

## **Final Compatibility Determination**

**Use:**

Agriculture – Cooperative Farming Activities

**Refuge Name:**

Bitter Lake National Wildlife Refuge

**County:**

Chaves County, New Mexico

**Establishing and Acquisition Authority(ies):**

The Bitter Lake National Wildlife Refuge (Bitter Lake NWR) was established on October 8, 1937, by Executive Order 7724 and is managed under provisions of the Migratory Bird Conservation Act (16 USC 715d), the Refuge Recreation Act (16 USC 460 k-1), Fish and Wildlife Act of 1956 (16 USC 742f(a)(4) and 16 USC 742f (b)(1)) and The Wilderness Act of 1964 (PL 88-577).

**Refuge Purpose(s):**

1. The Refuge will be used “as a refuge and breeding ground for migratory birds and other wildlife” (Executive Order 7724, October 8, 1937).
2. The Refuge shall be administered “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (16 USC 715d, Migratory Bird Conservation Act).
3. The Refuge is “suitable for – (1) incidental fish and wildlife oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ...” (16 USC 460 k-1, Refuge Recreation Act). “... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ... “(16 USC 460k, Refuge Recreation Act [16 USC 460k-460k-4], as amended).
4. The Refuge shall be administered “for the development, advancement, management, conservation, and protection of fish and wildlife resources” (16 USC 742f(a)(4) and “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 USC 742f (b)(1) (Fish and Wildlife Act of 1956).
5. The Refuge shall manage portions of the Refuge “to secure for the American people of present and future generations the benefits of an enduring resource of wilderness...wilderness areas....shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness” 16 USC 1131 (The Wilderness Act of 1964).

**National Wildlife Refuge System Mission:**

The mission of the 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.

**Description of Use:**

**(a) What is the Use?**

Cooperative farming is utilized to manage a portion of the Refuge's croplands. Farming activities include cultivation, cover cropping, haying, mowing, and chemical spraying for weeds and pest insects. The Bitter Lake NWR has administered a cooperative farming program since 1995.

**(b) Where is the use conducted?**

Cooperative farming on the Bitter Lake NWR is conducted on the South Tract Unit, or former J.P. White Farm (Attachment 1). Bitter Lake's farming program includes nearly 500 farmable acres.

Approximately 330 acres of these acres are currently being cultivated. Approximately 67 acres are currently being cultivated in corn, 74 acres in barley/winter wheat, and 182 acres in alfalfa (Attachment 2). The location of the corn crop is to be determined by both the cooperator and the Refuge manager.

**(c) When is the use conducted?**

The cooperator is allowed to conduct all farming activity on the Refuge between February 1 and November 15 of each year.

**(d) How is the use conducted?**

In general (upon approval of Refuge management), the cooperator's share of fields may be cultivated in alfalfa, corn, hegari, barley, winter wheat, sorghum or other small grains and the Refuge's share will be cultivated in corn, barley, winter wheat, sorghum or other small grains. The Refuges share of crops in 2010 is as follows: a "time share" of alfalfa and barley or winter wheat and the entire 67 acres of corn as listed above. Unless otherwise agreed upon by both parties, no fewer than 40 acres of grain will be grown for the Refuge each year. The cooperative farmer is responsible for all farming activities except for cutting the Refuge's corn acres which is handled by Refuge staff.

The need for chemical fertilization on the Refuge is reduced through the use of crop rotation. Crop rotation is also a beneficial component in the Refuge farming program utilizing alfalfa for nitrogen fixation. The average prescription of six years of alfalfa followed by six years of corn or other grain is generally followed by cooperators. Under the current Cooperative Farming Agreement, approximately 56 percent of the farmed acres are planted in alfalfa and 44 percent is in either corn or hegari/sorghum (winter cropped with winter wheat or barley). In order to provide additional carbohydrate rich corn for waterfowl and sandhill cranes, the Refuge and the

cooperator have agreed to increase corn acreage by approximately 10 acres per year in lieu of barley acres until the end of Cooperative Farming Agreement in 2012.

The cooperator may be allowed to haze birds from fields (primarily after February 1 each year) if it is determined by both the cooperator and the Refuge manager that heavy grazing is likely to result in total crop loss.

Integrated Pest Management practices are implemented on the Refuge to control plant pests. The cooperator uses some chemical herbicides to control pests, although chemical application is limited to prevent negative effects to non-target plants, water quality, insects or wildlife using Refuge farmed land. A variety of practices such as the use of Ultra Low Volume chemicals, mowing, cover cropping to suppress weed outbreaks, assessment of treatment options, evaluation of chemical benefits versus negative impacts, alternating herbicides chemistries, and early detection/treatment are used when and where possible, to control pests with reduced chemical inputs. In addition, field scouting is required for possible natural control agents and Management Action/Economic Thresholds of pests species and chemicals are only applied if/when the conditions of such thresholds are reached or exceeded. All chemicals used by the cooperator must be approved through the Pesticide Use Proposal and Intra-service Section 7 process. Chemicals must be applied according to the stipulations listed in the Pesticide Use Proposals, label directions and any other applicable regulation or requirement. Service policy is intended to minimize chemical introduction on Refuge lands, therefore it is required to use the least amount of chemical that is effective for the intended purpose. Genetically modified crops are currently not approved for Refuge use.

**(e) Why is this use being proposed?**

Several crops including winter wheat, barley, corn, and alfalfa are raised each year for the benefit of wildlife. Winter wheat and barley provide a source of green browse during the fall and winter months for geese, cranes, deer and other wildlife. Corn provides a high carbohydrate grain used by sandhill cranes, waterfowl, songbirds, small/large mammals, and other wildlife during the colder months of winter. Alfalfa is used on the farm to improve soil health by means of nitrogen fixation and increased organic matter while providing some loafing/browsing areas for wintering geese and cover for upland birds.

The cooperator is also permitted to raise a summer crop of hegari/sorghum. This cover crop suppresses the growth of summer weeds and reduces the need for chemical weed control on those acres that will be planted with barley or winter wheat for wildlife use during the winter.

**Availability of Resources:**

Adequate Refuge employees are available to manage the cooperative farming program and funding is typically provided through the Refuge base budget. Cultivation, planting, weed management and certain maintenance and repair activities are funded and conducted by the cooperator. Approximately 30 Refuge staff hours are necessary for mowing of the Refuge's share of the corn crop. Equipment maintenance requires an additional 20 hours. Approximately 100 staff hours at a cost of \$3,200 are spent monitoring migratory birds and invasive species on the farm. Station fuel and equipment repairs costs usually average about \$300 per year,

however, major repairs (e.g. complete well replacements) have cost the Refuge over \$50,000. The amount of time it takes to compile Cooperative Farming Agreements, Pesticide Use Proposals, Intra-service Section 7 Consultations and perform the general program administration is approximately 80 staff hours each year.

The cost share portion of the current agreement calls for the cooperator to be responsible for all maintenance, repair and equipment replacement (MRE) bills associated with the farming program up to a limit of \$8,000 each year. In return, the refuge pays up to \$8,000 in electrical energy pumping costs each year. Energy costs in excess of \$8,000 each year are the responsibility of the cooperator. Additionally, the cooperator is responsible for all equipment, fuel, seed, fertilizer and pest control costs.

### **Anticipated Impacts of the Use:**

#### Short and Long-term impacts

Farming activities, including cultivation, cover cropping, mowing, and haying, on the Refuge are directly related to and support the purposes for which the Refuge was established. Cooperative farming will result in short-term disturbances and long-term benefits to both resident and migratory wildlife using the Refuge. Short-term impacts will include disturbance and displacement of wildlife due to farming equipment operation. Positive long-term benefits result in providing habitat/high energy food for waterfowl and cranes and resident wildlife such as deer, while minimizing crop depredation on neighboring farms. Winter wheat and barley provide a source of green browse during the fall and winter months for geese, cranes, deer and other wildlife. Corn and mature sorghum provide a high carbohydrate grain used by sandhill cranes, waterfowl, songbirds, small/large mammals, and other wildlife during the colder months of winter. Alfalfa is used on the farm to improve soil health by means of nitrogen fixation and increased organic matter while providing some loafing/browsing areas for wintering geese and cover for upland birds. These crops provide food to support upwards of 20,000 lesser sandhill cranes and 20,000 snow geese that call Bitter Lake their winter home.

Chemical use is planned through pesticide use proposals to prevent or limit acute or chronic adverse effects to wildlife and other species, including sensitive threatened or endangered species. Cover cropping is used to suppress the growth of summer weeds and reduces the need for chemical weed control thus minimizing impacts from herbicides and pesticides. Some disturbance to ground nesting birds may result from the harvesting and haying operations. However, an abundance of more suitable nesting habitat exists adjacent to the croplands and elsewhere on the Refuge. Also, mitigation is provided by the fact that the croplands provide highly desirable grains, prey insect producing vegetation and the only moist vegetative feeding habitat during periodic droughts.

#### 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:**

A draft of this CD was released for a 30 day public review period, which ended December 5, 2010. Copies of the Draft CD were provided in the Bitter Lake NWR office and online at the National Wildlife Refuge System Southwest Region Division of Planning website. Public Notices were posted at the Refuge Visitor Center, Roswell City Library, BLM Office (Roswell), and New Mexico Game & Fish Office (Roswell) and distributed to all media outlets in New Mexico. A letter was also sent out to interested parties in the region informing them about the draft document and soliciting their input. Hard copies of the CD were picked up by the New Mexico Game & Fish and the New Mexico Wilderness Alliance. A copy of the CD was also mailed to the current farm cooperator. No comments were received during the 30-day comment period which ended on December 5, 2010.

**Determination (check one below):**

- Use is Not Compatible
- Use is Compatible with Following Stipulations

**Stipulations Necessary to Ensure Compatibility:**

The annual issuance of a cooperative farming agreement that includes special conditions for conducting farming activities, along with routine inspections of the fields to insure compliance with the terms of the agreements, will ensure that compatibility is maintained. Service policy, directives and instructions in the Refuge Manual require reporting on farming, chemical weed management and haying activities.

**Justification:**

The cooperative farming program on the Bitter Lake NWR supports the refuge purposes by providing high-energy grain and forage for wildlife and by contributing to a diversity of habitat types. Approximately 1,000 Canada geese, 20,000 lesser sandhill cranes, 20,000 snow geese and/or Ross' geese, 24,000 ducks and various numbers of other migratory birds utilize Bitter Lake NWR as a wintering area from October through March. These groups of birds regularly utilize the refuge farm during this key time of migration. Refuge croplands supplement natural food sources and provide undisturbed/safe areas where wintering waterfowl can forage. Mule deer and other resident foragers directly benefit from refuge farming practices as well as a variety of other species such as raptors, insect eaters, small mammals and other wildlife. Haying activities associated with the farming program provide beneficial open areas adjacent to other habitats for wildlife feeding and resting/roosting, retarding encroachment by woody species such as non-native salt cedar, increasing plant tillering, selecting for palatable new growth and removing certain undesirable, rank, and invasive vegetation.

Cooperative farming on the refuge is consistent with local practices and is accomplished on land suitable for such management. Such management is consistent with the traditional use of the area as it has been farmed since 1885. The cooperative farming program greatly reduces the budgetary and manpower requirements that would be needed if the work were to be performed by refuge staff. The refuge farming program minimizes crop depredation on surrounding area lands, thus preventing economic loss to private landowners.

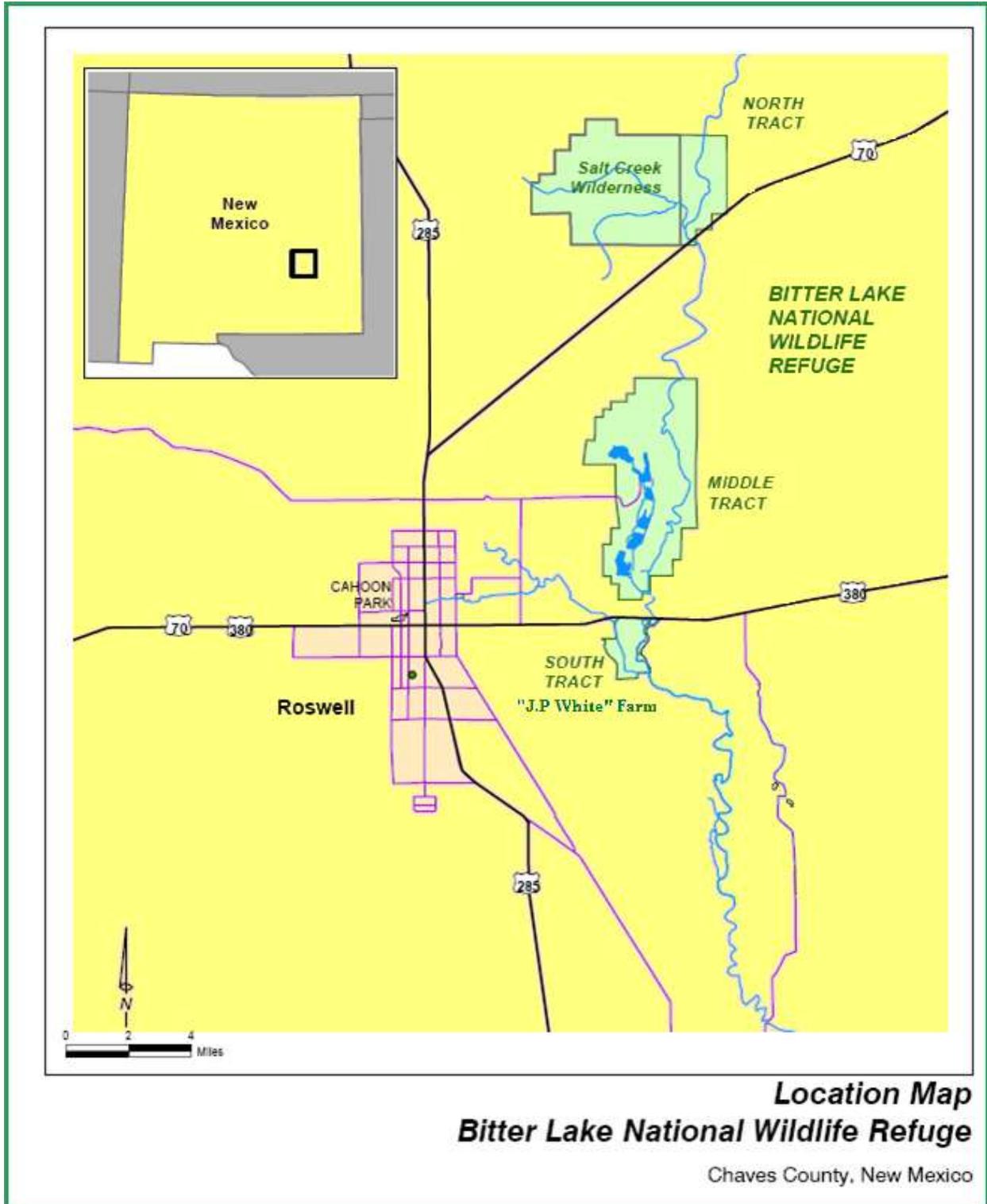
**Signature:** Refuge Manager

 12/14/10  
(Signature and Date)

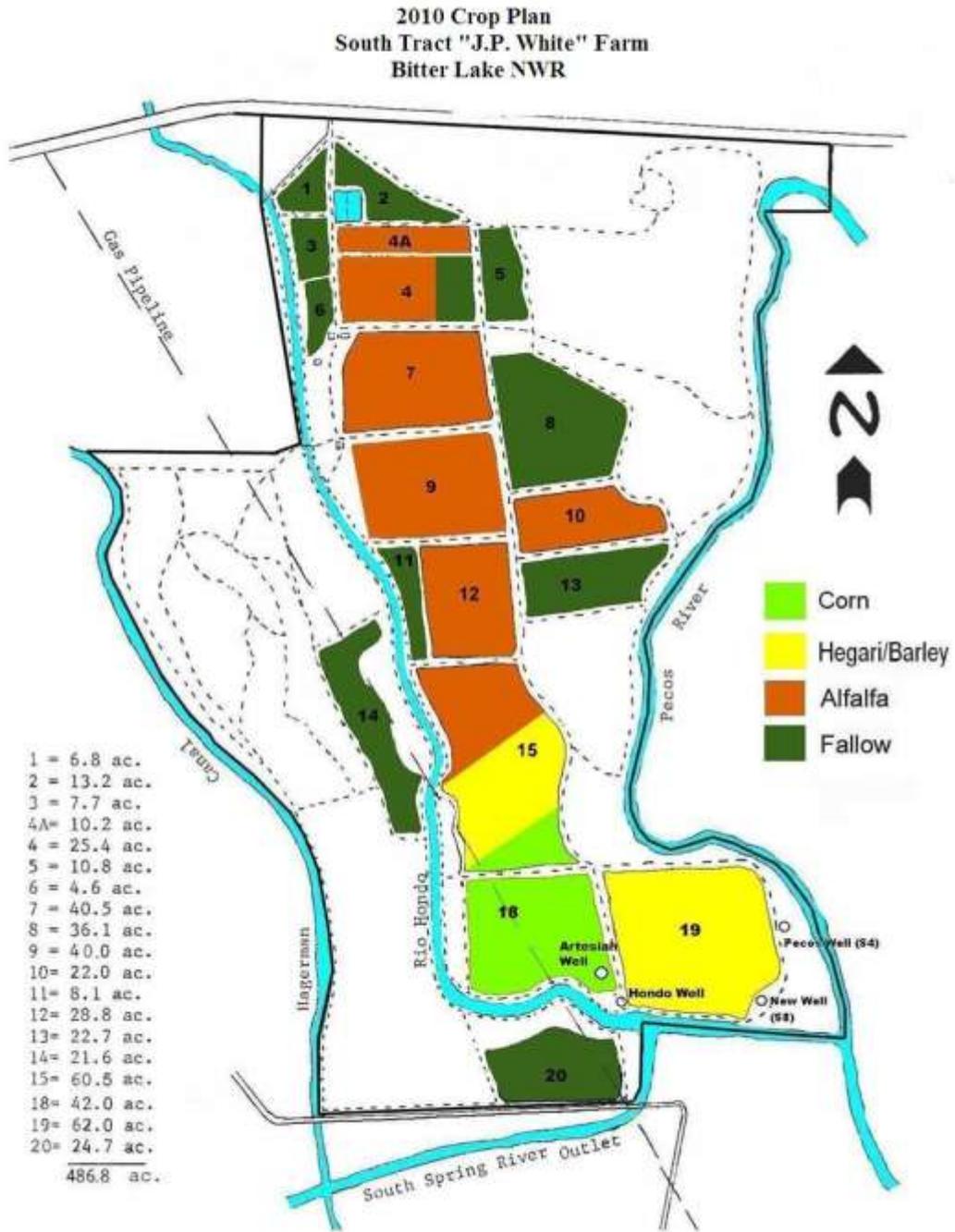
**Concurrence:** ~~Acting~~ Regional Chief

 12/21/10  
(Signature and Date)

**Mandatory 10-year Re-Evaluation Date (for uses other than the six-priority wildlife dependent public uses):** December 2020



Attachment 1: Location Map



Attachment 2: Crop Plan