

Draft Compatibility Determination

Use:

Agriculture -Cooperative Farming Activities with associated Chemical Use and Genetically Modified Crops (GMCs)

Refuge Name:

Sequoyah National Wildlife Refuge

County:

Sequoyah, Muskogee, Haskell Counties, Oklahoma

Establishing and Acquisition Authority (ies):

The Refuge was established on December 11, 1970, in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 664 et seq.), which states that the Refuge “.... *shall be administered by him [Secretary of the Interior] directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...*”.

Refuge Purpose(s):

The Sequoyah NWR is an overlay project of the U.S. Army Corps of Engineers (USACE) established on the 42,000 acre Robert S. Kerr Reservoir by Cooperative Agreement No. DACW56-3-71 on December 11, 1970. A General Plan formulated and approved through the Cooperative Agreement states that the land and water areas set aside for the Refuge will be administered for the conservation and management of migratory birds and of other fish and wildlife.

Additionally, Refuge activities are aimed at overall accomplishment of the four goals of the Refuge system. These are:

- To preserve, restore, and enhance in their natural ecosystems (when practical) all species of animals and plants that are endangered or threatened with becoming endangered.
- To perpetuate the migratory bird resource.
- To preserve a natural diversity of abundance of fauna and flora on Refuge lands.
- To provide an understanding and appreciation of fish and wildlife ecology and man's role in his environment and to provide Refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife to the extent these activities are compatible with the purpose(s) for which the Refuge was established.

National Wildlife Refuge System Mission:

The mission of the System is “to administer a national network of lands and water 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 utilized to manage a portion of the Refuge's croplands. Cooperative farming and use of chemicals including use of genetically modified crops (GMCs) for weed and invasive species control are combined together in this determination because of the extremely close association of the uses and the unavoidable necessity of weed control in agricultural activities and practices. Farming on the Refuge is an activity aimed at the production of adequate foods to maintain a large body of migratory waterfowl which use the area in migration and wintering periods with many other wildlife species benefiting from the same croplands.

(b) Where is the use conducted?

Cooperative farming is currently carried out with six local farmers on approximately 2,754 acres (13%) of the Refuge to provide various crops of green-browse (wheat, rye, etc.), hard grains or similar food (corn, soybeans, Japanese millet, etc.), and to some extent soil-improving plants (alfalfa and/or other legumes, etc.) for wintering and resident waterfowl and migratory birds.

(c) When is the use conducted?

The planting, growing and harvesting season is generally from February 15 through October 31.

(d) How is the use conducted?

The farmers use their own equipment and fuel to prepare the ground, plant the fields, apply herbicide and pesticide, and harvest a percentage of the crop. The remaining crop (approximately 25 percent) is left in the field as food for waterfowl and other wildlife. All farming is done in accordance with an approved Refuge farming plan and is outlined under the terms and conditions of an annual Cooperative Farming Agreement, which specifies crop types and amounts to be left for wildlife use.

Agriculture chemicals are used sparingly under close scrutiny of Refuge staff and must be approved through the Pesticide Use Proposal process, before application. GMCs including Roundup Ready Soybeans, Roundup Ready Corn and Liberty Link Corn are currently used for the most part across the entire acreage of the Cooperative Farming Program.

Glyphosate-tolerant ("Roundup Ready"), corn and soybeans have been genetically modified through insertion of a gene that allows the plant to tolerate applications of glyphosate. When applied according to label instructions, glyphosate will kill all actively growing plants, except for those that have been genetically modified to tolerate that herbicide. Glufosinate-tolerant (Liberty Link) corn has been genetically modified in the same manner which allows the plant to tolerate applications of glufosinate ammonium.

(e) Why is this use being proposed?

The purpose of cooperative farming and the invasive weed control effort is the efficient, effective, and concentrated production of food plants and increased habitat values for wildlife species. All farming and chemical use will continue to be conducted in such a way as to minimize impact on non-farmed areas of land or water. When such grain and forage production is no longer useful or is overshadowed by other methods, farming on the Refuge will be phased out as rapidly as practical. Invasive weed control efforts will also be curtailed as undesirable plants are eradicated in the effort to improve wildlife habitat.

Availability of Resources:

There is adequate base funding and staff to ensure compatibility and to administer and manage the use of the cooperative farming program at its current level. The cooperative farming program requires a considerable amount of staff time (approximately one-third of a FTE) to ensure annual agreements are developed and signed, farming activities are monitored to ensure compliance with the annual agreement, and Pesticide Use-Proposals and Pesticide Use-Reports are completed and approved.

Anticipated Impacts of the Use:

Short and Long-term Impacts:

The cooperative farming program impacts Refuge lands by producing vital food (green-browse, grain, etc.) and cover for waterfowl during the wintering season, as well as food and cover for a diverse group of wild species and game species such as deer and turkey. The farming program also exposes Refuge lands to chemicals, increased erosion, and the resultant runoff into Refuge lakes, rivers, and wetlands. To help minimize potential impacts, the Service requires that chemicals used on Refuge lands are approved for use through the annual Pesticide Use Proposal (PUP) process. The process includes application requirements and varying levels of review depending upon the nature of the chemical and how it is applied. The process is meant to ensure that all pesticides considered for use on Refuges are evaluated for their; 1) toxicity of active ingredient(s) and concentration in the product; 2) toxicity as applied in the environment (application rate per acre); 3) persistence in the environment (half-life); 4) potential for lateral or downward movement on/in soil, and (5) specific site conditions.

In addition, Cooperative Farming Agreements are prepared annually with each cooperative farmer. The agreement specifies which crops will be planted, which pesticides have been approved for use on areas they farm, prohibited activities such as applying chemicals aerially without the Refuge manager's approval, and best management practices to reduce erosion and surface runoff into Refuge lakes, streams, and wetlands. The cooperative farming program is evaluated annually and ongoing monitoring is conducted to ensure that the conditions specified in the Cooperative Farming Agreement are being met and that the overall condition of the area is not being degraded.

Roundup Ready Corn/Soybeans and non-Bt Liberty Link Corn/Soybeans - If GM corn or soybeans were to hybridize with related wild species, transgenes that have been inserted into the GMCs may be transmitted along with the natural genes. The traits of the GM crops may be adopted by the next generation of resultant hybrids, persisting indefinitely in the wild. If these traits offer a competitive advantage such as herbicide resistance, the hybrids can become weedy or invasive. It appears that neither crop poses a serious risk because corn and soybeans have no wild or weedy relatives with which they can more easily interbreed within the United States. In addition, soybeans are self-pollinating, so the risk of transgenic pollen moving to nearby weeds is small.

Cumulative Impacts:

Farming only occurs on lands that have been previously farmed. The impacts described above are minimal and short-term. The proposed action is not expected to incrementally add to any other state, private, or federal actions that are proposed or currently occurring in the area. The proposal benefits numerous wildlife species and supports hunting, wildlife observation, wildlife photography, environmental education, and interpretation. This

activity does not significantly impact other Refuge activities or wildlife populations locally or nationwide.

Public Review and Comment:

This compatibility determination is available for public review and comment. The Service will consider all substantive comments received.

Determination (check one below)

Use Is Not Compatible

Use Is Compatible With the Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are necessary to ensure that cooperative farming remains a compatible use:

1. Permittee is required to comply with the annual Cooperative Farming Agreement.
2. Cooperative Farming Agreements will be written so that the use of Bt Corn or other GMC's with insecticidal traits genetically inserted are prohibited until more in depth risk assessments associated with their use on the Refuge can be carried out.
3. Refuge staff will monitor farming activities and invasive weed control efforts to ensure that impacts on Refuge lands remain minimal and that all special conditions included in the agreements are complied with.

Justification:

The proposed uses do not materially interfere with, or detract from Refuge goals, objectives, or Refuge management activities. The uses promote Refuge goals, objectives, and management activities by improving habitat and providing a food resource for waterfowl, migratory birds and other resident wildlife such as deer and turkey. The Refuge's cooperative farming program is consistent with local practices, and the program minimizes crop depredation on adjacent privately-owned lands. The proposed uses promote the fulfillment of the Refuge's establishing purposes and contribute to the achievement of the National Wildlife Refuge System Mission.

Signature: Refuge Manager _____
(Signature and Date)

Concurrence: Regional Chief _____
(Signature and Date)

Mandatory 10- year Re-Evaluation Date (for uses other than the six-priority wildlife dependent public uses): 2021