DRAFT SPORT HUNTING PLAN

UNITED STATES FISH AND WILDLIFE SERVICE

CROSS CREEKS NATIONAL WILDLIFE REFUGE

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I. INTRODUCTION

Cross Creeks National Wildlife Refuge (Refuge or NWR) was established by Public Law 83-780, Senate Document No. 81, and Public Land Order 4560, to mitigate the loss of waterfowl habitat at Kentucky Woodlands National Wildlife Refuge. This habitat loss was a result of the Barkley Dam Project authorized on September 3, 1954. A Memorandum of Understanding, for the development of the Refuge, between the Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers (USACE) was signed on September 9, 1962. A final transfer of mitigation lands from the USACE took place on January 31, 1967.

The purpose of the Hunt Plan revision is to update the 1984 Sport Hunting Plan for Cross Creeks NWR (USFWS 1984). The 1984 Hunting Plan was last amended in 2007 to allow the hunting of resident Canada geese (USFWS 2007). The 2007 amendment and accompanying EA only addressed the hunting of resident Canada geese. This update of the 1984 Hunting Plan is being amended and updated with new information, to clarify the harvest of species open for hunting under State seasons (i.e. spring squirrel and muzzleloader deer seasons), and the incidental take of coyote and beaver during any regular sanctioned hunt on Cross Creeks NWR. Although the 2009 Cross Creeks NWR CCP does not specifically mention spring squirrel season, muzzleloader deer season and the incidental take of coyote and beaver during any regular sanctioned hunt, the 1984 Hunting Plan does include those species specifically.

The Refuge contains 8,862 acres, stretching 12 miles on either side of the Cumberland River between Dover and Cumberland City, Tennessee (Figure 1). The river divides the Refuge, creating a north side and a south side. The refuge is on the middle transition portion of Lake Barkley that was created by the inundation of the Cumberland River by Barkley Dam. USACE operates Lake Barkley primarily for flood control, hydropower, and navigation, as well as secondary purposes of recreation, water quality, water supply, and fish and wildlife habitat. The Refuge predominately consists of open water (1,745 ac), forest/shrub (5,284 ac), and agriculture (1,343 ac) habitats, creating a mosaic of wildlife-rich habitats (USFWS, 2015) (Figure 2).

Cross Creeks NWR was established to provide feeding and resting habitat for migratory birds in the Tennessee-Kentucky portion of the Mississippi flyway, with an emphasis placed on wintering waterfowl. Objectives are achieved through a habitat management program involving water management within sixteen waterfowl impoundments and two deep-water reservoirs, as well as food production through managing approximately 1,400 acres of agricultural land and 200 acres of moist-soil habitat. The cooperative farming program leaves unharvested a portion of the crops grown to provide a large portion of the food for the waterfowl (USFWS, 2015).

The establishing and acquisition authorities for Cross Creeks NWR include the Migratory Bird Conservation Act (16 U.S.C. 715-715r) and Fish and Wildlife Coordination Act (16 U.S.C. 661-667). These documents state that the refuge:

1. “...[be] for use as an inviolate sanctuary, or for any other management purpose, for migratory birds”
2. “…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, ...”

In addition, Public Land Order 4560 identified the purposes of the refuge to be “...to build, operate and maintain sub-impoundment structures; produce food crops or cover for wildlife; to regulate and restrict hunting, trapping and fishing and to otherwise manage said lands and impoundment areas for the protection and production of wildlife and fish populations ...” (Public Land Order 4560, 1962).
Figure 1  Cross Creeks NWR Vicinity Map
Figure 2  Cross Creeks NWR General Habitat Types

Cross Creeks NWR
General Habitat Types

Habitat
- agriculture
- early successional
- facility
- forest/shrub
- moist-soil
- open water
- pine plantation
II. CONFORMANCE WITH STATUTORY AUTHORITY

The Refuge Recreation Act of 1962 (16 U.S.C. 460K) authorizes the Secretary of the Interior to administer refuges, hatcheries, and other conservation areas for recreational use. The Refuge Recreation Act requires 1) that any recreational use permitted will not interfere with the primary purpose for which the area was established; and 2) that funds are available for the development, operation, and maintenance of the permitted forms of recreation.

The National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57) amends the National Wildlife Refuge System Administration Act of 1966 in a manner that provides an “Organic Act” for the National Wildlife Refuge System. The Act serves as comprehensive legislation that provides guidance concerning how National Wildlife Refuges should be managed and used by the public. Three key components of the Act are particularly relevant to this Sport Hunting Plan. The first is the recognition that wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation, when determined to be compatible, are legitimate and appropriate public uses of the Refuge System. The Act goes further in stating that these compatible wildlife-dependent recreational uses are the priority general public uses of the Refuge System. A second important component of the Act is the concept that each refuge shall be managed to fulfill the mission of the National Wildlife Refuge System as a whole, as well as the specific purpose(s) for which that refuge was established. A third concept that is evident throughout the Act is the need for cooperative federalism or, in other words, constructive coordination between State natural resource agencies and the National Wildlife Refuge System managers. Cooperation with States is particularly evident in one specific section of the Act where it states that regulations permitting hunting or fishing of fish and resident wildlife within the System shall be, to the extent practicable, consistent with State fish and wildlife laws, regulations, and management plans.

This concept of cooperative federalism is evident in the long history of cooperation and coordination between Cross Creeks NWR and the Tennessee Wildlife Resources Agency (TWRA), especially concerning hunting and fishing regulations. The Service recognizes that TWRA is the authority in the state of Tennessee regarding the population status and sustainability of resident wildlife, including the species that are hunted on Cross Creeks NWR. Managers at Cross Creeks NWR strive to provide hunting opportunities that are within the State season framework. Those hunts that are outside of the State framework (e.g. first youth hunt and quota modern gun deer hunt) are implemented only after coordination and approval of TWRA.

Recreational hunting authorized by appropriate regulations should not interfere with the primary purpose for which the Cross Creeks NWR was established. This determination is based upon the completion of a Compatibility Determination (CD). A CD for hunting was prepared in association with the Cross Creeks National Wildlife Refuge Comprehensive Conservation Plan (CCP) (USFWS, 2009).

This Sport Hunting Plan supports the priority public use provisions of the NWRSIA, Executive Order No. 13443, and Department of the Interior Secretarial Order No. 3347. Hunting as specified in this plan is a wildlife-dependent recreational use and the law states that as such, it “shall receive priority consideration in national wildlife refuge planning and management.” The
Secretary of Interior may permit hunting on a refuge if it is determined that such use is compatible with the Refuge purpose for which it was established. The hunting program would not materially interfere with or detract from the fulfillment of the purposes of the Refuge or mission of the System (603 FW).

Public hunting on Cross Creeks NWR is an appropriate and compatible form of wildlife oriented public recreation, which is compatible with the purpose for which the Refuge was established. Hunting, being a viable management tool when used wisely, often prevents the overpopulation of species within a given habitat community and can provide for greater wildlife diversity. In this way, the environment is managed for the benefit of a variety of wildlife. The hunting program is designed to minimize potential conflicts with Refuge purposes. The species hunted on the Refuge are white-tailed deer (deer), Eastern wild turkey (turkey), gray and fox squirrels (squirrel), and resident Canada goose (resident goose). This Sport Hunting plan also analyzes the incidental take of coyote and beaver during a scheduled refuge hunt for the species listed in this plan with any weapon legal for that hunt.

The Service lacks an accurate means for quantifying the number of refuge visitors due to the multiple access points to the refuge. The Service estimates that 136,000 visitors come to Cross Creeks NWR each year. The Service also estimates that the refuge receives approximately 1,700 hunter visits (one hunter per day is a hunter visit (from RAPP Database 2016)). Again this is an estimate and the Service is working to better quantify this number. Annual hunt administration costs including salary, facility maintenance, sign maintenance, brochures, etc. total $46,000, as listed in the CD (USFWS, 2009). Less than one full time employee equivalent is expended in conducting hunt-related activities. The revenue from hunting permit sales will offset some of the costs. Annual hunting permit sales for the Refuge are estimated at $5,500. Funds are available to meet the conditions set forth in the Refuge Recreation Act. Funding is anticipated to continue to be sufficient to maintain the hunting program in the future. In summary, funds are available to continue the existing hunt program and hunting should not interfere with the primary purposes for which the Refuge was established.

### III. STATEMENT OF OBJECTIVES

**Goals of the National Wildlife Refuge System**

The following Refuge System goals help guide the development of Cross Creeks NWR CCP (USFWS 2010a) and the administration, management, and growth of the Refuge System:

A. Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered.

B. Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
C. Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.

D. Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretation).

E. Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

**Refuge Vision Statement**

The vision statement below qualitatively describes our desired future character of Cross Creeks NWR. It was developed during the 2009 CCP planning process with input from our partners and the public, and it guides priorities at the refuge (USFWS 2009):

*Cross Creeks NWR was established alongside Lake Barkley Reservoir in 1962 on land transferred from the Corps. It was set aside as part of a mitigation agreement between the Service and the Corps for the inundation of wetlands habitat on the former Kentucky Woodlands National Wildlife Refuge after the construction of Barkley Dam and the inundation of Lake Barkley. The establishing purpose of the refuge was to provide an inviolate sanctuary and manage habitat for migratory birds. Subsequent statutes also mandate the refuge to manage wildlife and habitat in general and for public uses.*

*Over the foreseeable future, Cross Creeks NWR will continue its emphasis on managing habitat for waterfowl. The refuge will also expand its management activities to include other native birds and wildlife species. In addition, the refuge will strive to be a model for wise land stewardship, including management for all indigenous species of flora and fauna and the control of invasive plants and animals.*

*Cross Creeks NWR will also continue to serve the American people by expanding opportunities for compatible, wildlife-dependent recreation, such as hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation. An adequate law enforcement presence will be provided in order to protect the public and natural and cultural resources. Refuge staff will build on existing partnerships with other agencies and stakeholders in implementing this vision.*

**Refuge Goals and Objectives**

Goals describe the desired future condition of the refuge and provide a framework for what the refuge is trying to accomplish in adopting a HMP. The visitor services goal were developed earlier in the comprehensive conservation planning process which helped focus thinking about management actions. The goal outlined in the CCP is described below (USFWS 2009a).

**Visitor Services**
CCP Goal 4. *Provide the public with quality wildlife-dependent recreation and environmental education and interpretation that lead to greater understanding and enjoyment of wildlife and habitat and an interest in conserving them.*

The Improvement Act states that compatible wildlife-dependent recreational uses are the priority public uses of the Refuge System (e.g., hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation) and will receive enhanced consideration over the other general public uses. The Service will permit other uses only when they have been proven to be both appropriate and compatible (see 605 FW 1, General Guidance, and 603 FW 1, Appropriate Refuge Uses). In the refuge CCP, the Service developed objectives for providing compatible hunting on Cross Creeks NWR:

**CCP Objective 1-9: Game Species – Continue to allow managed, limited hunting for deer, turkey, squirrel, and resident Canada geese.**

**CCP Objective 4.2: Hunting - Continue to allow managed, limited hunting for deer, turkey, squirrel, and resident Canada goose.**

Biologically sound, compatible hunting is a legitimate activity and it is one of the six priority public uses to be allowed, when compatible, as outlined by the Improvement Act. However, there are times/periods when hunting on some sites will need to be curtailed due to lack of refuge personnel, safety reasons, need for sanctuary sites for certain wildlife, and lack of sufficient land acres.

The refuge provides numerous hunting opportunities for the public for resident wildlife species. Hunters have the opportunity to hunt squirrel, deer, turkey, and resident Canada geese. The refuge offers a wide range of deer hunting opportunities for those using archery, muzzleloader, and modern gun, as well as special opportunities for youth hunters with access available to most portions of the refuge.

Strategies include:

- Maximize hunter participation by increasing the number of quota gun hunt permits to approximately one permit /40 acres when populations are capable of providing a quality hunt including increasing antlerless harvest quota, creating additional zones to better disperse hunters.
- Continue with small game and turkey hunts within guidelines of TWRA and without access during critical periods (waterfowl migration periods).
- Use volunteers and/or students to operate refuge check stations during the quota hunts to collect data on 30-50 percent of the harvested deer including collection of Age-Weight-Antler data, determination of EHD, CWD, and other diseases of concern.
- Continue with current small game and turkey hunts.
- Continue to limit fall/winter hunt periods, so no activity occurs from November 15 to March 16 in key waterfowl areas.
- As State turkey seasons and bag limits become more liberal, the refuge should consider adopting the changes if they are compatible.
• Develop well-defined maps of refuge hunting areas particularly on the North Unit where boundary signs are routinely vandalized.
• Continue to monitor the gun quota hunts.
• Update the hunting brochure; train staff to ensure they are familiar with accounting, reporting, and other procedures, and provide outreach to the local community.
• To ensure accounting consistency, coordinate with Tennessee NWR on fee accounting, reporting, and collection process.
• Ensure that adequate and advanced notification reaches media and refuge neighbors concerning control and regulation of hunting (e.g., newspapers, radio stations, and cable stations).
• Ensure that refuge boundary is adequately posted on the north side and cooperate with neighbors to control and minimize trespass and potentially hazardous safety situations.
• Use available law enforcement officers to patrol north side during hunting openings.
• Continue to work closely with local law enforcement.
• Work with local hunt clubs, news media, and schools on hunter education and ethics.

Conducting a well-managed hunt program on Cross Creeks NWR would assist the refuge in meeting one of its primary objectives by offering the public with quality wildlife-oriented recreational programs that are compatible with the purposes for which it was established. The Service will continue to coordinate with the Tennessee Wildlife Resources Agency for all hunts and work to incorporate state seasons and bag limits when these do not conflict with refuge purposes. The special youth-only hunts provide a unique opportunity for the Refuge to introduce young hunters to the System and educate them on the importance of wildlife conservation. In fact, Congress, through the Refuge Improvement Act, directs refuges to provide increased opportunities for families to experience compatible wildlife-dependent recreation, particularly opportunities for parents and their children to safely engage in traditional outdoors activities such as hunting and fishing.

IV. ASSESSMENT

1. Compatibility with Refuge Objectives

Hunting is one of the six wildlife-dependent recreational uses prioritized by the NWRSIA. The Secretary of Interior may permit hunting on a refuge if it is determined that such use is compatible with the Refuge purpose for which it was established. The hunting program would not materially interfere with or detract from the fulfillment of the purposes of the Refuge or mission of the System (603 FW).

This Sport Hunting Plan achieves Refuge CCP Goal 4 and Objectives 1-9: Game Species and 4-2: Hunting by authorizing “managed, limited hunting for deer, turkey, squirrel, and resident Canada geese” (USFWS, 2009). Hunting on Cross Creeks NWR is limited to those species specifically listed in this plan and by the shortened fall hunting season due to the refuge closing for waterfowl sanctuary. Hunting supports several of the habitat management objectives outlined
in the CCP by reducing the detrimental impacts that high-density deer and resident goose populations can have on certain habitats. In addition, population management of all the hunted species on the Refuge will benefit the food resources intended for migrant and wintering waterfowl.

2. Biological Soundness

All Cross Creeks NWR public activities are designed to contribute to or be compatible with all refuge objectives. Cross Creeks NWR will continue to provide high quality, wildlife-oriented recreation to the general public and the opportunity to utilize a valuable renewable resource. A well-managed public use program will protect and preserve wildlife resources and habitats as well as maintain refuge resources by minimizing negative impacts and enhancing wildlife populations and habitat diversity.

The TWRA is responsible for the management of resident wildlife throughout the State and is a key partner to the refuge, especially in terms of ensuring biological soundness with respect to resident wildlife populations. TWRA has collected data to determine population levels and the overall health of species, such as deer and turkey. From this data, they set regulations that allow hunting at levels that maintain habitat and wildlife health. The Refuge coordinates with TWRA and follows their regulations as closely as possible.

White-tailed Deer

White-tailed deer populations in Tennessee were nearly exterminated by the 1940’s with an estimated population of less than 1,000 deer (Nichols 1978). Tennessee Wildlife Resources Agency’s (TWRA) deer restoration efforts, which ended in the 1980’s, drastically increased the population to over 600,000 deer, with over 160,000 annually harvested by hunters statewide (TWRA 2016a). TWRA’s Strategic Plan reports this expanding deer population has now exceeded the “social carrying capacity” and considers deer overabundant in many parts of the state (TWRA 2014).

TWRA has divided the state into five deer hunting zones with varying restrictions on antlerless deer harvest. The western half of the state is within Unit L. This unit possesses the most liberal regulations, allowing three antlerless deer per day throughout all seasons. The buck (antlered) harvest is restricted statewide to two per season (TWRA 2016b). The Refuge is located within Stewart County, which is in TWRA’s Unit L deer zone. The Stewart County deer harvest in 2015-16 season was 2,468, with the Refuge harvest reported at 179 (TWRA 2016a).

Through staff observations of crop depredation and browse lines along the forest edge, it is evident that deer are overabundant throughout the Refuge. They routinely cause damage to agricultural crops, significantly reducing productivity in some fields. A browse line within the woods is present in many locations. Deer population management on the Refuge is essential to maintain deer herd health, foster a productive farming program and protect natural habitats. Deer health is a great concern, with periodic Epizootic Hemorrhagic Disease (EHD) outbreaks occurring in the region. There are several public roads on and adjacent to the Refuge and deer-vehicle collisions are a human safety and private property concern.
Hunting is the primary factor of mortality in deer (Whitaker and Hamilton, 1998). With the absence of any significant large predator, the only feasible population control technique for the Refuge is the use of sport hunting. Hunting methods that remove female deer from the population are also essential when the herd is near or exceeding biological carrying capacity (Whitaker and Hamilton, 1998). Based on the habitat damage that occurs on the Refuge and the number of deer routinely observed feeding in the agricultural fields leaves Refuge staff to conclude that the population is at or exceeding the biological carrying capacity.

**Wild Turkey**

Like the white-tailed deer, wild turkey restoration in the United States has been one of the great wildlife management success stories. Turkey populations were at their lowest in the 1930’s with estimates ranging from 30,000 - 200,000 turkeys nationwide. Turkey population restoration through relocation efforts began in the 1930’s, but really did not get going strong until the late 1950’s. Restoration of the wild turkey is now considered complete with a nationwide population estimate of 6.2 million (NWTF 2014).

TWRA estimated the statewide turkey population to be in excess of 300,000 birds in 2012. The State does not conduct population surveys, but makes estimates based upon the harvest by county and the amount of suitable habitat within each county (TWRA 2012). The statewide turkey harvest for 2016 was 33,423, with 584 harvested in Stewart County and 13 taken on the Refuge (TWRA 2017). The 5-year average annual harvest on the Refuge since 2012 is 11 turkeys per year (TWRA 2017).

Harvest numbers for the state have seemed to stabilize, indicating that the population has reached the maximum level sustainable by the current available habitat. TWRA’s Strategic Plan reports that the turkey population is reaching overabundant levels in some parts of the state (TWRA 2014). It also appears that most southern states have also reached this point. Byrne, et al. (2015) noted that productivity data (poults per hen ratios) throughout the Southeast show a concerning downward trend, yet populations are increasing or stabilizing in most states. They reported that brood size remains stable, but the number of hens without broods has increased. Their hypothesis is that the populations are limited by quality nesting habitat and thus, are density dependent upon the availability of nesting habitat.

The Refuge supports a large population and suitable habitat is abundant. By following statewide seasons and regulations, the hunts on the Refuge are considered biologically sound. The annual harvest is minimal and since the harvest is predominantly male birds the impact on the population insignificant. Turkeys do consume some of the corn through the winter that is intended to meet waterfowl objectives. Hunter harvest nominally reduces some of this impact.

**Resident (Giant) Canada Geese**

In 1967, the FWS decided to establish resident flocks at Cross Creeks NWR, Wapanocca NWR, Holla Bend NWR, Yazoo NWR, Noxubee NWR, St. Marks NWR, and Eufaula NWR. Giant Canada geese were purchased from private breeders in Minnesota and Illinois and transplanted to
the refuges. Cross Creeks NWR received five pairs of geese in 1967. In 1970, six additional birds were relocated from Wapanocca NWR. During this period, ten nesting islands were constructed and the first goslings to reach flight stage followed in 1969. This was the beginning of the resident Canada goose flock on the Refuge. Generally, the numbers were small and did not affect Refuge operations and management objectives.

During the mid-1970's, the Tennessee Valley Authority (TVA) developed a propagation facility at Land-Between-the Lakes on Lake Barkley to produce giant Canada geese for stocking reservoirs throughout the Tennessee Valley. Their stocking program in concert with TWRA’s transplant program was a success. The flock grew rapidly and by the early 2000’s the resident population of giant Canada geese in Tennessee reached 66,700, exceeding TWRA’s spring population objective of 45,000 geese (USFWS 2012). As the resident goose population grew, so did the human/goose conflicts. In 1994, TWRA initiated the first September goose hunt in East Tennessee, resulting in a harvest of 408 giant Canada geese (USFWS 2012). The resident goose flock on the Refuge continued to increase through natural production, protection, and periodic releases by the TWRA and U.S. Department of Agriculture-Wildlife Services (USDA-WS) of nuisance geese from other areas of the state.

Canada geese are browsers, acquiring much of their food by consuming newly sprouted vegetation. Their feeding activity can cause significant damage in germinating agricultural fields and in establishing moist-soil vegetation. As the goose numbers increased, problems ensued on the Refuge with extensive crop depredation that affected the production of wintering waterfowl forage through the Cooperative Farming Program.

Efforts to trap and relocate Cross Creeks NWR nuisance geese were met with opposition from TWRA and USDA-WS. Through the concept of cooperation, meetings were held with all concerned agencies. A general agreement was reached in 1994, concerning the resident goose problem. One of the action items included in the agreement was for TWRA to propose an experimental September Canada goose hunting season; therefore, Cross Creeks NWR submitted an amendment to the approved hunting plan in 1995.

The TWRA experimental West Tennessee September Canada goose season proposal was not well received by TWRA’s governing body, the Tennessee Wildlife Resources Commission (TWRC). TWRC did not believe that the resident Canada goose population in and around the Kentucky Lake and Lake Barkley areas was sufficient to support hunting at the time. Their desire was for the population to continue to grow, thus the West Tennessee September Canada Goose hunting season was not implemented in 1995. It was not until 2002 that the TWRC approved a September Canada goose hunting season in West Tennessee. At that point, the Refuge’s resident goose population had grown to an estimated 600 geese. With several delays, the Refuge finally initiated its first September Canada goose hunt in 2005.

This resident Canada goose hunting season provides the Refuge a means to reduce crop depredation and increase public hunting opportunities. It is the intent of the Refuge to not function as a sanctuary during the September Canada goose season, because resident geese detracts from the refuge’s ability to provide the best possible wintering waterfowl habitat. However, since Cross Creeks NWR was acquired under the Migratory Bird Conservation Act no
more than 40% of the refuge will be open to Canada goose hunting. The Refuge September Canada goose season and regulations will fall within those set by TWRA and the FWS Migratory Bird Hunting Framework.

**Eastern Gray and Eastern Fox Squirrels**

The distribution of the gray squirrel is closely associated with that of the oak-hickory forests, from which comes their primary source of food through the fall and winter. The Eastern fox squirrel has a similar distribution, but it occurs further west into the prairie states inhabiting the oak groves. Densities of gray squirrels are higher in locations where forest cover is greatest, whereas the fox squirrel is more abundant in open woodlands interspersed with farmland. Fox squirrels seldom occur in closed canopy forests. Food resources change throughout the year with nuts and acorns (mast) being the mainstay in the cooler months and buds, fruits, and berries utilized when mast is absent. Grain crops, especially corn, can be a main part of the diet in locations where agriculture is abundant and mast is limited. The reproductive potential for squirrels is very high with two litters produced each year. Both of these squirrel species are abundant through much of their range in the appropriate habitats. Seasonal and year-to-year population fluctuations are common. Total mast failures have a greater impact on populations than any other controlling source. (Schwartz and Schwartz, 1959; Whitaker and Hamilton, 1998).

Gray and fox squirrels are abundant, particularly where suitable mast-producing hardwoods occur on the Refuge. Squirrels also utilize grain crops, especially corn, on the refuge and this food source is available to sustain them through the winter during poor mast years. Hunting has occurred on the Refuge since the mid-1980s with no visible impacts on the population of either species. Due to their high reproductive potential and the quantity of available habitat, densities of squirrels on the Refuge are sufficient to support hunting. There is a liberal squirrel season in Tennessee. TWRA states “Squirrel populations can withstand heavy hunting pressure, and are considered an underutilized resource in Tennessee” (TWRA 2006).

Research supports this position. Mosley (1969) found that 38 percent of the population of gray squirrels could be removed from the population by hunting and “not adversely affect recruitment in the exploited population, had no significant influence on the average annual mortality rate, and probably removed a segment of the population that would normally be lost to ‘natural losses’”. Nixon et al. (1975) reported that hunting could remove one squirrel per two acres and the population remains stable. They did feel that the combination of mast failures and high hunting pressure reduced the squirrel density, reporting a recovery rate (productivity) of 45% and a mortality rate of 80% during those situations. However, they noted that immigration of squirrels from surrounding areas subsequently replenished the population during good mast years.

The mortality associated with squirrel hunting is compensatory and will have no impact on the seasonal changes in the overall Refuge populations of the two squirrel species. Hunting pressure on the Refuge is very light relative to the pressure presented in the studies cited in the previous paragraph. Though there is no data for the Refuge, it is highly unlikely that the annual harvest rate on the Refuge even comes close to levels that would affect population sustainability. What little impact that occurs will be localized and quickly replaced by immigration and reproduction.
Therefore, hunting will have no long-term effects on populations of either of the squirrel species.

**Coyote and Beaver (incidental harvest)**

Coyotes depredate small mammals, songbirds and their nests, turkey and quail nests and any other animal they opportunistically encounter. When coyote numbers are high, local wildlife populations can be negatively affected. During the winter, the Refuge concentrates thousands of waterfowl and coyotes routinely take advantage of this prey source. Disturbance of waterfowl, while feeding in agriculture fields away from water, can be excessive.

Alteration of natural and man-made drainage patterns and damage to timber resources are probably the most common problems caused by beaver. Beaver dams impound water that can flood crops and timber; weaken roadbeds and associated structures; and reduce the flowage capacity of ditches, canals, and other water bodies. In addition, the blockage of water control structures inhibiting water management strategies is a major issue on the Refuge. Beaver also undermine levees, man-made dams, and roadbeds with their burrows.

Coyotes and beaver are considered a nuisance species in Tennessee and TWRA permits the year-round harvest without any limit (TWRA 2016b). Control of the populations of these species on the Refuge is a management strategy necessary to meet Refuge habitat management objectives. Control of beavers is addressed in the Nuisance Animal Management Plan and Environmental Assessment for the Tennessee NWR Complex (USFWS 2015b), which includes Cross Creeks NWR. This plan identifies the use of shooting and trapping to assist the Refuge with beaver population control. Hunters are allowed to take coyote and beaver while participating in any other legal hunt on the Refuge with the weapon allowed for that season. The number of coyote and beaver taken are expected to be minimal.

3. **Economic Feasibility**

Annual hunt administration costs including salary, facility maintenance, sign maintenance, brochures, etc. total $46,000, as listed in the CD (USFWS, 2009). Less than one full time employee equivalent is expended in conducting hunt-related activities. The revenue from hunting permit sales will offset some of the costs. Annual hunting permit sales for the Refuge are estimated at $5,500. Funds are available to meet the conditions set forth in the Refuge Recreation Act. It is anticipated that funding will continue to be sufficient to maintain the hunting program in the future.

4. **Relationship with other Refuge Programs**

The hunt program supports the primary mission of the Refuge to provide habitat for migratory birds, emphasizing wintering waterfowl. All the hunted species on the Refuge, at some level, compete with wintering waterfowl for the available foraging habitat. Deer and resident geese have the most significant impact to the agricultural crops that are managed for wintering waterfowl. Over browsing in forested habitats by a high-density deer population, can negatively impact nesting cover for several songbird species. Managing the populations of the species hunted on the Refuge will reduce impacts to habitats managed for migratory birds.
The Cooperative Farming Program has become essential to many refuges that manage for wintering and migratory waterfowl. The wetland habitat that was once abundant through much of the United States has dwindled because of human impacts on the environment. Since many species of waterfowl will readily feed on agricultural grain, farming has become a major management strategy for waterfowl on the wintering grounds to make up for this loss in wetland habitats. The quantity of food per acre produced by many crops far exceeds what natural habitats can provide. Thus, fewer acres of agriculture habitat can make up for the losses that have occurred. The Refuge utilizes cooperative farmers to produce most of the agricultural foods on a share basis. The waterfowl food provided by this program is at the expense of the farmer and essentially at no cost to the Refuge. With declining budgets and increasing costs, cooperative farming is essential in meeting waterfowl forage objectives. Refuge hunting enhances cooperative farming by reducing crop damage that results from excessive populations of some wildlife species, especially deer and resident geese.

Sport hunting enhances the visitor services program on the Refuge by providing opportunities for the public to participate in one of the priority public uses outlined in the NWRSIA. Few outdoor recreational activities can equal the degree of connection to the natural world as does hunting. The youth hunts that are so important to the Refuge enable parents or mentoring adults the perfect setting to introduce children to an activity that is an important component of our American heritage.

5. Recreational Opportunity

It is estimated the Refuge hunting program hosts approximately 1,700 hunter visits each year. The Service will take additional measures to better quantify the number of hunter visits. Again this is difficult due to the numerous access points and accurately determining the purpose of the refuge visit (i.e. hunting, fishing, wildlife observation, etc.). The Refuge provides as much hunter opportunity as possible within the constraints of the primary mission of wintering waterfowl management. Providing sanctuary is the most critical management tool utilized by the Refuge to achieve wintering waterfowl objectives. Most of the Refuge closes to all public use from November 15-March 15 to enhance waterfowl use by providing sanctuary. This closure limits hunter opportunity, but it is necessary to achieve waterfowl objectives. The refuge is open for the duration of the statewide spring wild turkey and spring squirrel seasons, including the statewide youth hunt for wild turkeys. However, hunting of resident Canada geese on the refuge is shorter than the statewide season in an effort to avoid accidental harvest or intentional illegal harvest of wood ducks and teal on the refuge. Furthermore, because the refuge closes to public access annually on November 15th for waterfowl sanctuary, the fall squirrel and white-tailed deer hunting seasons are shorter in duration on the refuge than that of the statewide seasons and that of other public hunting lands in the vicinity of the refuge. While not necessarily the intent of refuge management, the shorter duration of white-tailed deer hunting on the refuge serve as a buffer to potential overharvest of deer.
V. DESCRIPTION OF HUNTING PROGRAM

1. Areas of the Refuge that Support Populations of the Target Species

All of the hunted species, including beaver and coyote, are abundant and found within the appropriate habitat throughout the Refuge. Deer and turkey utilize a wide variety of habitats, with the exception of the open waters. Squirrels are closely associated with the forested habitats; with gray squirrels more abundant in the larger forested blocks and fox squirrels associated with the edge created by a forest/agriculture mosaic. Resident geese are found in the open water areas that are adjacent to farmland, mudflats and/or relatively open woody scrub.

2. Areas to be Opened to Hunting

The entire Refuge is open to hunting, except those areas specifically closed for various reasons. Some locations on the Refuge are closed to all hunting for visitor safety (e.g., Refuge Office and Visitor Center grounds); while other locations are closed due to the narrow refuge lands and close proximity to private dwellings (Figure 3). Only 40% of the Refuge is open to resident Canada goose hunting, due to the limitations required by the Migratory Bird Conservation Act. Thus, goose hunting is only permitted in hunt areas 1 and 2 on the south side of the Cumberland River (Figure 3).
Figure 3 Cross Creeks NWR hunting Map
3. Species to be Hunted, Hunting Periods, Hunting Access

The species hunted on the Refuge are white-tailed deer, wild turkey, gray and fox squirrels, and resident Canada goose. We allow the incidental take of beaver and coyote while participating in any other legal hunt on the Refuge.

For the most part, hunting periods for each species coincides with state seasons that are established by TWRA, with the primary exception that hunting of all listed species is closed during the Refuge waterfowl sanctuary period (Nov. 15-Mar. 15). During deer gun hunts (quota and youth hunts) additional closures for the other species and other weapon type deer hunts may apply. Typically, the deer quota gun hunts are outside the State gun season, due to the waterfowl sanctuary closure date. The resident goose season opens with the State season, but closes early prior the opening of the statewide early wood duck/teal season. Hunting hours and limits follow State regulations, but may be more restrictive. Annual variation in hunt periods, hunt methods, and limits may occur to adapt to changes in State regulations and/or Refuge management objectives or constraints. One specific variation from State regulations is the requirement that a doe be harvested on the Refuge prior to an antlered buck being harvested on a quota gun hunt. The intent of this regulation is to increase the doe harvest for better population control.

Public roads or Refuge maintained roads provide reasonable access to all hunting areas. Hunters are permitted to use boats for access and launching facilities are available on Lake Barkley and in some of the internal reservoirs and impoundments. ATVs are not permitted on Refuge lands.

4. Justification for the Permit

Each quota or non-quota hunter, age 17 and older, must have on his person a valid State hunting license and a Refuge Annual Hunting Permit. There is a $15.00 fee for the refuge annual hunting permit, which is valid for all quota and non-quota hunting. The permit fee is non-refundable and the permit is non-transferable. Refuge Annual Hunting Permits (Type 064) can be obtained from all TWRA licensing agents, online at www.gooutdoorstennessee.com, or by using TWRA’s mobile app. Goose hunters are required to have a federal duck stamp in addition to the Refuge Annual Hunting Permit and appropriate State licenses.

The annual hunting permit fees are used by the Refuge to offset the cost of administering the hunting program. Examples of how these funds are used to support the hunting program include printing hunting brochures, purchasing signage, and facility maintenance (e.g., roads and boat launching facilities). The quota hunt application fee is collected and retained by the vendor as their charge for conducting the computerized drawing.

There is an online application process to apply for quota hunts. Currently hunters apply for quota hunts through the refuge websites at http://www.fws.gov/refuge/Cross_Creeks. The deadline for application is in early August. Currently there is a $5.00 application fee charged with each online quota hunt application. This fee goes directly to the vendor to cover the cost of conducting the online drawing on behalf of the refuge. The costs of the hunting permit and the quota hunt application fee are subject to change. The methods of purchase of the permit or the quota hunt application process may also change, due to unforeseen circumstances. Any changes
to the permit and application costs or processes will be provided to the public on the Refuge website and in the annual hunting brochure.

5. Consultation and Coordination with the State

As stated previously in the Introduction section, Cross Creeks NWR has a long history of cooperation with the Tennessee Wildlife Resources Agency, especially concerning hunting and fishing regulations. We recognize that TWRA is the authority in the state of Tennessee regarding the population status and sustainability of resident wildlife, particularly those species that are hunted on Cross Creeks NWR. Managers at Cross Creeks strive to provide hunting opportunities that are within the State season framework. Each year Refuge hunting regulations are submitted to TWRA for their review and inclusion in their Annual Wildlife Management Area Regulations Proclamation. Refuge hunting seasons, hours, limits, methods follow State regulations, as much as possible. Those hunts that are outside of the State framework include the first youth hunt and quota modern gun deer hunt and are implemented only after coordination and approval of TWRA. TWRA fully supports the refuge hunt programs and encourages the Service to provide as much opportunity as possible.

6. Law Enforcement

Tennessee NWR Complex Refuge law enforcement officers primarily carry out the enforcement of hunt regulations. Occasionally officers from nearby refuges are called to assist. Refuge Officers provide for visitor safety and compliance during refuge hunts. FWS Officers work closely with TWRA enforcement officers to ensure compliance with refuge and State hunting regulations and to address any conflicts with adjoining landowners during refuge hunts.

7. Funding and Staffing Requirements

Annual hunt administration costs including salary, facility maintenance, sign maintenance, brochures, etc. total $46,000, as listed in the CD (USFWS, 2009). The updated 2017 CD has an estimated funding and staff cost of $9,500. This estimate is based upon better reporting of time spent on hunting related activities. Less than one full time employee equivalent is expended in conducting hunt-related activities. The revenue from hunting permit sales will offset some of the costs. Annual hunting permit sales for the Refuge are estimated at $5,500. Funds are available to meet the conditions set forth in the Refuge Recreation Act. It is anticipated that funding will continue to be sufficient to maintain the hunting program in the future.
VI. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER OBJECTIVES

1. Biological Conflicts

Threatened and Endangered Species

Least terns, piping plovers, and red knots potentially occur on the Refuge during spring and fall migration periods. Since hunting occurs during these periods, it is possible that a hunter will disturb these species. Occurrences of any of these birds on the Refuge are rare and any disturbance that may occur will only be temporary and unlikely to have any lasting impact.

Indiana bat, gray bat, and northern long-eared bats may occur on the Refuge. It is possible that hunting activities could cause some minor disturbance. It is unlikely that any disturbance will have any lasting impacts.

The remaining federally listed species are freshwater mussels (pink mucket pearly mussel and orangefoot pimpleback mussel). Hunting should not have any effects on these species.

Nesting Bald Eagles

Two active bald eagle nests occur on the Refuge and several others are located on private land adjacent to the Refuge. Nesting is initiated during the late winter when there is no hunting on the refuge. However, disturbance is possible during the spring turkey season, which begins prior to the eaglets fledging. The vicinity around one nest is in an area closed to all public access, including hunting. The other nest is in a remote location that is accessible only by water and turkey hunting in this area is highly unlikely. The number of bald eagle nests in this region has greatly increased over the last few decades. Disturbance from hunting has not appeared to have any significant negative impact on the expansion of the local bald eagle nesting population.

Migrating and Wintering Waterfowl

The fall migration of waterfowl to Cross Creeks NWR begins with the arrival of blue-winged teal in early September. Historically, the earliest migrant Canada geese would appear in late September, but this is now a rare occurrence. The wintering waterfowl population will slowly build through the early fall and reach between 5,000-10,000 ducks and geese by mid-November. At that point, the Refuge implements the sanctuary closure that prohibits public access to most of the Refuge lands to provide sanctuary for waterfowl populations that typically range from 40,000 to 60,000. All fall hunting activities also cease prior to November 15. By ending hunting on November 14, this activity causes minimal disturbance to the waterfowl wintering on the Refuge. Most migrant waterfowl have left the Refuge by the time spring turkey season opens.
The statewide resident Canada goose season runs from September 1-15. However, this hunt is closed on the Refuge the day prior to the opening of the early wood duck/teal season. The purpose of this early closure of the goose hunt is to reduce the potential that a hunter shoots a duck species, which is not legal on the Refuge. TWRA also has a goose season in October that targets resident Canada geese. The Refuge does not allow goose hunting during this season, due to the possibility that a non-target migrant Canada goose could be harvested.

2. Public Use Conflicts

Minimal public use conflicts are expected to occur on the Refuge during the hunting period. Based upon observation by refuge staff, there appears to be light hunter participation in the deer archery, squirrel, turkey and resident Canada goose hunts. The deer gun hunts have more participation, but occur during very limited period (less than 20 days per year). The muzzleloader deer hunt on the Refuge is open during the statewide muzzleloader season, which should disperse hunting pressure and not overburden the Refuge. Signage is utilized to notify non-hunting visitors that a hunt is in progress. Some specific hunting regulations are in place to minimize contact with the non-hunting public (e.g., hunting is not legal within 50 yards of a public road).

Within the hunter group conflicts will occur, as it does on any public hunting area. Competition for a location occasionally arises, but hunters customarily work this out without problems escalating. The Refuge minimizes this by establishing quotas during the most popular gun hunts that permit centerfire rifles. These quotas are by hunt area to reduce the overall numbers of hunters in a given area (Figure 3). The Refuge also closes the deer archery and squirrel hunting during the heavier use deer gun hunts (quota and youth gun hunts) to reduce conflicts amongst hunter groups.

Conflicts have occurred where hunters are disturbed by the Refuge cooperative farming operations, especially during fall harvesting activities. Farmers are typically under time constraints that do not allow them to delay during crop harvest season. When these conflicts occur, the Refuge will generally favor the farmer and encourage the hunter to choose another location or tolerate the activity. Conflicts between cooperative farmers and hunters are extremely rare.

Some conflicts occur between refuge hunters and private property owners adjacent to the refuge. Trespass from the refuge onto private property is a common complaint. The Service attempts to mark a section of the refuge boundary with paint and signs each year. The Service also encourages adjacent property owners to adequately mark their boundary and to prosecute trespassers.

3. Administrative Conflicts

Few administrative conflicts occur associated with hunting activities. The work force and funding available to administer this hunt are adequate to conduct the hunting program at the current level. Occasional conflicts occur that impact Refuge fieldwork. For example, Refuge
staff will delay work on a specific project to avoid interfering with a hunter, whenever feasible. Conflicts between the work of refuge staff and refuge hunters is quite rare.

VII. CONDUCT OF THE HUNT

Listed below are refuge-specific regulations that pertain to Cross Creeks NWR as of the date of this plan. Refuge hunting regulations are revised annually and can be modified to meet changing conditions.


   A. Upland Small Game Hunting. Hunting of gray and fox squirrels is allowed on designated areas of the refuge in accordance with State regulations subject to the following conditions:

   1. Hunters age 17 and older must possess a valid Refuge Annual Hunting Permit.

   2. Hunters age 6 through 16 must be accompanied by an adult 21 years old or older who has a refuge hunting permit on his person. The adult must remain in sight and normal voice contact with the youth supervised. For small game hunts, the adult may supervise no more than two youths.

   3. The entire Refuge is open to hunting with the exceptions noted of Figure 3.

   4. During hunting season, hunters may access the refuge two hours prior to sunrise to two hours after sunset.

   5. Vehicles are only permitted on refuge roads and parking areas designated as open.

   6. Bicycles can be used on refuge hunts, but must remain on refuge paved or graveled roads.

   7. It is unlawful to hunt within 100 yards of a private dwelling, and to access the refuge across private land without permission from the private landowner.

   8. Hunting within 50 yards of a public road is prohibited.

   9. Shooting from or across any road is prohibited.

10. Use or possession of alcoholic beverages while hunting is prohibited.

11. Hunters may only take coyote and beaver incidental to a scheduled refuge hunt for the target species (deer, turkey, squirrel, goose) with any weapon legal for that hunt.
12. Dogs are allowed for squirrel hunting.

13. The fall squirrel season opens with the statewide season, but closes at the end of the day on November 14. Spring squirrel hunt is concurrent with the statewide season. Squirrel hunting is closed during the weekend quota hunts, refuge and statewide youth hunts.

B. *Migratory Bird Hunting.* Hunting resident Canada geese is allowed on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. Conditions A1, A2, A4 through A11 listed above apply.

2. The Refuge will only be open for hunting Canada geese from September 1 until the day prior to the opening of the wood duck and teal season.

3. Goose hunting is only allowed in Hunt Areas 1 and 2 (Figure 3).

4. The use of permanent and/or pit blinds is prohibited.

5. Cutting of brush or vegetation is prohibited.

6. The use of portable, temporary, or boat blinds is permitted. Hunters are required to remove all personal materials (blinds, boats, decoys, trash etc.) at the end of each hunt day.

7. The use of dogs to retrieve geese is permitted.

8. Hunting is permitted in all open areas, with the exception of standing row crops.

9. Running lights are required on boats between sunset and sunrise.

C. *Big Game Hunting - Deer:* Hunting deer is allowed on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. Conditions A1 through A11, and B5 listed above apply.

2. Temporary blinds or stands are permitted on the day of the hunt only. All blinds and stands must be removed at the end of each day’s hunt.

3. Field dressing deer within 50 yards of a public road or trail is prohibited.

4. Hunters have to apply for quota and be drawn to hunt. Hunters are assigned to one of four hunt areas.

5. The Refuge quota gun deer hunt limit is three deer, of which only one can be antlered. One antlerless deer must be taken before harvesting an antlered deer.
(earn-a-buck). Deer taken are bonus deer and do not count toward statewide limits. Any antlerless deer harvested on the Refuge prior to refuge quota hunts can count as an earn-a-buck deer.

6. The Refuge has two youth gun deer hunts. One on the same weekend as the statewide youth hunt. These hunts are non-quota.

7. Hunters age 6 through 16 must be accompanied by an adult 21 years old or older who has a refuge hunting permit on his person. The adult must remain in sight and normal voice contact with the youth supervised. For big game hunts, the adult may supervise no more than one youth.

8. The Refuge youth gun deer hunts limit is three deer, of which only one can be antlered.

9. Scouting during quota hunt, refuge and statewide youth hunts is prohibited.

10. The Refuge deer archery season opens with the statewide archery season, but closes at the end of the day on November 14. Archery deer hunting is closed during the weekend quota deer hunt, refuge and statewide youth hunts.

11. The Refuge deer archery limit is three deer, of which only one can be antlered. Deer taken are counted as part of the statewide bag limit. Any antlerless deer harvested on the Refuge by an archery hunter prior to refuge quota hunts can count as an earn-a-buck deer if the hunter is drawn for the quota hunt.

12. The Refuge muzzleloader deer hunt opens with the statewide muzzleloader season, but closes during the quota gun hunt, if applicable, and then closes at the end of the day on November 14. This is a non-quota hunt and statewide limits apply.

D. **Big Game - Turkey Hunting:** Hunting turkey is allowed on designated areas of the refuge in accordance with State regulations subject to the following conditions:


2. Turkeys may be taken with archery equipment during the Refuge deer archery season. State seasons and limits apply.

3. Spring turkey season is open the entire state season, including the youth hunt. State limits apply and turkeys taken count as part of the statewide bag limit.

**2. Anticipated Public Reaction to the Hunt**

Public reaction from the surrounding communities to all refuge hunts is, for the most part,
favorable and should continue to be the same in the future. The hunting public has supported refuge hunting, though there is always some opposition to specific regulations or hunts. There was some opposition to the opening of quota gun hunts because of safety concerns on the south side of the refuge. Refuge staff worked with the adjacent property owners and closed certain areas to gun hunting to address those concerns. Some adjacent landowners have expressed concern about illegal trespass, safety issues, and overharvest of deer. Nationally, there are some anti-hunting sentiments, and many organizations are opposed to hunting on national wildlife refuges. It is possible that some objections will be voiced to some or all of the hunts within this plan.

3. Quota Hunt Hunter Application Procedures and Selection Process

Applications are only required for the quota deer gun hunts. Currently, there is an online application process to apply for quota hunts. The website is http://www.fws.gov/refuge/Cross_Creeks. Each hunter will be required to create an account with RecAccess. Each hunter will be assigned a RecAccess Identification (RAID) number that will be an individual hunter's identification number that will remain consistent from year to year. Deadline to apply is midnight August 1. There will be a $5.00 application fee charged with each online quota hunt application.

Hunters have the opportunity to gain preference points in the draw. Each time they apply and are not drawn for a permit, they will receive one preference point. Groups or individuals with the highest average preference points will be drawn first, groups and individuals with the next highest will be drawn second, etc. until all permits are filled. After a hunter is drawn for a quota hunt permit, their preference points go to zero for the next year. The preference points for a hunt party will be determined by taking an average of all the hunters in the party.

The computer drawing will be held in early August and notifications will be sent out soon after the drawing by email. Hunters can also check their status and download their permit on the refuge website at www.fws.gov/refuge/Cross_Creeks.

The quota hunt application procedures, costs, and selection processes are subject to change, due to unforeseen circumstances. Any changes to these procedures, costs, or processes will be provided to the public on the Refuge website and in the annual hunting brochure.

4. Media Selection for Publicizing the Hunt

Hunting information is publicized through news releases, visitor contact at the refuge office and visitor center, and distribution of hunting brochures. This information is also available on the station website at: https://www.fws.gov/refuge/Cross_Creeks/visit/visitor_activities/hunting/.

5. General Requirements

General information regarding hunting and other wildlife-dependent public uses can be obtained at Cross Creeks NWR headquarters at 643 Wildlife Drive, Dover, TN 37058 or by calling (931) 232-7477. Hunt dates, refuge and hunting unit maps, applications, and permit requirements are
available at the Refuge Visitor Center or on the station website at: https://www.fws.gov/refuge/Cross_Creeks/visit/visitor_activities/hunting/.

Additional information on hunting within Tennessee is available at the TWRA office located at 200 Lowell Thomas Drive, Jackson, TN 38301 or by calling (800) 372-3928. Dates, maps, and other information about hunting in Tennessee are available on their website at: https://www.tn.gov/twra/section/hunting-in-tennessee.

6. Hunter Requirements

Age

Hunters age 6 through 16 must be accompanied by an adult 21 years old or older who has a refuge hunting permit on his person. The adult must remain in sight and normal voice contact with the youth supervised. For small game hunts, the adult may supervise no more than two youths. For big game hunts, the adult may supervise no more than one youth.

Equipment

The legal hunting weapons and ammunition allowed on Refuge hunts are the same as those prescribed by TWRA. Non-toxic shot is only required on the goose hunt. Boats, deer stands, blinds, decoys and other personal property must be removed at the end of each day’s hunt. Motor vehicles are restricted to designated public use roads. Bicycles are permitted to be used on Refuge hunts and can be used on paved or gravel roads. ATVs are prohibited on the Refuge. Dogs are only allowed for squirrel hunting and as a retriever on the goose hunt. All hunters must wear 500 square inches of fluorescent orange on the upper portion of their body during all refuge gun deer hunts, including the muzzleloader hunt.

Use of Open Fires

Open fires and camping are not allowed.

License and Permits

Each quota or non-quota hunter, age 17 and older, must have on his person a valid State hunting license and a Refuge Annual Hunting Permit. Goose hunters are required to have a federal duck stamp.

Reporting Harvest

There are no requirements for reporting small game or goose harvests. TWRA tagging and check-in regulations apply for big game species (deer and turkey). Refuge hunters should make sure that Cross Creeks NWR is noted as “location of kill or kill code 104.”

Hunter Safety Requirements
All hunters born after January 1, 1969 are required to complete a firearm and hunter education course.
REFERENCES


