

COMPATIBILITY DETERMINATION

Use: Cooperative Farming

Refuge Name: St. Catherine Creek National Wildlife Refuge

County: Adams, Mississippi

Date Established: January 1990

Establishing and Acquisition Authorities:

Migratory Bird Conservation Act [16 United States Code (USC) §715(d)]

Refuge Purposes:

"provide wintering habitat for wood ducks and to meet the habitat goals presented in the North American Waterfowl Management Plan", "preserve a dynamic alluvial floodplain ecosystem, provide needed waterfowl winter habitat in the Lower Mississippi River Valley (LMRV), and assure available water during December for migrating waterfowl", "preserve wintering habitat for mallard, pintail, blue-winged teal, and wood duck", and "provide wintering and production habitat for migratory and resident waterfowl".

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" [National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. §668dd-668ee)].

Description of Use:

(a) *What is the use?*

Cooperative farming is used by the US Fish and Wildlife Service on national wildlife refuges as a habitat management tool to provide high-energy food resources for millions of wintering ducks, geese, swans and other migratory bird species. Within the Lower Mississippi Valley, these food resources are critical to each refuge's ability to successfully meet the goals and objectives set by the Lower Mississippi Valley Joint Venture (LMVJV 2016) as stepped down from the North American Waterfowl Management Plan (NAWMP 2012) and the respective Comprehensive Conservation Plans (CCPs) developed for each refuge in this landscape.

The Refuge uses a combination of moist soil management, unmanaged forested wetlands, and farming to provide suitable wintering waterfowl habitat. Studies have documented that wintering waterfowl in the Mississippi Alluvial Valley (MAV) prefer regions composed of 50% cropland, 20% moist soil wetlands, 20% forested wetlands, and 10% open water habitats (Strickland *et. al* 2009). Thousands of acres of naturally occurring moist soil and forested wetlands, as well as open water, are present on St. Catherine Creek NWR. The addition of farming on the refuge fills the cropland component of preferred waterfowl habitat documented by Strickland et al. (2009).

There are three primary management options to meet step-down habitat objectives under the NAWMP for wintering waterfowl on the Refuge: 1) moist soil management, 2) force account farming (refuge staff farm fields and retain all crops), and 3) cooperative farming (i.e. private

farmer farms the fields and leaves a share of the crops unharvested).

Moist soil management is the manipulation of naturally occurring wetland plants to produce preferred waterfowl forage (Strader and Stinson 2005). Under moist soil management, staff uses a combination of 1) disking, mowing, and burning to set back plant succession, 2) application of herbicides or mechanical disturbance to control undesirable plants, and 3) prescribed flooding of natural wetlands or wetland impoundments to make forage available to waterfowl. Several naturally occurring moist soil wetland plants are already established on St. Catherine Creek NWR and are well suited to this type of management.

Force account farming is farming conducted by the Refuge staff which allows 100% of the crop to be retained by the refuge for waterfowl use. Extensive staff time and farming equipment (e.g., farm tractors, seed drill(s), boom sprayers, and other farming implements) are used by the Service to force account farm. Knowledgeable staff are needed ensuring desired crop productivity is obtained to meet habitat objectives and energetic requirements of wintering waterfowl.

Cooperative farming is a mutually beneficial economic use whereby a farmer produces crops on a refuge and, in lieu of a land rental payment, leaves an unharvested share of the planted crop for waterfowl and other wildlife. On St. Catherine Creek NWR, the farmer is responsible for all equipment, fuel, seed, fertilizer, approved pesticides, and labor necessary to produce the crop. The Refuge is responsible for identifying the type(s) of crop, location(s) to be planted, list of approved pesticides, and identifying the location of the Refuge's crop share.

Of the three management options available to meet wintering waterfowl objectives, moist soil habitat is the most natural and complex system. Force account farming is also valuable; however, this requires a large initial investment by the Service for equipment and high annual expenses such as equipment repair and replacement, seed, fertilizer, lime, diesel fuel, and pesticide costs. The refuge has begun to accumulate the equipment and knowledge necessary to conduct this activity and has seen both success and failure in the past. Refuge managers must also decide if staff time dedicated to this management option can be conducted in a way that does not limit other management needs such as law enforcement, maintenance, forest management, and management of priority public uses. Cooperative farming is considered to be a very cost effective option for the Refuge to meet wintering waterfowl habitat objectives.

(b) Where would the use be conducted?

Farming on the Refuge would occur on up to 1,200 acres of agriculture fields located in the Cloverdale Unit (north end of Refuge) and up to 400 acres in the Sibley impoundments (south end of Refuge) (Figure 1). The Refuge Manager may decide to farm less than the total acreage in any given year due to flooding, weather or soil conditions, economic considerations, or refuge management needs. With approximately 1,500 acres of established fields in Cloverdale and nearly 1,000 acres in the Sibley Impoundments, farmed areas are rotated to more consistently provide the early succession habitat desirable to the targeted species.

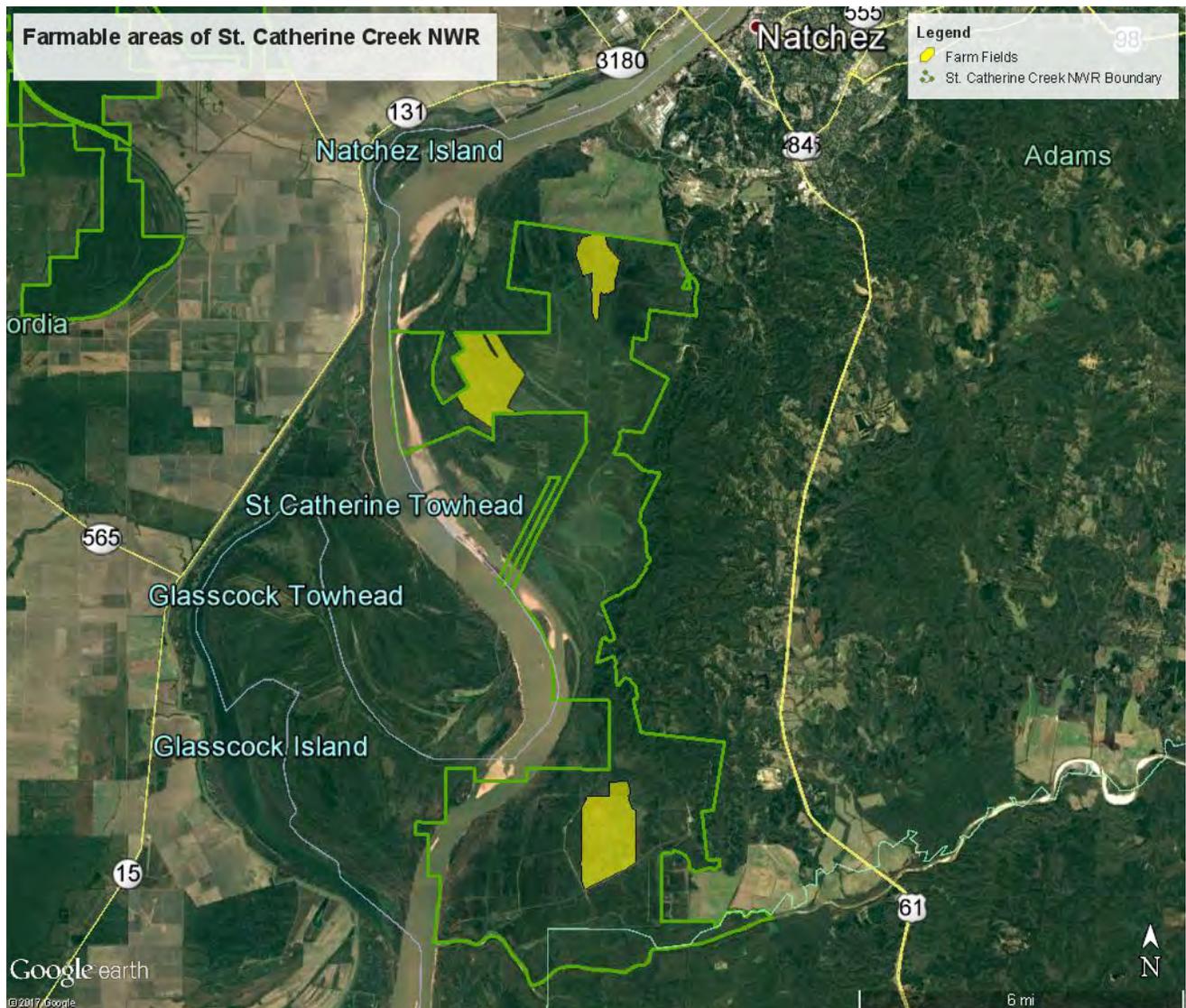


Figure 1

(c) When would this use be conducted?

Cooperative farming activities generally occur between March 15 and November 15.

(d) How would this use be conducted?

All cooperative farming operations are conducted under the terms and conditions of a cooperative farming agreement with the individual farmer and special use permit issued by the Refuge Manager. The terms of the permit insure that all current Service and Refuge guidelines and restrictions are known and accepted by both parties prior to approval of the agreement. Permittee selection and associated determination of cost or shares will follow relevant guidance (5 RM 17 and 620 FW 2) and Region 4 specific guidance for farming.

The cooperative farming program is a component of the refuge's annual habitat management program and activities conducted by the cooperator support the accomplishment of Refuge habitat management objectives. Best Management Practices (BMPs) are followed in the implementation of the cooperative farming program. Forested or grassland buffers are established between all farm fields and any adjacent wetlands and streams. Pesticide use proposals are prepared for application of all pesticides.

One to five-year farming agreements are established with the cooperator prior to the planting season. An agreement outlines the crop(s), location, and amount of acreage to be planted during the coming year and is signed by the cooperator and the Refuge Manager or designee. The cooperator is responsible for all equipment, fuel, seed, fertilizer, chemicals, and labor necessary to produce the crop. Shares are acreage-based with a 75-80% cooperator's share and a 20-25% refuge share. Cooperative farmers are required to perform soil tests to determine nutrient needs in accordance with the local Agriculture Extension Service.

The Service only considers the use of pesticides approved by the Environmental Protection Agency (EPA) to control crop pests, in conjunction with other control measures as needed, to protect crops and enhance production to meet economic thresholds for cooperative farmers. In 2005, the Service prepared the Draft St. Catherine Creek NWR CCP and associated Environmental Assessment (EA) to analyze the effects of the farming program, including the use of pesticides (USFWS 2005). The Service also conducts annual analysis of pesticide usage through the Service's pesticide use proposals (PUPs) process (7 RM 14) for application of all pesticides and approves only those that are shown to not impact fish and wildlife resources. Intra-Service Section 7 Endangered Species Act (ESA) consultation is also completed on the application of all pesticides in coordination with preparing and submitting the PUPs. Application of pesticides must follow the Department of Interior's Pesticide Use Policy (517 DM 1) and the Services Integrated Pest Management policy (569 FW 1) and must be approved by both the EPA and through the US Fish and Wildlife Service's PUP process. Best Management Practices are also utilized in addition to restrictions imposed by the EPA. Attached to each agreement will be a list of pesticides and associated BMPs approved for use through the PUP process. In almost all cases, Service pesticide use restrictions are more restrictive than the EPA-approved pesticide label restrictions.

Modifications to the original farming agreement may occur throughout the farming season, by written addendums to the agreement that have been developed and signed by both the cooperator and Refuge Manager or designee. The Refuge Manager or designee will administer the cooperative farming program and be required to prepare farming agreements meet with farmers, verify crop plantings, and negotiate any needed addendums during the year.

(e) Why is this use being proposed?

The MAV is a continentally important region for migrating and wintering waterfowl in North America (Reinecke et al. 1989). The total wintering waterfowl population objective in the MAV is 4.5 million ducks and geese (Reinecke and Loesch 1996; LMVJV 2016), which includes mallard, northern pintail, American black duck, gadwall, American wigeon, green-winged teal, northern shoveler, wood duck, and geese. The initial population goals were adjusted for 15% winter mortality (Reinecke and Loesch 1996) and to account for early migrating ducks that winter in Mexico (LMVJV 2007). Waterfowl energy needs are modeled for an overwintering period of 110 days, representing early November to late February (Reinecke and Loesch 1996).

The primary purpose for farming on national wildlife refuges is to ensure that waterfowl can meet their foraging needs, which enhances their body condition and supports reproductive output. Female ducks that are in good physical condition when leaving the wintering grounds nest earlier and have larger clutch sizes than those in poor condition (Ringelman 1990, Dzus and Clark 1998). Early nests and larger clutch sizes produce a greater number of fledgling ducks than late nests and smaller clutches (Krapu 1981, Heitmeyer 1988, Strickland *et al.* 2009). Thus, availability of high-quality foraging habitat on the wintering grounds, especially in disturbance-

free areas (sanctuary), is positively related to the reproductive output of waterfowl during breeding season. Waterfowl habitat in the Southeastern United States is of paramount importance since 50% of the continental waterfowl population winter in this region annually (unpubl. data, M. Koenff, USFWS).

St. Catherine Creek NWR's CCP Goal 1 Objective 1 is to; "Annually provide a complex of wintering waterfowl habitats (i.e. croplands, moist soil, greentree reservoirs, and permanent water) that includes a minimum of 900 acres of moist soil habitat to meet the step-down objectives of the NAWMP, LMRVJV, and other Mississippi Flyway waterfowl objectives." While moist soil is the only habitat with a defined target in this objective, strategies 1.2, 1.3, 1.12 and 1.14 highlight the value of farming (force account and/or cooperative) as one technique to maintain these early successional habitats for wintering waterfowl. The Refuge CCP specifically states that the refuge should maintain 1,200 acres of cooperative farming in the Cloverdale Unit (Goal 1.1.14) and that 200-400 acres of the Sibley Unit could be farmed if the need and opportunity were recognized (Goal 1.1.12).

The use of cooperative farming on the Refuge was previously analyzed in the Environmental Assessment for the Refuge's CCP (USFWS 2005); the Finding of No Significant Impact (FONSI) for the CCP's Environmental Assessment was signed in July 2006 (USFWS 2006). Cooperative farming was found to be appropriate and compatible on St. Catherine Creek NWR. Environmental conditions and farming strategies have not changed substantially since those analyses. Compatibility policy (603 FW 2) requires that the Service reevaluate these types of uses at least every 10 years; the previous compatibility determination for cooperative farming was signed in 2006 in conjunction with the final CCP, EA, and FONSI (USFWS 2006). This compatibility determination is intended to renew and replace the 2006 compatibility determination for cooperative farming.

Availability of Resources:

The staff time needed for the development and administration of the cooperative farming program is already committed and available. Most of the needed work to prepare for this use would be done as part of routine habitat management duties.

Resources involved in the administration and management of the use - Refuge staff is responsible for drafting the Cooperative Farming Agreement and necessary Pesticide Use Proposals. Administration of the cooperative farming program consists of approximately 20 staff days.

Special equipment, facilities, or improvements necessary to support the use - None

Maintenance costs - Maintenance costs include personnel and equipment for maintaining roads for farm field access.

Monitoring costs - Existing Refuge staff monitors the farming program to ensure compatibility and compliance with the Farming Agreement.

Offsetting revenues - None

Anticipated Impacts of the Use:

The 2005 Environmental Assessment for the CCP (USFWS 2005) analyzed the impacts of the Proposed Action, including cooperative farming. The 2006 FONSI for the CCP's Environmental Assessment found that no significant impacts were expected to result from implementation of

the Proposed Action, which included cooperative farming activities. Further, the Intra-Service Section 7s for the CCP, and the Section 7s for the annual Pesticide Use Proposals all support the CCP's FONSI.

In terms of the impacts related specifically to habitat objectives of the Refuge, we expect no impact to the diversity of fish, wildlife or plants occurring on the Refuge. The relatively small impact area (approximately 5% of the Refuge) suggests that no plant or species of fish and wildlife will be negatively impacted or extirpated from the refuge.

Short-term impacts - Soil disturbance is likely to occur when the areas are disked during the spring planting season, but these impacts can be lessened by the implementation of no-till and conservation tillage farming methods. Buffer strips adjacent to waterways and sensitive areas help trap sediments and hold agricultural run-off.

Pesticides will likely be used, but only if they are approved through the PUPS process prior to application. The minimum effective volume will be applied and Best Management Practices will be followed.

Long-term impacts - Both current and proposed management recognize the benefits for providing supplemental forage for migratory waterfowl and waterbirds within the Mississippi Flyway. Refuge farming practices (both current and proposed) are designed for the predominate benefit of waterfowl. However, many other species would benefit directly or indirectly from Refuge crops. Croplands on the Refuge provide an accessible, high-energy food source during the wintering period of migratory waterfowl. Most waterfowl are opportunistic feeders, and some species such as mallard, northern pintail, and teal have learned to capitalize on the abundant foods produced by agriculture (Bellrose 1976). During the last century, migration routes and wintering areas have changed in response to availability of these foods (Fredrickson and Drobney 1979). Some species have developed such strong migratory traditions that many populations are now dependent on agricultural foods for their migration or winter survival (Ringelman 1990). However, during breeding and molting periods, waterfowl require a balanced diet with high protein content. Agricultural foods, most of which are neither nutritionally balanced nor high in protein, are seldom used during these periods. During fall, winter, and early spring, when vegetative foods make up a large part of their diet, agricultural foods are preferred forage except in arctic and subarctic environments (Sugden 1971).

Cooperative farmers are allowed to use Environmental Protection Agency (EPA) approved pesticides by way of a closely monitored Service-wide Pesticide Use Proposal System. These pesticides are reviewed and approved by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136) (FIFRA). EPA conducts risks assessments to ensure that approved pesticides will not generally cause unreasonable adverse effects on the environment. In addition to EPA's review of each pesticide, pesticides proposed for use on refuge lands go through an extensive Service review process in order to conduct a toxicity profile prior to their use. This review process provides the refuge with best management practices (BMP's) that assist the refuge with the use of each pesticide and reduces potential impacts to non-target pest species. As part of the PUPS process, Intra-Service Section 7 consultation is conducted, for each pesticide, which evaluates any possible impacts to threatened and/or endangered species that are near and/or adjacent to the spray area. The Service is typically more restrictive than what is called for on the label particularly when it comes to buffers. Each chemical is carefully evaluated and ultimately approved by the Regional IPM Coordinator through the PUPS process.

Public Review and Comment:

This compatibility determination was made available for public comment for 14 days from January 12 to January 25, 2018. Availability was announced in the *Natchez Democrat* and posted on the Refuge's website. One comment was received regarding the concern with the unknown negative consequences of pesticide use. All pesticides are reviewed and approved by the U.S. Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136) (FIFRA). EPA conducts risks assessments to ensure that approved pesticides will not generally cause unreasonable adverse effects on the environment. In addition to EPA's review of each pesticide, pesticides proposed for use on refuge lands go through an extensive Service review process in order to conduct a toxicity profile prior to their use.

Determination:

Use is Not Compatible

Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

The cooperative farming program is regulated through one to five-year cooperative farming agreements that specify the fields, crops to be grown, acceptable farming practices, and approved pesticides and use procedures. Special conditions contained in each cooperative farming agreement include the listed items.

- The program will adhere to general conditions for cooperative farming programs as listed in 620 FW 2 and according to the Cooperative Farming Agreement.
- All operations on the refuge cropland are to be carried out in accordance with the best management practices (BMPs) and soil conservation practices
- Fifty foot (50') vegetative buffer strips are maintained around all fields and water bodies
- Cooperating farmers will be subject to Service policy and regulations regarding use of chemicals. Herbicide and pesticide use is restricted by type and to the minimum necessary amount applied.
- The use of genetically modified crops and neonicotinoid treated seeds are prohibited on Service lands.
- Special conditions of special use permits will address unique local conditions as applicable.

Special conditions of farming agreements are as follows:

1. The Refuge Manager maintains the ultimate authority to make final decisions regarding all matters pertaining to this Cooperative Farming Agreement for as long as it is in effect. The Refuge Manager may designate a subordinate employee to implement this cooperative agreement but retains final decision making authority.
2. Either the Refuge Manager or the Cooperative Farmer may end this Cooperative Farming Agreement with 45 days notice. This notice must be at least 45 days prior to the beginning of the planting season. The Cooperator will be permitted to harvest any of his/her shares if they planted prior to the notice. The Cooperator agrees to provide all shares and services owed to the refuge, even if this requires planting and cultivating of additional crops after the 45 day notice by either party has ended.
3. The farmer will provide all inputs needed to plant and properly grow the designated crops. Currently, St. Catherine Creek NWR's share of crops is 20%. In the case of multi-year contracts, shares could increase to as high as 25% of all crops.
4. Farmers are required to get the permission of the Refuge Manager to change any crops specified in the originally signed cooperative agreement each year. The Refuge Manager has at least the following three options when the farmer does not get refuge shares planted by the last date of the approved planting period:
 - a. The Refuge Manager can allow the farmer on St. Catherine Creek NWR to plant beyond the last approved date. However, the farmer will be given another deadline for planting. If this revised deadline is not met, circumstances for the failure to meet the deadlines will be considered and another option will be chosen by the Refuge Manager.
 - b. If, in the judgement of the Refuge Manager, the farmer on St. Catherine Creek NWR could not plant the refuge's shares due to circumstances beyond his control, such as wet conditions or flooding due to weather, the Refuge Manager may allow the farmer to plant another crop. Due to the difference in the production cost between crops, an alternative share ratio may be implemented, i.e., 20 acres of millet will be planted to substitute for 10 acres of rice.
 - c. If in the judgement of the Refuge Manager the farmer on St. Catherine Creek NWR did not make an adequate effort to plant the refuge's shares by the last approved date, refuge shares will be taken elsewhere on any refuge farm the Cooperator is working or

approved alternative crops may be planted . A combination of the two options may also occur depending on the amount of farmland available for planting crops.

It should be noted that under all of the above scenarios, the Refuge Manager, at his/her discretion, may choose not to permit the planting of alternative crops and take the acreage elsewhere on any refuge farm the Cooperator is working.

5. The refuge will determine if the farmer has provided all the acreage of refuge shares by the end of the season. If not, any remaining shares will be added to those owed to the refuge the following year. Likewise, if the farmer plants a small amount of acreage over that required it will be subtracted from shares owed the refuge in the following year.
6. All fields will have adequate lime and other amendments applied according to the addendum describing this below.
7. Refuge crop shares must be located in the portion of the field designated on the associated map in the annual work plan or its addendum when refuge shares will remain in only a portion of the field. If for some reason the map is missing, the farmer must contact the refuge to get one.
8. The Cooperative Farmer will provide all requested information by the due date. This will include, but is not limited to, annual pesticide use, fields where soil tests were taken, those fields where lime was applied and the amount, and yields for each crop harvested during the year.
9. Farmers must adhere to verbal or written requirements to conserve endangered, threatened, rare, and species of special concern to the refuge manager, and other refuge plants, fish and wildlife.

Additional Special Conditions

- a. No changes will be made to this Cooperative Farming Agreement without Refuge Manager approval. All changes will require a written addendum, which will be signed and dated by the cooperative farmer and Refuge Manager. A final addendum is required after the final situation for crops has been determined.
- b. Refuge shares will be left in the field as directed or harvested and delivered as directed.
- c. Minimum fertilizer rates and other amendments as outlined earlier in these attachments will be used.
- d. Completed Crop Yield Forms for the current farm season will be submitted by the refuge's requested deadline.
- e. Fields will not be burned without prior Refuge Manager approval. Requests to burn fields will be made at least 120 days prior to anticipated burning. Refuge personnel will burn Fields only as per the St. Catherine Creek National Wildlife Refuge Fire Management Plan.
- f. All chemical cans, bags, oil cans, seed bags, litter and associated farming debris will be removed from the refuge daily.
- g. A minimum 5-foot grass buffer strip along both sides of roads will not be planted to crops by the Cooperative Farmer. Unimproved roads along field edges will not be planted. No compensation will be provided to farmers when planted crops are destroyed in these areas.
- h. Unless specified in this agreement, working of ground in the spring (liming, fertilizing, spraying, etc.) will not be allowed prior to March 1. This is not permitted prior to March 15 in the following areas. This is not permitted prior to April 1 in the following areas. No refuge farming activities will begin prior to finalization of the annual Cooperative Farming Agreement. Fall plowing will not be allowed in all fields after October 15 unless specified herein or approved by the Refuge Manager.
- i. Farm equipment will not be stored on the refuge except during periods of use.
- j. Refuge gates will be locked by the Cooperative Farmer at the completion of farming

- activities or at the completion of the workday.
- k. Firearms are permitted according to state and federal law and as outlined in this agreement for the control of invasive exotic species (i.e. feral pigs) that threaten refuge property, soils, wetland, and established crops.
 - l. Access through refuge gates will be for farming business only and not for hunting, fishing, wildlife observation, etc.
 - m. Farmers will not remove any woody vegetation from the refuge without approval of the Refuge Manager. Requests will have to be made in writing and detail specifically what is being proposed.
 - n. Failure to abide by the above Special Conditions is a violation of this Cooperative Farming Agreement and may result in the premature termination of said agreement.

Justification:

Cooperative farming was analyzed in the Environmental Assessment (USFWS 2005) for the Refuge's CCP; the Finding of No Significant Impact for the CCP's Environmental Assessment was signed in July 2006 (USFWS 2006). Cooperative farming use was found to be appropriate and compatible on St. Catherine Creek NWR. Environmental conditions and farming operations have not changed substantially since those analyses. Conditions/stipulations imposed in cooperative farming agreements ensure that farming activities minimize impacts to Refuge resources.

The Biological Integrity, Diversity, and Environmental Health Policy ([601 FW 3](#)) was approved in 2001 and updated in 2006 as one of the 14 directives contained within the NWRS Improvement Act of 1997. This policy provides Refuge Managers with an evaluation process to analyze refuge resources and recommend the best management practices in concert with the Refuge purpose(s) and the NWRS mission. This policy specifically addresses farming in [601 FW 3.15\(8\)](#) and [601 FW 3.15\(C\)](#).

"Our habitat management plans call for the appropriate management strategies that mimic historic conditions while still accomplishing refuge objectives ... Farming, haying, logging, livestock grazing, and other extractive activities are permissible habitat management practices only when prescribed in plans to meet wildlife or habitat management objectives, and only when more natural methods, such as fire or grazing by native herbivores, cannot meet refuge goals and objectives." [\[601 FW 3.15\(8\)\]](#)

"We do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s)." [\[601 FW 3.15\(C\)\]](#)

In addition, this policy provides guidance on biological integrity, diversity, and environmental health in a landscape context ([601 FW 3.7\(C\)](#)).

"In pursuit of refuge purposes, individual refuges may at times compromise elements of biological integrity, diversity, and environmental health at the refuge scale in support of those components at larger landscape scales. When evaluating the appropriate management direction for refuges, refuge managers will consider their refuges' contribution to biological integrity, diversity and environmental health at multiple scales."

The Refuge acknowledges that the cooperative farming program may influence some aspects of biological integrity, diversity, and environmental health from the cooperating

farmer's share on the Refuge. We try to minimize these impacts using best management practices. However, cooperative farming through the refuge's share on St. Catherine Creek NWR allows the Refuge to meet CCP objectives and contribute to, regional (LMVJV 2016), and national objectives (NAWMP, 2012) for providing vital wintering waterfowl habitat in the most productive and cost-effective manner.

In the case of St. Catherine Creek NWR, croplands constitute less than 5% of the Refuge acreage, but allow the Refuge to provide up to 7 million Duck Energy Days (DEDs) of forage for wintering waterfowl. Measures are taken to ensure that Integrated Pest Management and best management practices are followed by the cooperative farmers. Cooperative farming is the most cost effective method to produce the necessary foods to support wintering waterfowl and associated objectives.

The missions of the Refuge System provided in the Refuge Improvement Act of 1997 states that the "...mission of the National Wildlife Refuge System is to administer a national network of lands for the conservation, management and, where appropriate, restoration of fish, wildlife, and plant resources, and their habitats with the United States for the benefit of present and future generations of Americans."

Conservation and management means to sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and States laws, methods and procedures associated with modern scientific resource programs. These definitions denote active management and are in keeping with the House report on the Act which states that the "Refuge System should stand as a monument to the science and practice of wildlife management."

It thus follows, that if an economic use of a natural resource is shown to be conservation and management as defined in the Act, it does contribute to the mission by the very definition of terms used. If a use contributes to the mission, it thus meets the standard or threshold established in 50 CFR 29.1. In accordance with 50 CFR 29.1, cooperative farming, as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of St. Catherine Creek NWR and Refuge System mission.

NEPA Compliance for Refuge Use Description:

- Categorical Exclusion without Environmental Action Statement
- Categorical Exclusion and Environmental Action Statement
- Environmental Assessment and Finding of No Significant Impact
- Environmental Impact Statement and Record of Decision

This compatibility determination can be categorically excluded from further NEPA analysis under 40 CFR §1508.4, 516 DM 8.5(A)(1), 516 DM 8.5(B)(7), 516 DM 8.5(B)(9), and 516 DM 8.5(C)(5). Further, the actions do not trigger an extraordinary circumstance as outlined under 43 CFR §46.215. The cooperative farming use is consistent with the 2005 Draft Comprehensive Conservation Plan and associated Environmental Assessment (USFWS 2005) and Finding of No Significant Impact (USFWS 2006) for St. Catherine Creek NWR. Environmental conditions and farming operations have not changed substantially since that analysis. This compatibility determination updates and replaces the 2006 compatibility determination for cooperative farming.

References Cited:

Bellrose, F.C. 1976. Ducks, geese and swans of North America. Harrisburg, PA: Stackpole.

Dzus, E.H. and R.G. Clark. 1998. Brood survival and recruitment of mallards in relation to wetland density and hatching date. *Auk* 115(2): 311-318.

Fredrickson, L.H. and RD. Drobney. 1979. Habitat utilization by post breeding waterfowl. Pages 119-131 in: T.A Bookhout, ed. *Waterfowl and wetlands-an integrated review*. La Crosse, WI: La Crosse Printing.

Heitmeyer, M.E. 1988. Body composition of female mallards in winter in relation to annual cycle events. *Condor* 90:669-680.

Krapu, G.L. 1981. The role of nutrient reserves in mallard reproduction. *Auk* 98(1): 29-38.

Lower Mississippi Valley Joint Venture (LMVJV). 2007. MAV Waterfowl Stepdown State Summaries. LMVJV Waterfowl Working Group c/o Lower Mississippi Valley Joint Venture, Vicksburg, MS.

NAWMP (North American Waterfowl Management Plan) Committee. 2012. North American Waterfowl Management Plan 2012: People Conserving Waterfowl and Wetlands. Available at <http://www.dgif.virginia.gov/wildlife/waterfowl/north-american-waterfowl-management-plan-2012.pdf>.

Ringelman, J.K. 1990. Managing agricultural foods for waterfowl. Pp. 35-38 in *Waterfowl Habitat Management Handbook for the Lower Mississippi River Valley*. eds. Strickland, B.K and A. Tullos. 2009. Mississippi State University, Mississippi, 31 pp.

Reinecke, K. J., and C. R. Loesch. 1996. Integrating Research and Management to Conserve Wildfowl (Anatidae) and Wetlands in the Mississippi Alluvial Valley, U.S.A. Pages 927-940 in M. Birkan, editor. *Anatidae 2000: an international conference on the conservation, habitat management and wise use of ducks, geese and swans*: Strasbourg, France, December 5-9, 1994. *Gibier Faune Sauvage, Game and Wildlife* 13(3).

Reinecke, K.J., R.M. Kaminski, D.J. Moorhead, J.D. Hodges, and J.R. Nassar. 1989. Mississippi Alluvial Valley. Pp.203-247 in *Habitat management for migrating and wintering waterfowl in North America*, eds. L.M Smith, R.L. Pederson, and R.M. Kaminski. 1989. Texas Tech University Press. 560 pp.

Strader, R.W., and P.H. Stinson. 2005. Moist Soil Guidelines for the U.S. Fish and Wildlife Service, Southeast Region. Division of Migratory Birds, U.S. Fish and Wildlife Service.

Jackson, MS. 17 pp plus appendices.

Strickland, B.K, R.M. Kaminski, and A. Tullos. 2009. Waterfowl Habitat Management Handbook for the Lower Mississippi River Valley. Mississippi State University, Mississippi, 31 pp.

Sugden, L.G. 1971. Metabolizable energy of small grains for mallards. *Journal of Wildlife Management* 35:781-785.

Tiner, R. W., Jr. 1984. Wetlands of the United States: current status and recent trends. United States Fish and Wildlife Service, National Wetland Inventory Washington, D.C.

U.S. Fish and Wildlife Service. (1981). *Refuge manual*. Washington, D.C.: Division of Refuge Management, U.S. Fish and Wildlife Service.

U.S.Fish and Wildlife Service. Updated 2006, 601.FW3, Biological integrity, Diversity and Environmental Health Policy. <https://www.fws.gov/policy/601fw3.html>

U.S.Fish and Wildlife Service. 2005. Draft Comprehensive Conservation Plan and Environmental Assessment: St. Catherine Creek National Wildlife Refuge. October 2005. U.S. Fish and Wildlife Service, Southeast Region. Atlanta, GA.

U.S.Fish and Wildlife Service. 2006. St. Catherine Creek National Wildlife Refuge Comprehensive Conservation Plan. August 2006. U.S. Fish and Wildlife Service, Southeast Region. Atlanta, GA.

Approval of Compatibility Determinations:

SIGNATURE:

REFUGE MANAGER: _____
(Signature and date)

REVIEW:

REFUGE SUPERVISOR: _____
(Signature and date)

CONCURRENCE:

REGIONAL CHIEF: _____
(Signature and date)

MANDATORY 10-YEAR REEVALUATION DATE: _____

U. S. FISH AND WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT FOR CATEGORICAL EXCLUSION

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the following proposed action is categorically excluded from NEPA documentation requirements consistent with 40 CFR §1508.4, 516 DM 8.5(A)(1), 516 DM 8.5(8)(7), 516 DM 8.5(8)(9), and 516(C)(5).

Proposed Action and Alternatives. This compatibility determination is to allow cooperative farming on St. Catherine Creek National Wildlife Refuge (Refuge). No additional action alternatives were evaluated. Cooperative farming will contribute to the purposes for which the Refuge was established, the mission of the NWRs, and facilitates the ability of the Refuge to meet its habitat and wildlife management objectives as set forth by the 2006 Comprehensive Conservation Plan.

Categorical Exclusion(s). The categorical exclusions that can be applied to the cooperative farming compatibility determination are:

- 516 DM 8.5(A)(1)---"Changes or amendments to an approved action when such changes have no or minor potential environmental impact."
- 516 DM 8.5(8)(7) - "Minor changes in the amounts or types of public use on Service or State-managed lands, in accordance with existing regulations, management plans, and procedures"
- 516 DM 8.5(8)(9)-"Minor changes in existing master plans, comprehensive conservation plans, or operations, when no or minor effects are anticipated. Examples could include minor changes in the type and location of compatible public use activities and land management practices."
- 516 DM 8.5(C)(5)-"the issuance or reissuance of special use permits for the administration of specialized uses, including agricultural uses, or other economic uses for management purposes, when such uses are compatible, contribute to the purposes of the refuge system unit, and result in no or negligible environmental effects".

Further, the cooperative farming compatibility determination does not trigger any of the extraordinary circumstances outlined in 43 CFR §46.215.

Permits/Approvals. Cooperative farming is regulated through annual cooperative farming agreements and the Service's Pesticide Use Proposal process.

Public Involvement/Interagency Coordination. The draft compatibility determination for cooperative farming was made available for public review and comment for 14 days. Public notification included a press release sent to the *Natchez Democrat* and posted on the Refuge's website along with the draft document.

Supporting Documents.

U.S.Fish and Wildlife Service. 2005. Draft Comprehensive Conservation Plan and Environmental Assessment: St. Catherine Creek National Wildlife Refuge. October 2005. U.S. Fish and Wildlife Service, Southeast Region. Atlanta, GA.

U.S.Fish and Wildlife Service. 2006. St. Catherine Creek National Wildlife Refuge Comprehensive Conservation Plan. August 2006. U.S. Fish and Wildlife Service, Southeast Region. Atlanta, GA.

Refuge Manager

Date: