 43 CFR Part 14.

The provisions of these special regulations supplement the regulations which generally govern hunting on wildlife refuge areas and which are set forth in Title 50, Code of Federal Regulations, Part 32. The public is invited to offer suggestions and comments at any time.

→ 50 CFR Part 32

Morgan Brake National Wildlife Refuge, Mississippi

Agency: Fish and Wildlife Service, Interior.

Action: Special regulations.

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SUMMARY: The Director has determined that the opening to hunting of Morgan Brake National Wildlife Refuge is compatible with the objectives for which this area was established, will utilize a renewable natural resource, and will provide additional recreational opportunity to the public. In addition, managed big game hunts are designed to keep population levels compatible with habitat capabilities. This document establishes special regulations effective for the upcoming hunting seasons for certain migratory birds, upland game, and big game species.

DATES: Period covered - September 1, 1980 to May 30, 1981. See State regulations for waterfowl seasons.

FOR FURTHER INFORMATION CONTACT: The Area Manager or the refuge manager at the address or telephone number listed below:

Area Manager, U. S. Fish and Wildlife Service. 200 East Pascagoula Street, Suite 300, Jackson, Mississippi 39201. Telephone (601) 960-4900

Refuge Manager, Morgan Brake National Wildlife Refuge. P. O. Box 107, Yazoo City, Mississippi 39194. Telephone (601) 746-8511.

SUPPLEMENTARY INFORMATION: Sarah McClellan is the primary author of these special regulations.

Hunting is permitted on national wildlife refuges in accordance with 50 CFR Part 32, all applicable state regulations and the following special regulations:

The Refuge Recreation Act of 1962 (16 U.S.C. 460k) authorizes the Secretary of the Interior to administer such areas for public recreation as an appropriate incidental or secondary use only to the extent that it is practicable and not inconsistent with the primary objectives for which the area was established. In addition, the Refuge Recreation Act requires: (a) That any recreational use permitted will not interfere with the primary purpose for which the area was established: and (b) that funds are available for the development, operation, and maintenance of the permitted forms of recreation.

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## I: PURPOSE AND NEED FOR ACTION

Public hunting on units of the National Wildlife Refuge System is an acceptable and desirable form of wildlife-oriented public recreation which may be permitted, provided it is compatible with the objectives for which the refuge was established and is administered. Although specific refuge objectives have not yet been established for Morgan Brake Refuge, NWR System objectives and FWS intent during the acquisition period clearly indicate our primary goals to be endangered species preservation and enhancement, waterfowl protection and habitat preservation, preservation of bottomland hardwood habitats, and provision of substantial opportunities for wildlife-oriented public use. It has been demonstrated that hunting can be used as a means to: provide recreational activities, utilize renewable resources, regulate wildlife populations, teach and provide for the development of woods lore, wildlife appreciation, and sportsmanship.

The intent of the proposed action is to provide the broadest range of benefits for the using public within the scope of primary refuge objectives and to administer public use programs in a positive manner to assure the welfare of all refuge resources.

Morgan Brake National Wildlife Refuge is located in the Mississippi/Yazoo River Delta and is characterized by bottomland hardwood forest interspersed with bald cypress/tupelo sloughs and brakes (Type 7 wetlands) and shallow depressions distinguished by buttonbush, water elm, and swamp privet (Type 6 wetlands). Morgan Brake has traditionally been a popular hunting area to residents of Holmes and the surrounding counties. It is desirable to continue this activity under a sound management program to provide public hunting opportunities and to utilize a renewable resource.

## II. ALTERNATIVES INCLUDING PROPOSED ACTION

#### A. Proposal

The Fish and Wildlife Service, U. S. Department of the Interior, proposes that Morgan Brake National Wildlife Refuge be opened to waterfowl and resident game hunting. The proposal calls for refuge-wide hunting of resident game and waterfowl hunting on 40% of the refuge.

The proposal will allow regulated sport hunting within the framework set forth by the State of Mississippi through the issuance of annual regulations which establish open seasons, season lengths, daily bag and possession limits, shooting hours, time and area closures, and other species management provisions. Hunts will be further controlled by field observations and bag checks, and by designated access points and vehicle limitations. An information/check station will be employed as necessary to aid in the collection of biological data. Time and space scheduling and/or zoning may be employed if circumstances justify such action to buffer conflicting refuge uses. State bag and possession limits will apply for all species.

Small game hunting is proposed for the following species: gray and fox squirrel, raccoon, cottontail and swamp rabbit, opossum, and beaver. Based on quantitative and qualitative measures of habitats present on the refuge, and on population parameters of proposed species, annual hunting seasons can be legitimately and properly employed to consume that segment of the population referred to as the "annual surplus". Other small animal species may be included in the small game category at a later date if key habitat and/or population elements are exhibited and if substantial recreational opportunity can be provided.

The Morgan Brake deer population is of sufficient size to offer substantial hunter opportunity, and annual harvest will be necessary to maintain the herd and its supporting habitat in a desirable and healthy status. State recommendations on season lengths and harvest quotas will be used as a basis for the establishment of annual deer hunting regulations. A determination will be made on the status of the eastern wild turkey in the Morgan Brake area with management recommendations forthcoming.

The planned action also proposes to open certain refuge lands to the hunting of migratory waterfowl. Sixty percent of the refuge will remain closed to waterfowl hunting. The closed area will provide ample sanctuary for ducks to rest and feed. Hunting will be allowed within the State framework in the remaining portion during the morning hours only. Steel shot will be mandatory for waterfowl hunting. Other migratory birds, particularly dove, woodcock, snipe, and rails, may be included in future hunts if sufficient recreational opportunity and demand exist.

#### B. No Action Alternative

Under this alternative, Morgan Brake National Wildlife Refuge would not be opened to public hunting. Substantial public and State opposition to this alternative could be expected.

Annual crops of renewable wildlife resources would be lost rather than utilized by the public. Recognizing the prolific

reproductive ability of white-tailed deer, habitat deterioration on the refuge and eventually a die-off would be anticipated.

## C. Reduction in Size of Area Open to Hunting and Length of Seasons

Under this alternative, less than 40% of the refuge would be opened to waterfowl hunting, and only a portion of the area would be opened to hunting of resident species. Public and State opposition would occur, but to a lesser degree.

#### D. Increase in Length of Seasons

This alternative would increase the number of days open to waterfowl and resident game hunting over the length of State seasons.

Since ample season lengths are provided by the State framework, it is doubtful that the public would support extended seasons. The Mississippi Department of Wildlife Conservation would discourage this alternative.

Since over-harvest of certain species would be possible, this alternative is not consistent with the purposes for which the refuge was established.

#### III. AFFECTED ENVIRONMENT

#### A. Location and General Description

Morgan Brake National Wildlife Refuge is located in the Yazoo River Basin of the Mississippi Delta between the loessial hills of west central Mississippi and U. S. Highway 49. The refuge is 21 miles south of Greenwood, Mississippi, and approximately three miles north of Tchula, Mississippi, in Holmes County. The refuge occupies 1330 acres with additional land acquisitions planned.

Topography is level to gently sloping with maximum land elevations seldom exceeding 115 feet above mean sea level. The soils range from somewhat poorly drained clays to well drained silty soils found in natural levees. Drainage in Morgan Brake Refuge is primarily through Morgan Brake and Millstone Bayou into Tchula Lake.

The climate is humid sub-tropical with an average annual temperature of 64.8 degrees. Mean annual rainfall is 51.8 inches. Winter rains, November through April, account for 30 inches of the annual precipitation.

#### B. Habitat and Wildlife

Historically, the Mississippi Delta area produced an abundance of diverse fish and wildlife resources. The clearing of bottomland hardwood forests in this century to produce agricultural crops has resulted in a drastic decline in these high quality resources. As a result, the remaining delta forests have become critical to native wildlife. Morgan Brake habitat types are dominated by bottomland hardwood forest interspersed with bald cypress/tupelo sloughs and brakes (Type 7 wetlands) and shallow depressions characterized by buttonbush, water elm, swamp privet, and willow (Type 6 wetlands). Dominant forest species on the ridges are sweet gum, water oak, and willow oak. Sugarberry, American elm, green ash, bitter pecan, and overcup oak occupy the intermediate and low flats. Bald cypress, swamp cottonwood, and swamp tupelo are the dominant species in low depressions and sloughs.

The fauna is diverse with many popular and important species present. Refuge wetlands are noted for large numbers of wintering waterfowl. Hallard, wood duck, wigeon, green-winged teal and gadwall are the most numerous migratory waterfowl. Wood ducks are common summer nesters.

The principal resident game species are fox and gray squirrel, white-tailed deer, eastern wild turkey, raccoon, and swamp and cottontail rabbit. Furbearing species of the area include beaver, nutria, raccoon, muskrat, mink, otter, weasel, spotted and striped skunk, and bobcat. Non-game wildlife is also abundant on the refuge with the diversity and interspersion of habitat types creating an edge effect beneficial to wildlife. There is a small population of American allicators on the refuge, and there is considerable habitat acreage available for this endangered species. Although neither the southern bald eagle nor the Peregrine falcon have not been observed in the Morgan Brake area in recent years, both are winter migrants of the Yazoo Basin. Sloughs, streams, beaver impoundments, and other refuge wetlands provide only a limited amount of fish habitat except during high water periods when the concentration of fish may be high in suitable areas. Species may include any of the fishes common to the Mississippi and Yazoo rivers.

#### C. Existing Human Uses

Before acquisition, primary human uses of the refuge were timber management, hunting, fishing, and trapping. Wildlife use in recent years has been dictated by leased and privately owned hunting camps whose primary interest has been deer and waterfowl hunting.

## D. <u>Cultural Resources</u>

A cultural resources survey has not yet been conducted on Morgan Brake Refuge. There are no sites on the refuge or within the proposed acquisition area that are listed in the National Register of Historic Places or designated as a National Natural Landmark.

#### E. Refuge Development

As a recent addition to the National Wildlife Refuge System, no development has been carried out on Morgan Brake. An internal road system exists on the refuge that consists of improved dirt roads which have been closed to 4-wheel drive vehicles for several years. Since these roads have been closed during wet weather, they are in excellent shape. Only an abandoned house still exists in the area.

#### IV. ENVIRONMENTAL CONSEQUENCES

This section is the scientific and analytic basis for the selection of the preferred alternative.

#### A. Environmental Consequences of the Preferred Alternative

#### 1. Impact on Wildlife

The opening of up to 40 percent of the refuge to waterfowl hunting may result in less use of the hunted area by waterfowl and other water birds than if a no hunting policy were adopted. Some crippling loss will be evident. Individual animals of hunted species will be removed as a result of the hunting program and may be considered irretrievable commitments of natural resources; however, these represent a segment of the annual surplus that would be lost to the population without the proposed action. No significant direct or indirect adverse impacts to wildlife are expected as a result of the preferred alternative.

Long-term impacts of the proposed action are expected to be favorable and in the best interest of the public and of Morgan Brake wildlife resources. Substantial long-term benefits of the proposed action will be increased recreational opportunities available to the public and sound,

effective management of refuge wildlife populations.

Since the proposal involves a renewable resource, values lost or degraded in return for the anticipated benefits of long-term productivity will be minor. Hunting on Morgan Brake NWR will enable the Service to carry out a sound, effective wildlife management program and at the same time, increase the range of benefits made available to the public within the scope of objectives for which the refuge was established. That portion of specified game populations referred to as the "annual surplus" will be made available to the using public through a regulated, annual hunting program designed to both utilize and maintain Morgan Brake's wildlife resources for the benefit of humans. Direct impacts of refuge hunts on subject species will be monitored through the collection of harvest data.

Peak waterfowl concentrations on Morgan Brake are expected to range from 8,000 to 10,000 birds. Between 500,000 and 700,000 use days are expected. Total annual use days by waterfowl is expected to increase in response to projected management programs. An estimated 400 to 600 ducks would be harvested annually during refuge hunts. Mallards should comprise approximately 70% of the total harvest. A 20% crippling rate would result in the loss of 120 additional ducks. Waterfowl hunting will create some disturbance to resting and feeding ducks on the areas open to hunting. However, waterfowl hunting would be restricted to 40% or less of the total management unit, and then allowed during the morning hours only within the state-wide season. Steel shot will be required. The remaining larger portion of the refuge harbors a number of attractive resting and feeding sites.

Deer density at the present time is estimated at one deer per 15-18 acres, or a fall population of 80 to 85 deer on refuge lands. The present population level and projected hunter use days indicate a harvest of from 15 to 20 deer. Crippling loss could further increase the kill by another 10-15 percent. The most apparent impact on the Morgan Brake deer herd will be that of maintaining the herd at a manageable level within the ability of the range to support deer. Said differently, the capability of effectively managing the herd will be possible by the proposed action.

It is estimated that the refuge woodlands support an average of one squirrel per acre or  $^{\pm}1300$ . Annual harvest should range from 150 to 250 during average to high density years. Delta woodlands and field borders are conducive to

high rabbit populations. A rabbit harvest of about 100 animals is expected annually. Raccoon densities are considered high throughout remaining woodlands in the Yazoo Basin. Morgan Brake has an estimated fall population of about 130 raccoons of which 25 or 30 will probably be harvested annually. Opossum and beaver harvest should be negligible.

#### Impact on Endangered Species

Three species, the American alligator, the southern bald eagle, and the Feregrine falcon, could be adversely affected by the proposal. Should any wintering eagles or falcons be in the Morgan Brake vicinity during a waterfowl hunt period, some disturbance could occur. Disturbance should be minimal due to the spatial and temporal zoning of the hunt and to the relatively closed canopy characteristic of Morgan Brake wetlands. The possibility of a shooting incident, however, cannot be ruled out.

Spencer (1976) demonstrated that crippled waterfowl provide an important food source for migrating and wintering bald eagles. The inevitable crippled waterfowl resulting from the refuge hunt will provide a highly vulnerable food source for migrating or wintering eagles.

The majority of the hunting season will take place after alligators become inactive. Therefore, the probability of a disturbance or shooting incident would be most likely during the period from October through early November. Raccoons are known to be important alligator nest predators. To the extent that refuge hunting exerts control on raccoon numbers, it would enhance the potential for alligator nesting success.

No significant adverse impacts to endangered species are expected as a result of the proposed action.

#### Impact on Vegetation

A minor amount of vegetative cover will be damaged or trampled during refuge hunts. Damage should be negligible and restricted to small trees, shrubs, and ground level vegetation. The use of off-road vehicles that often excessively destroy vegetation will be prohibited.

#### 4. Impact on Public Use

Sport fishing and hunting activities will overlap to some degree, particularly during the fall period. No conflicts of any consequence are expected, however, because of the nature of habitats present and the time span between peak use periods for these activities. Non-consumptive public use of the refuge is presently low due to a general lack of interest in the area for activities such as nature, study and photography. Only a moderate increase in these activities is expected, and no serious conflicts between the refuge hunt and non-consumptive users are expected.

#### 5. Impact on the Human Environment

The consumptive use of wildlife on Morgan Brake National Wildlife Refuge will be offensive to that segment of our society who question the morality of taking the life of a fellow creature. Hunting by others is considered a beneficial recreational pursuit. It has been demonstrated many times over that the consumptive use of wildlife, when properly managed, has no adverse effect on the long-term well-being of fish or wildlife populations or their habitats. In many cases, the annual removal of surplus individual of wild populations is necessary to avoid the serious impacts of abused habitat, malnutrition, and exposure to disease.

A majority of those expected to hunt on the refuge live within a 50 mile radius. Expenditures made in the Lexington and Greenwood areas for hunting equipment and supplies, food, and gasoline should represent a boost to the local economy.

Littering will increase on the refuge as a result of the hunting activities.

#### B. Environmental Consequences of the No Action Alternative

Under the no action alternative renewable wildlife resources could not be utilized, and many recreational opportunities would be:lost to the public. Opportunities for wildlife and environmental education and appreciation would be reduced as well. The no action alternative would result in a substantial loss of wildlife enjoyment to the lower Yazoo Basin.

It is probable that public attitudes in Mississippi would become hostile toward the Fish and Wildlife Service if Morgan Brake was closed to hunting. Other more significant Service programs could be adversely affected by such action. The effective management of several important species present on the refuge, such as white-tailed deer and beaver, cannot be provided without an ongoing harvest program. By not harvesting surplus animals of these species on an annual basis, the buildup of excessive numbers and ensuing environmental and economic losses can be expected.

Greater protection to endangered species using the refuge may be afforded without hunting; however, an expected increase in game violations and resource abuse would more than likely counteract any additional protection.

# C. Environmental Consequences of the Reduction in Size of Area Open to Hunting and Length of Seasons Alternative

This action would concentrate hunting pressure on smaller open areas and would reduce recreational opportunities on the refuge without biological basis. Hunt quality would also be reduced.

Less than optimum deer management objectives would be met.

Some additional protection to endangered species would be afforded.

# D. Environmental Consequences of the Increase in Length of Seasons Alternative

Refuge-wide hunting is proposed for all game categories except waterfowl, which is restricted to 40 percent of the refuge under current guidelines. Increasing the number of days open to waterfowl hunting, although increasing available hunter days, would result in reduced waterfowl use of the hunting area and consequently reduce hunter success and the quality of the hunting experience. This action would also increase the probability of disturbing wintering bald eagles.

Season lengths for resident species will be established within the State framework to offer the greatest number of benefits to the using public within the scope of refuge objectives. Ample season lengths will be provided by the preferred alternative, and it is doubtful that support could be gathered for seasons extending beyond the State framework.

## V. CONSULTATION AND COORDINATION WITH OTHERS

Consultation has been received from the Fish and Wildlife Service Area Office in Jackson, Mississippi, and the Mississippi Department of Wildlife Conservation.

## References and Literature Cited

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  Mississippi. U. S. Fish and Wildlife Service, Fish and Wildlife
  Coordination Act Report.
- Guynn, David C. Jr., Harry A. Jacobson and Edward J. Hackett. 1978.

  Mississippi Mail Survey of Game Harvest for 1976-77. Department of Wildlife and Fisheries, Mississippi State University.
- Mississippi Game and Fish Commission, 1978-79. Mississippi Hunting Digest.
- Mississippi Game and Fish Commission, 1978. Federal Aid Project W-56, Mississippi Statewide Wildlife Habitat and Populations Inventory.
- Spencer, D. A., 1976. Wintering Bald Eagle. National Agricultural Chemical Association, Washington D. C.

#### Summary

## Description of Proposed Action

It is proposed that Morgan Brake NWR be opened to waterfowl and resident game hunting. Seasons will be within the framework set forth by the State of Mississippi and will serve to provide a wide range of benefits to the public.

## Impacts of the Proposed Action

Substantial long-term benefits of the proposed action will be increased recreational opportunities available to the public and effective management of prolific game populations present on the refuge. The possibility of adversely affecting protected or endangered species will be increased by the proposal, and some crippling loss of waterfowl and deer will be evident.

#### Alternatives Considered

- A. Preferred Alternative
- B. No Action Alternative
- C. Reduction in Size of Area Open and in Length of Seasons
- D. Increase in Length of Seasons

Compatability Statement
on
Opening Morgan Brake National Wildlife Refuge
to
Waterfowl and Resident Game Hunting

The Refuge Recreation Act of 1962 (16 U.S.C. 460k) authorizes the Secretary of the Interior to administer such areas for public recreation as an appropriate incidental or secondary use only to the extent that it is practicable and not inconsistent with the primary objectives for which the area was established. In addition, the Refuge Recreation Act requires (1) that any recreational use permitted will not interfere with the primary purpose for which the area was established; and (2) that funds are available for the development, operation, and maintenance of the permitted forms of recreation.

The recreational use authorized by these regulations will not interfere with the primary purposes for which Morgan Brake National Wildlife Refuge was established. This determination is based upon consideration of, among other things, the Service's Final Environmental Statement on the Operation of the National Wildlife Refuge System published in November, 1976, and the Morgan Brake Hunt Plan, Environmental Assessment, and Section 7 Evaluation. Funds are available for the administration of recreational activities permitted by these regulations.