

Cooperative Farming

Draft Compatibility Determination

Title

Draft Compatibility Determination for Cooperative Farming on Tensas River National Wildlife Refuge

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Types

Farming (Cooperative)

Refuge

Tensas River National Wildlife Refuge (NWR, refuge)

Refuge Purposes and Establishing and Acquisition Authorities

Tensas River NWR was established under the Migratory Bird Conservation Act (16 U.S.C. § 715d).

In an effort to conserve the largest privately owned tract of bottomland hardwoods remaining in the Mississippi Delta, Congress authorized the Secretary of the Interior to establish the Tensas River NWR by Public Law 96-285 on June 28, 1980. Tensas River NWR was established for various purposes:

“For the preservation and development of the environmental resources ... to conserve the diversity of fish and wildlife and their habitat ... for the conservation and development of wildlife and natural resources, the development of outdoor recreation opportunities, and interpretative education,” and “to give special consideration to management of the timber on the refuge to insure [ensure] continued commercial production and harvest compatible with the purposes for which the refuge is established and the needs of fish and wildlife which depend upon the dynamic and diversified hardwood forest” (94 Stat. 595, dated June 28, 1980);

“For the development, advancement, management, conservation, and protection of fish and wildlife resources” [16 U.S.C. 742f(a)(4)] “for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude” [16 U.S.C. 742f(b)(1) (Fish and Wildlife Act of 1956)];

“For conservation purposes” [7 U.S.C. 2002 (Consolidated Farm and Rural Development Act)]; and

“To conserve (A) fish or wildlife which are listed as endangered species or threatened species or (B) plants” [16 U.S.C. 1534 (Endangered Species Act of 1973)].

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as 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 (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

Yes. This Compatibility Determination (CD) reviews and replaces the 2009 CD for Cooperative Farming. Cooperative farming was previously analyzed and approved in the Environmental Assessment (EA) and the Finding of No Significant Impact (FONSI) for the refuge's Comprehensive Conservation Plan (CCP, USFWS 2009). Cooperative farming was subsequently included in the 2014 Tensas River NWR Habitat Management Plan (HMP) (USFWS 2014). The use was evaluated in conjunction with the Service's 2020 Programmatic Environmental Assessment for Use of Genetically Engineered Agricultural Crops (GECs) for Natural Resource Management on National Wildlife Refuges in the Southeastern United States (GEC PEA) and FONSI (USFWS 2020). This use is tiered using a Categorical Exclusion (CatEx)/Environmental Action Statement (EAS) from the 2009 CCP/EA/FONSI (USFWS 2009), the 2014 HMP (USFWS 2014), and the GEC PEA (USFWS 2020).

What is the use?

Tensas River NWR proposes to continue cooperative farming, the practice of agriculture, especially mechanically disturbing the soil and artificially introducing seeds or other plant parts periodically to produce stands of plants, for use primarily as food by wildlife. This includes water delivery, irrigation, and drainage. Cooperative farming is used by the U.S. Fish and Wildlife Service (Service) on national wildlife refuges in the Southeast Region as a habitat management tool to provide high energy food sources for millions of wintering ducks, geese, swans, and other migratory bird species. The Service's Southeast Region currently includes 131 refuges with a wide variety of natural and cultural resources, establishing purposes and missions, and partner support. At least 50% of these refuges include waterfowl management as a priority and almost all provide habitat resources for waterfowl (Hagy, et. al 2020).

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 2015) as stepped down from the North American Waterfowl Management Plan (NAWMP). Tensas River NWR has a current wintering waterfowl population objective of 60,200 dabbling ducks, diving ducks and geese. The current waterfowl energy days (WEDs) objective for Tensas River NWR is 3,818,703 (Hagy et. al 2020). WEDs are defined as the number of waterfowl that can be energetically sustained in one acre of foraging habitat for one day (LMVJ 2015). Waterfowl energy needs are modeled for an overwintering period of 110 days, representing early November to late February (Reinecke and Loesch 1996). Additionally, WED objectives were adjusted to account for goose competition (LMVJV 2015) and wood ducks were assumed to feed 75% in forested wetlands and 25% in moist-soil wetlands (LMVJV 2015). Previous habitat goals are included in the Comprehensive Conservation Plan (CCP, U.S. Fish and Wildlife Service [USFWS] 2009) and Habitat Management Plan (HMP, USFWS 2014). Objectives are specified in the CCP (Objective A5) and HMP (Objectives 3.4, 4.3, 5.2.3, 5.3.3). The 150 acres of floodable cropland can produce 16,269 DED's/acre/year or 2,440,350 DED's/year.

The refuge uses a combination of farming, moist-soil management, and managed forested wetlands to provide suitable wintering waterfowl habitat. Cooperative farming is used on the refuge to manage and maintain approximately 650 acres of cropland of which 150 acres are located in waterfowl impoundments, which are seasonally flooded to meet the refuge's waterfowl population and habitat objectives. This farming program is a critical component of the refuge's habitat management program.

Cooperative farming is not a priority public use as defined in the Refuge System Improvement Act of 1997, but it contributes to waterfowl habitat management goals included in the CCP, HMP, NAWMP and LMVJV.

Is the use a priority public use?

No

Where would the use be conducted?

This use would primarily be conducted in the Greenlea Unit behind the Refuge Headquarters (Figure 1). This Unit consists of 2,737 acres of which approximately 650 acres is cooperatively farmed annually. The farmed portion of the refuge consists of 0.8% of the total refuge acres. Several special use deer hunts are conducted in this unit. This area is the most heavily used area on the refuge for migratory waterfowl and provides sanctuary and "hot foods" in the form of agricultural crops to maintain the migratory waterfowl during cold periods, molting, and deposition of energy reserves in preparation of the breeding season. Access to the Unit is primarily through the Wildlife Drive. Fee title acres within the acquisition boundary have

increased from 74,622 acres when the CCP was approved in 2009 to 77,868 acres today. The additional acres will not be cooperatively farmed.

When would the use be conducted?

Cooperative farming activities (field preparation, planting, harvesting, etc.) generally occur during daylight hours from March 1 until November 1. However, winter wheat treatments (e.g., fertilization) may occur during November through February, generally when plants begin to grow in the late winter to early spring.

How would the use be conducted?

The cooperative farmer (cooperator) is selected through an interview process and must provide a resume with past farming experience; interviews will be conducted by Service staff. The annual cooperative farming agreement (agreement) is established with the farmer prior to the planting season, and a commercial Special Use Permit is issued with stipulations included. The agreement outlines the crop(s), location, and amount of acreage to be planted and any necessary special conditions during the coming year and is signed by the cooperator and the refuge manager or designee. The agreement specifies what crops will be grown in specific fields for both the refuge and cooperator's shares. Shares are acreage-based, and generally the cooperator receives 75 percent of the crop planted while the refuge receives 25 percent. This percentage may be modified depending on crop type and input costs. The refuge's crop share is strategically located in areas that can be flooded in the winter to provide waterfowl foraging habitat in support of NAWMP objectives for the Mississippi Alluvial Valley (MAV). The cooperator is responsible for all equipment, fuel, seed, fertilizer, chemicals, and labor necessary to produce the crop. Cooperators are required to perform soil tests to determine nutrient needs (fertilizer and lime applications) according to the local Agriculture Extension Service. The cooperator frequently signs the planted acres of their share up with the USDA Farm Service Agency to be eligible for subsidy payments to mitigate financial loss. The current programs available are the Agricultural Risk Coverage-County Option (ARC-CO) and Price Loss Coverage (PLC) Election and Contract. The Farm Service Agency Farm, Tract and Field Numbers are delineated in Figure 2. The acreage specified in Farm 1949 is 762.61 acres which differs from the actual acres planted annually due to inundated areas too wet to plant.

Inputs typically associated with crop production include fertilizer (e.g., synthetic fertilizers, manures, and composts containing nitrogen, phosphorus, and potassium), pesticides (e.g., insecticides, herbicides, fungicides; Olson and Sander 1988, Hoeft et al. 2000, McLeod and Studebaker 2006), and irrigation or water management. Pesticide use for habitat management and invasive and nuisance species control is part of the Tensas River NWR CCP/EA/FONSI (USFWS 2009a and b) and HMP/CatEx/EAS (USFWS 2014).

Pesticide use by the refuge's cooperative farmers generally include pre-planting burndown in conservation tillage operations, pre-emergence treatments to prevent dormant pests from becoming established, and post emergence treatments to control existing pests that exceed economic threshold levels.

Recently, the Service clarified four tiers of analysis to support NEPA compliance related to the use of pesticides on units of the Refuge System to support refuge purposes, goals, and objectives, as listed.

- Pesticide specific analysis by the U.S. Environmental Protection Agency (EPA)
- Pesticide specific analysis through the Service's Pesticide Use Proposal (PUP) System
- General pesticide analysis for a specific refuge, group of refuges, or refuge complex through an EA/FONSI or Environmental Impact Statement (EIS)/Record of Decision (ROD)
- General pesticide analysis through a periodic EAS that documents the pesticide use/treatment planned for a specific refuge, group of refuges, or refuge complex

The Service only considers the use of pesticides registered 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 cooperators. Application of pesticides must follow the Department of Interior's Pesticide Use Policy (U.S. Department of the Interior 2007) and the Service's Integrated Pest Management Policy (569 FW 1, USFWS 2010). The Service also conducts annual analysis of pesticide usage through the Service's pesticide use proposals (PUPs) process for application of all pesticides and approves only those that are shown to not significantly, adversely impact fish and wildlife resources. Intra-Service Section 7 Endangered Species Act consultation is also completed on the application of all pesticides in coordination with preparing and submitting the PUPs. The Service prepared the Tensas River NWR CCP (USFWS 2009a) and associated Environmental Assessment (EA, USFWS 2009b) to analyze the effects of the farming program, including the use of pesticides. Best Management Practices (BMPs) are also used, in addition to label restrictions imposed by EPA, to reduce the chances of any negative effects to non-target species, including to bats, pollinators, and threatened and endangered species. Example BMPs include a minimum buffer distance to water and restriction of a pesticide to one application per field. Pesticides are generally used on Service farmland due to expected pest densities and/or when pest densities reach economic threshold levels. Attached to the agreement will be a list of pesticides approved for use through the PUPS process.

In June 2020, the Service issued a decision to allow the use of GECs on NWRs in Department of the Interior Regions 2 and 4 for natural resource management in agricultural practices to cultivate supplemental foods for wildlife, manage invasive species, and provide opportunities for wildlife-dependent public recreation, such as wildlife observation (USFWS 2020). The use of GECs will be part of an Integrated Pest

Management (IPM) approach to manage pests, weeds, and invasive species that combines biological, cultural, physical/mechanical, and chemical tools in a way that minimizes economic, health, and environmental risks (USFWS 2020). Integrated Pest Management combines pest, weed, and invasive species biology, environmental information, and available technology to prevent unacceptable levels of damage through the most economical means, while posing the least possible risk to people, property, resources, and the environment. The underlying philosophy of IPM is that pest, weed, and invasive species control is most effective when a range of measures is deployed in a manner that diminishes the likelihood that the pest, weed or invasive species will become resistant to the measures. Integrated Pest Management allows the use of a system to combat weeds and pests that minimizes the use of pesticides; increases conservation practices; and strives to decrease any effects to air, water, or soil quality. The integration and use of GECs with other IPM practices allow the Service to be more effective in supporting refuge purposes, goals, and objectives. Genetically Engineered Crops and non-GECs could be used in rotation, as appropriate and guided by the overall NWR purposes; refuge management goals and objectives; and other policies, guidance, and decision documents.

The Southeast Region uses a tiered analysis to determine whether a GEC can be used on an NWR based on the following:

1. USDA, Animal and Plant Health Inspection Service's (APHIS's) specific NEPA analysis and de-regulation or exemption of the GEC;
2. The Region's programmatic NEPA analysis of GEC use (GEC PEA; USFWS 2020);
3. NEPA analysis of farming on the Tensas River NWR through the CCP and HMP (USFWS 2009a and 2014) and GEC use (see the CatEx/EAS for this CD); and
4. Analysis of whether such GEC use would meet the essentialness requirement of the Service's Biological Integrity, Diversity, and Environmental Health (BIDEH) Policy (601 FW 3).

The GEC/PEA/FONSI concluded that the use of GECs as analyzed presented no significant impacts to the physical, biological, and socio-cultural environments (USFWS 2020). Including the use of GECs to help support refuge purposes, goals, and objectives, this Cooperative Farming CD/CatEx/EAS (third tier above) tiers from the GEC/PEA/FONSI (USFWS 2020) (second tier above), the CCP/EA/FONSI (USFWS 2009a, 2009b; third tier above), and the HMP/CatEx/EAS (USFWS 2014; third tier above) for Tensas River NWR. The fourth tier of analysis from above will only occur for GEC use on a NWR that has met the first three tiers. All four tiers of analysis related to GEC use have been satisfied at Tensas River NWR.

The cooperator assumes responsibility for all associated costs for the crops grown. Modifications to the original farming agreement may occur throughout the farming season by writing addendums, which have been agreed upon and signed by both the cooperator and refuge manager or designee, to the original agreement. The refuge

manager or designee will administer the cooperative farming program and be required to prepare farming contracts, meet with farmers, verify crop plantings, verify pest problems, and negotiate any needed addendums during the year. The farmer and employees use multiple tractors with implements including, mowers, disks and herbicide sprayers as well as self-propelled equipment, such as combines, to harvest crops. Contractors hired by the cooperator may use fixed-wing aircraft for pesticide applications if approved through the Service PUPs process.

Why is this use being proposed or reevaluated?

Cooperative farming on Tensas River NWR is being reevaluated pursuant to the National Wildlife Refuge Improvement Act (1997) and Service policy 603 FW 2.

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 4.2 million ducks and geese (Reinecke and Loesch 1996; LMVJV 2007), which includes mallard (*Anas platyrhynchos*), northern pintail (*A. acuta*), American black duck (*A. rubripes*), gadwall (*Mareca strepera*), American wigeon (*M. americana*), green-winged teal (*A. carolinensis*), northern shoveler (*Spatula clypeata*), wood duck (*Aix sponsa*), and geese. Waterfowl habitats are ranked with a value that describes the amount of energy (WED) they provide in food resources. The overall NAWMP goal for the MAV is 469,336,891 DEDs (LMVJV 2015). Currently the State of Louisiana is deficient in wintering waterfowl habitat by 53.4 million WEDs (LMVJV 2015); thus, the farming program adds essential capacity to the ability of refuges to significantly contribute to NAWMP DED goals and objectives. The Service has recently revised waterfowl objectives for all refuges in the Southeast where migrating and wintering waterfowl are a priority resources of concern, using a method developed by Hagy et al. (2020) to step down NAWMP continental waterfowl population goals to the refuge level (see Table 1). These objectives will be reviewed and incorporated, as appropriate, into waterfowl management on Tensas River NWR. The current waterfowl energy days (WEDs) objective for Tensas River NWR is 3,818,703 (Hagy et. al 2020).

The primary purpose for farming on refuges is to ensure that waterfowl can meet their foraging needs to enhance their body condition and support 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

(unpublished data, M. Koenff, USFWS). Conventional farming practices conducted on private property surrounding the refuge consist of harvesting crops followed by fall tillage to reduce pest insect thresholds and prepare for planting the following year. This activity removes waste grain, leaving minimal forage for wildlife.

Crops provide a dense and reliable source of calories, compared to the fruits and nuts that constitute the bear's natural diet (Hellgren et al. 1993 ; Howe et al. 2012). Numerous studies have demonstrated substantial agricultural crop use by black bears (Landers et al. 1979, Hellgren and Vaughan 1988; Pelton 2000; Roof 1997; Weaver and Pelton 1994) The diets of bears within the Deltic area, located within the Tensas River Basin (TRB) subpopulation, have been found to consist of 49 percent agricultural crops (Anderson 1997)Benson and Chamberlain (2006) found corn comprised the greatest percentage volume of summer (33.3%), fall (30.6%) and total (26.5%) scats in a food habitat study in the TRB. The overall reproductive rate for bears in northwest Minnesota was higher than in other parts of the state, due to the availability of both natural foods (especially hazelnuts along the many forest edges) and crops (Garshelis et al. 2013 ; Ditmer 2014; Ditmer 2016). Weight and fat were positively correlated with crop use for both sexes, and males' use of crops also increased with their physical stature, suggesting that crops provided substantial caloric benefits to bears and that social dominance may have influenced foraging decisions. Bears are frequently seen foraging in the Greenlea Unit on Tensas River NWR when agricultural crops, particularly grain sorghum, are planted and left standing (Dickson, personal observation).

American woodcock (*Scolopax minor*) were captured and banded within the farmed areas in the Greenlea Unit on Tensas River NWR to evaluate diurnal woodcock habitat characteristics (Elizondo et al. 2019). Berdeen and Kremetz (1998) documented woodcock frequently using fields at night. Crop types used by woodcock at night include soybean (Stribling and Doerr 1985, Blackman et al. 2012, Kremetz et al. 2014), corn (Connors and Doerr 1982, Blackman et al. 2012, Kremetz et al. 2014), winter wheat (Blackman et al. 2012), sorghum (Kremetz et al. 2014), fallow crop fields (Kremetz et al. 1995, Kremetz et al. 2014), and moist-soil impoundments (Kremetz et al. 2014). In studies where soybeans were available, soybeans are usually used more than other crop types (Stribling and Doerr 1985, Blackman et al. 2012, Kremetz et al. 2014). In addition to waterfowl, these two refuge resources of concern (i.e., woodcock and bear) will benefit from the use of cooperative farming on the refuge.

At the present time, the refuge does not have the staff or funds necessary to manage and maintain the acreage needed to meet its waterfowl population and WED objectives without the cooperative farming program. Refuge farming operations will continue under carefully regulated conditions.

Availability of Resources

The analysis of cost for administering and managing cooperative farming will only include the incremental increase above general operational costs that we can show as

being directly caused by the proposed use. Adequate resources exist to properly develop, operate, and maintain the use in a way that will not materially interfere with or detract from fulfillment of the refuge purposes and the Refuge System mission. This use was previously approved in the refuge CCP and associated EA (USFWS 2009a, 2009b) and HMP (2014).

One-time costs:

- There are no one-time costs associated with this use.

Annual/recurring expenses:

- Administration and Management – Resources involved in the administration and management of the use includes personnel time associated with drafting the Cooperative Farming Agreement, PUPS, Pesticide Use Reports and Special Use Permit administration. The full-time equivalent (FTE) employee wildlife biologist spends 208 total hours per year (\$12,900) creating administrative documents, including PUPS, and coordinating farming activities.
- Monitoring – One FTE wildlife biologist spends 104 total hours per year (\$6,450) monitoring crops, pesticide applications and acreage delineations.
- Maintenance – Minimal. Maintaining the Wildlife Drive for farm access is already occurring during other ongoing refuge maintenance activities.

Offsetting Revenue:

- None. The Refuge does not currently charge for a Commercial Special Use Permit.

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purposes and the Refuge System mission

Multiple NEPA analyses and decision documents address the direct, indirect, short-term, long-term, and cumulative impacts associated with cooperative farming on Tensas River NWR, as listed.

- 2009 Tensas River NWR CCP/EA/FONSI and Endangered Species Act (ESA) Section 7 Biological Evaluation (BE) (USFWS 2009a, 2009b)
- 2014 Tensas River NWR HMP/CatEx/EAS (USFWS 2014)
- The Service's GEC/PEA/FONSI (USFWS 2020) described and analyzed the use of GECs on refuges within U.S. Department of the Interior (Interior) Unified Regions 2 and 4 (IR2&4), which included Tensas River NWR.

- The NAWMP provides continental waterfowl population objectives (USDOJ EC ENRM 2018), which have been stepped down to NWRs in IR2&4 and expressed as waterfowl energy day (WED) objectives (Hagy et al. 2020).
- Annual Tensas River NWR PUPs and ESA Section 7s

The analyses of impacts associated with the cooperative farming use from these documents are incorporated herein by reference; only summary impacts are provided here. As outlined above, the use was previously analyzed, found to not have significant impacts, and found compatible. Environmental conditions and the use have not changed substantially since the use was evaluated and approved.

The effects and impacts of cooperative farming on refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the use. Adapting to changing conditions, the Refuge Manager may, at any time, modify or eliminate the use to address resource concerns, unacceptable impacts, or public safety needs.

Short-term impacts

Potential physical and biological resource impacts include geology and soils, air quality, water quality, floodplains, wildlife and aquatic species, threatened and endangered species, and habitat and vegetation (including vegetation of special management concern).

Short-term impacts from cooperative farming operations include soil disturbance by disking and the loss of standing cover of weed species by mowing, disking, and herbicide application. Loss of residual cover can cause soil run-off and soil compaction (USFWS 2020). Other short-term impacts are temporary disturbance from traffic and mortality to small animals and birds from machinery (Erb and Jones 2011, Tewes et al. 2013, Deak et al. 2021). Sown crops quickly cover the soil disturbed by tillage, and the crops produced supplement natural habitats.

White-tailed deer fawns are susceptible to mortality by farming equipment, but most farming activities occur outside of the peak fawning season which occurs on Tensas River from July 10- July 19 (Shuman 2016). Rohm et al. (2007) found less than 5% fawn mortality occurred due to human induced causes including farm equipment.

The Greenlea Unit, where cooperative farming occurs, is a high public use area for wildlife observation and photography. The Wildlife Drive allows auto touring through the Greenlea Unit and visitors frequent this area to observe white-tailed deer, Louisiana black bear as well as other avian species. The operation of farming equipment at times when the public is attempting to view wildlife has the potential for a negative experience, but the crops planted bring wildlife into an area easily viewed from a vehicle over an extended period.

The potential for surface runoff exists if disking occurs or pesticides are applied prior to heavy rainfall. Best management practices, including vegetative buffers spanning 50-325 feet wide, depending on application method and type of pesticide, between

fields and surface water will ensure that water contamination does not occur. Using integrated pest management (IPM) strategies, pesticides are only used if monitoring by an IPM scout confirms that a pest infestation threshold is exceeded. Pesticides toxic to bees are only applied at daylight or at dusk to minimize direct contact potential.

Treated seed approved through the PUPS process may be used; although, neonicotinoid seed treatments are not allowed. If any treated seed is spilled by the farmer, it must immediately be picked up to prevent consumption by birds.

Cooperators are allowed to use EPA-approved pesticides through the closely monitored Service-wide PUP System. These pesticides are reviewed and approved by EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA, 7 USC §136). EPA conducts risk 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 BMPs, such as no-tillage, crop rotations, pesticide spraying rotations, and establishing pesticide no-spray buffer distances to surface water are used in all farming practices (above and beyond EPA required buffer distances). that assist the refuge with the use of each pesticide and reduces potential impacts to non-target pest species. As part of the PUP process, Intra-Service Section 7 Endangered Species Act consultation is conducted for each pesticide to evaluate any possible negative impacts to threatened and endangered species that are near or adjacent to the spray area. The Service is typically more restrictive than what is stipulated on the label, particularly when it comes to buffers. Each chemical is carefully evaluated and ultimately approved by the refuge manager, Regional IPM Coordinator and/or the National IPM Coordinator through the PUP process.

Maintaining cooperative farming partnerships is an economical way in which the refuge can achieve wildlife objectives. The refuge's purposes, goals, and objectives must be the priority over any concern for economic gain; however, profitability is essential to the sustainability of cooperative farming as a management tool. Advancements in seed technology and pesticide use have resulted in a more sustainable agriculture system that is producing greater yields per unit area. This growth in yield is essential with the ever-increasing demands influencing land uses. For cooperative farming to remain a profitable and viable management tool on NWRs, we must utilize the best available tools and technology, while at the same time protecting and prioritizing environmental resources.

Long-term impacts

The potential for water quality contamination exists but the Service's PUPs process to evaluate the specifics of proposed chemicals, treatment sites, application methods,

and sensitive aspects of use minimizes this threat. The decision to approve or disapprove a new chemical is based on extensive toxicity data, proposed use of the pesticide, environmental conditions, degradation rates, solubility, and availability of other cultural, biological, or less toxic alternatives. To protect aquatic resources, the Service has established buffers adjacent to water bodies and uses herbicides approved for aquatic use when treating aquatic weeds. The heavy clay soils associated with the refuge prevent rapid leaching into groundwater. For these reasons, contamination of groundwater or surface runoff should not occur using the best management practices specified in the PUP.

Both current and proposed management actions provide the benefit of supplemental forage for migratory waterfowl within the Mississippi and Atlantic flyways. Refuge farming practices are designed for the predominant benefit of waterfowl (ducks, cranes, and geese). However, many other species benefit directly or indirectly from refuge crops, including shorebirds, songbirds, raptors, other migratory birds, resident wildlife, and invertebrates. 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 have learned to capitalize on the abundant foods produced by agriculture (Bellrose 1980). 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). Foods that are high in carbohydrates, such as corn, millet, and milo, provide energy wintering ducks need to arrive on the breeding grounds in good condition (Ringelman 1990; Petrie et al. 1998; Checkett et al. 2002; Kaminski et al. 2003).

The Louisiana black bear was delisted from the Endangered Species Act in 2016 but remained listed on the [2020 State of Louisiana's Animal Species of Greatest Conservation Need](#) as “vulnerable; at moderate risk of extirpation in Louisiana due to a fairly restricted range, relatively few populations or occurrences (21 to 100 extant populations), recent and widespread declines, threats, or other factors” (Louisiana Department of Wildlife and Fisheries 2020). Several research studies have documented high use of agricultural crops, including corn (*Zea mays*), by bears. In areas where bears and agricultural activities are in close proximity, bears often consume large amounts of cereal grains (Benson and Chamberlain 2006, Landers et al. 1979; Hellgren and Vaughan 1988; Anderson 1997; Weaver 1999). This species is observed frequently foraging on row crops within the Greenlea Unit.

The northern long-eared bat (NLEB) is federally listed, and the refuge lies within the edge of the NLEB range; although, no NLEB's and maternal colonies have been detected on the refuge. The Tricolored Bat (TCB) is proposed for listing as endangered. Documentation of this species has occurred during mobile acoustical bat surveys and anthropogenic structure surveillance on the refuge. Monarch butterflies have been listed as candidate species and utilize herbaceous ground cover,

particularly milkweeds, for foraging. This species does not winter on the refuge, but may be present during the spring breeding period. The Fat Pocketbook freshwater mussel is listed as endangered and after a 5-year review in 2019, the U.S. Fish and Wildlife Service proposed to delist this species. This species has not been detected in the Tensas River during two rigorous mussel surveys. The Alligator snapping turtle has recently been proposed threatened and has been documented on the refuge.

The use of pesticides to produce row crops in agricultural fields should not kill potential roost trees for any bat species. Pesticides will only be applied at daylight when bats are not actively foraging and pollinators, including butterflies, are least likely to be present. Appropriate vegetative buffers exist between the farmed fields and the Tensas River that impacts to Alligator snapping turtle and Fat pocketbook are not likely to adversely affect these species. The use of pesticides has been approved through the Service's Intra-Service Section 7 process and approved by the Ecological Services office in regard to these species.

A negative public perception regarding farming on a national wildlife refuge may be an issue in certain geographic locations but is not expected to be a concern at Tensas River NWR. Farming is a traditional pastime in this region and the refuge visitors support the use. The wildlife photographers and observers use the farmed units more than any other area on the refuge.

The relatively small impact area (0.8% of Tensas River NWR is farmed) limits negative impacts to refuge wildlife and vegetation. Croplands replace native habitat that would historically have been mature bottomland hardwood forests, but over 16,000 acres of cropland acquired by the refuge have been reforested (USFWS 2014).

Public Review and Comment

The draft CD will be available for public review and comment for 15 calendar days, from April 17, 2024 to May 1, 2024. The public will be made aware of this comment opportunity through the refuge website (https://www.fws.gov/refuge/tensas_river/) and Tensas River Refuge Association Facebook page (<https://www.facebook.com/trrapage/>). State agencies and Native American Tribes have been asked to review and comment on the draft CD. A hard copy of this document will be posted at the Refuge Headquarters and Visitor Center (2312 Quebec Rd., Tallulah, LA 71282). Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final CD. Robust public outreach and coordination with Native American Tribes and other federal agencies, state agencies, and local governments was conducted during the development of the refuge CCP/EA/FONSI, which included cooperative farming (USFWS 2009b). For more information regarding public involvement for the CCP, please see Appendix D in the final CCP (USFWS 2009b). The Service also conducted public involvement for the

GEC/PEA; for more information regarding consultation and coordination for this process, see Appendix F in the GEC PEA (USFWS 2020).

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. The program will adhere to general conditions for cooperative farming programs as listed in the Cooperative Agricultural Use Policy (620 FW 2, USFWS 2017).
2. All operations on refuge cropland are to be carried out in accordance with the best management practices and soil conservation practices.
3. Special conditions of cooperative farming agreements will address unique local conditions as applicable.
4. Atrazine and neonicotinoid-treated seeds may not be used on refuge lands.
5. The use of GEC crops is not permitted in 2024.
6. Refuge milo must be planted by May 15. If the cooperator is unable to meet this deadline, he must contact the Refuge Manager 10 days prior to planting. Exceptions will only be made with the approval of the Refuge Manager, dependent on weather conditions.
7. Post-emergent pesticides will not be used unless crop scouting indicates pest density is at or beyond the economic threshold.
8. All crops will be fertilized and limed according to Louisiana State University Agricultural Experiment Station soil test analysis every 3 years. The cooperator will provide the refuge with a copy of the results.
9. Proof of seed type must be provided to refuge staff.
10. No pesticide application will occur within 50 feet of surface water, and aerial application of certain pesticides will not occur within 325 feet of surface water.
11. Cooperator is required to have all pesticides approved prior to their use.
12. Cooperator shall notify the refuge 24 hours in advance of any proposed application of fertilizer, herbicide or insecticide and provide the refuge with end-of-the-year summaries of application (including amount of product) on the form supplied by the refuge.
13. Refuge roads must be repaired to the condition at the time of initiation of the cooperative farming agreement.
14. Fall disking is allowed only when winter wheat is planted.

15. No farming activities or crop monitoring may be conducted during special use deer firearm hunts.

Justification

The total cropland acres on Tensas River NWR represent less than 1% of the entire refuge yet contribute to migratory waterfowl populations and provide agricultural crops for woodcock and Louisiana black bears, which were delisted in 2016. The relatively small impact area (0.8% of Tensas River NWR) suggests that no plant or species of fish and wildlife will be negatively impacted or extirpated from the refuge. 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 now occurring on the refuge. Over 16,000 acres of the refuge have been reforested since the refuge was established, reducing habitat fragmentation and improving habitat for neotropical, forest-interior breeding birds. Agricultural fields attract waterfowl and promote a positive visitor experience for hunters and other visitors by attracting wildlife species into easily viewed areas for the general public. Frequently before nightfall, numerous vehicles will drive the Wildlife Drive to view white-tailed deer and Louisiana black bears.

The current acres allocated to cooperative farming not only improve habitat for refuge resources of concern (waterfowl, woodcock, and Louisiana black bear) identified in the HMP, but also contributes to other priority public uses identified in the Refuge System Improvement Act of 1997 including wildlife observation and photography and hunting. The farmed acres are where the majority of visitors come to the refuge to observe and photograph wildlife. The farming program at Tensas River NWR has been reduced to a level where further reductions to the acreage being farmed would result in it not being economically feasible for a cooperator to continue farming.

The proposed use can be categorically excluded from further National Environmental Policy Act (NEPA) analysis under 40 CFR 1508.4 (definition of categorical exclusion) and

516 DM 8.5 B (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 B(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.

Further, this action does not trigger an extraordinary circumstance as outlined under 43CFR§46.215. Cooperative farming has been found to be appropriate and compatible on Tensas River NWR, and this use is consistent with the 2009 EA and final CCP for Tensas River NWR (USFWS 2009a, 2009b). The environmental conditions and use

have not changed substantially since the previous NEPA analysis and decision in 2009. This CD updates and replaces the previous 2009 CD.

Based on available science and best professional judgement, the Service has determined that cooperative farming at Tensas River NWR, in accordance with the stipulations provided, would not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of Tensas River NWR. Cooperative farming, as outlined in this CD, would not conflict with the national policy to maintain the biological diversity, integrity, and environmental health of the refuge.

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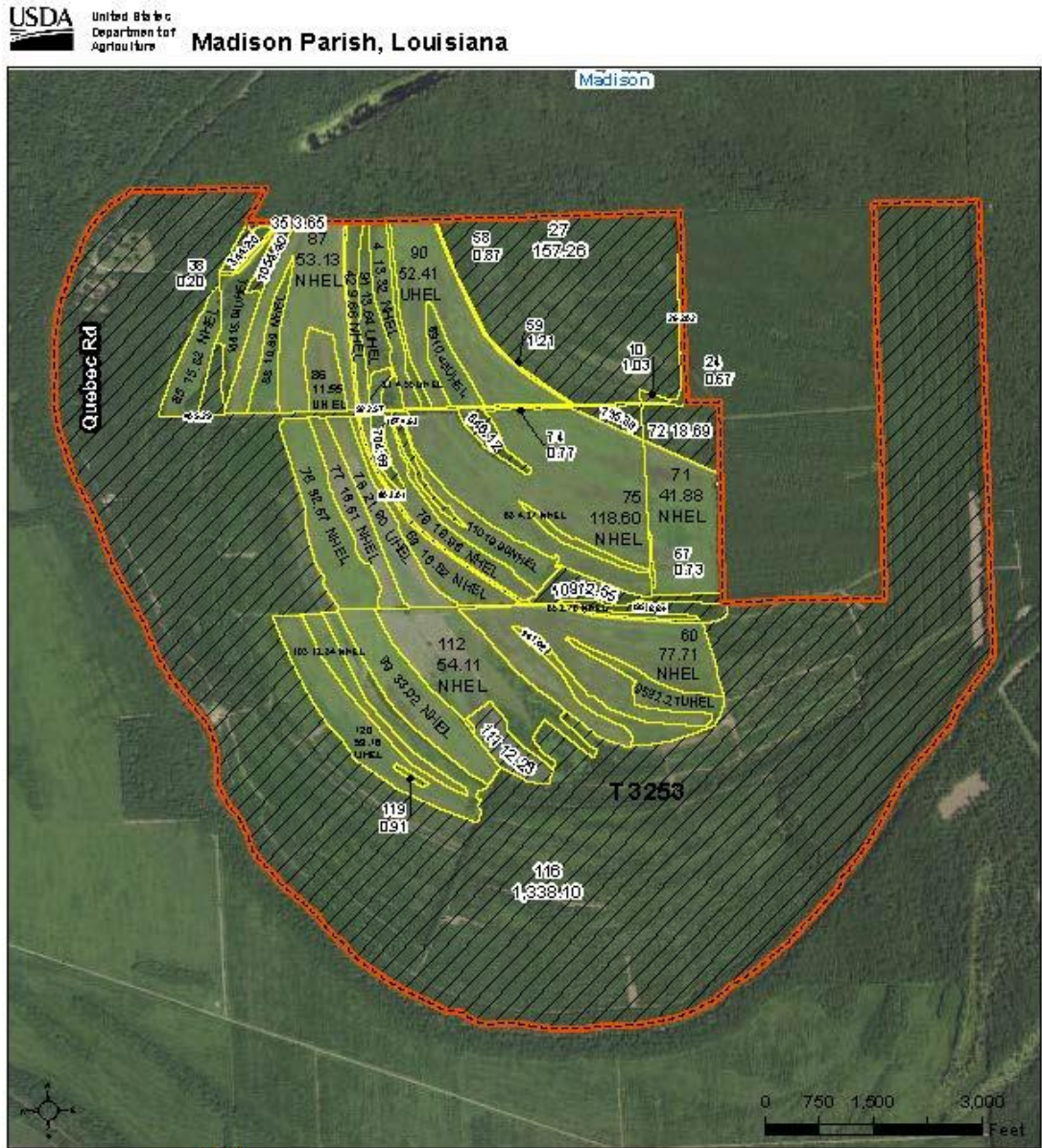
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Figure 1. Tensas River National Wildlife Refuge Cooperative Farming Agreement



Figure 2. U.S. Department of Agriculture Farm 1949 Tract 3253



Common Land Unit **Tract Boundary** Image Acquisition Year - 2021 2022 Program Year
 Map Created March 22, 2022
 Farm **1949**
 Tract **3253**
 LA065_T3253
 Tract Cropland Total: 762.61 acres

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data as is and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific termination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

Table 1. Final waterfowl population and energy objectives for National Wildlife Refuges in the Southeast (Hagy et al. 2020).

North LA Complex											
	NWR	Dabbling Duck	Diving Duck	Goose	Swan	Cranes	Total Revised Objective	Current Objective	Delta (Difference)	NOTES	
Population Objectives	Black Bayou Lake NWR	2,959	485	56	0	0	3,500				
	DArbonne NWR	26,300	6,387	310	0	2	32,999				
	Handy Brake NWR	10,624	1,963	188	0	0	12,774				
	Red River NWR	95,342	32,986	8,203	0	15	136,546				
	Upper Ouachita NWR	95,612	17,667	10,137	0	16	123,432				
	Tensas River NWR	53,654	3,799	2,747	0	3	60,203				
Waterfowl Energy Days (WED)	Black Bayou Lake NWR	180,489	0	0	0	0	180,489	0	180,489		
	DArbonne NWR	1,604,113	274,809	0	0	0	1,878,922	1,018,840	860,082		
	Handy Brake NWR	647,972	84,457	0	0	0	732,429	864,873	(132,444)		
	Red River NWR	5,759,027	1,419,245	1,173,758	0	0	8,352,030	8,100,000	252,030		
	Upper Ouachita NWR	5,831,742	760,115	1,412,432	0	0	8,004,289	4,511,478	3,492,811		
	Tensas River NWR	3,272,539	163,460	382,705	0	0	3,818,703	3,208,614	610,089		
	WED Total	17,295,883	2,702,086	2,968,894	0	0	22,966,863	17,703,805	5,263,058		

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date