Compatibility Determination-Pond Creek National Wildlife Refuge-ATV/UTV use on designated trails on Pond Creek NWR

USE: ATV/UTV Use

REFUGE NAME: Pond Creek National Wildlife Refuge (NWR)

DATE ESTABLISHED: August 12, 1994

ESTABLISHING AND ACQUISITION AUTHORITY:

- 16 U.S.C. 3901(b) Stat.3582-91(Emergency Wetlands Resources Act of 1986)
- Sec. 305, P.L.104-33 (Omnibus Parks and Public Lands Act of 1996)

REFUGE PURPOSES:

- " ...the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international treaty obligations contained in various migratory bird treaties and conventions."

- "...recognize the important public purposes served by non-consumptive activities, other recreational activities, and wildlife-related public use, including hunting, fishing and trapping." Furthermore, this plan " ...shall permit, to the maximum extent practicable, compatible uses to the extent that they are consistent with sound wildlife management, and in accordance with the National Wildlife Refuge System, Administration Act of 1996 (16 USC668dd-668ee) and other applicable laws."

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

The mission of the Refuge System, as defined by the National Wildlife Refuge System Improvement Act of 1997, 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? Is the use a priority public use?

This compatibility determination addresses seasonal ATV/UTV use by the public. ATV/UTV use is not a priority public use. However, ATV/UTV use can facilitate public involvement in priority public uses such as hunting and trapping. ATV/UTV use is an existing use on Pond Creek NWR.

(b) Where would the use be conducted?

Currently, there are twenty-four ATV/UTV trails located throughout the refuge which total 31.6 miles of trails. Three of these trails (1.9 miles) are open year-round to provide access for fishing and the remaining 21 trails (29.7 miles) are open only during the refuge hunting season (September – January). We plan to close fifteen of these trails (17.1 miles) and convert them to walk-in trails and/or maintenance trails for staff use. The remaining 9 ATV/UTV trails (14.5 miles) are widely distributed across the refuge and facilitate access to remote areas of the refuge. The remaining 9 trails will only be open during the hunting season (see attached map).

The Service may consider reopening the southern Pit Road ATV trail if a solution (bridge) to crossing Pond Creek is found that will not impact the hydrology of the system. The southern Pit Road ATV trail would then tie into the Litchford Lake Road ATV trail. With the reopening of the southern Pit Road trail, approximately 1.2 miles of the Litchford Lake Road ATV trail would then be closed. This closure would reduce some of the worst impacts along the Litchford Lake Road ATV trail.

(c) When would the use be conducted?

ATV/UTV trails will only be open during the hunting season (September – January). ATV/UTV use will be allowed day and night and ATV/UTV use is expected to occur on a daily basis during the hunting season. The most intense periods of use coincide with the refuge's 5-day muzzle loader deer hunt and the 2-day modern gun deer hunt.

(d) How would the use be conducted?

ATV/UTV use will be restricted to the above-mentioned designated ATV/UTV trails and ATV/UTV use is restricted to wildlife-dependent activities. An exception is in place that allows mobility-impaired hunters to travel up to 100 yards from a road, campground, or ATV/UTV trail to hunt and to retrieve game with a valid mobility-impaired access permit. Designated ATV/UTV trails will be marked with signage and yellow paint. Those refuge users who use an ATV or UTV must comply with engine size, width, and tire size restrictions as defined in the Pond Creek NWR Public Use Brochure. ATV/UTV use by the public is allowed without a Special Use Permit.

(e) Why is this use being proposed?

ATV/UTV use is a common and historic activity on Pond Creek NWR that facilitates public access in support of wildlife-dependent activities. ATVs and UTVs are primarily used to facilitate hunting activities on Pond Creek NWR. In fact, a primary justification for allowing ATV/UTV use on the refuge has been to disburse hunters and to access remote areas. The Pond Creek NWR Comprehensive Conservation Plan (CCP) of 1999 indicates that prior to Service ownership of the refuge that area users had developed and used a "maze" of trails to virtually every possible location. This uncontrolled ATV/UTV access created severe rutting (creating soil erosion and impacting hydrology), high levels of wildlife disturbance, and elevated user conflicts. To correct this situation, the Service established 15 miles of designated ATV/UTV trails in 1997 to facilitate public use and minimize negative impacts, as outlined in the Refuge's CCP.

Since 1997, additional ATV/UTV trails have been added to Pond Creek NWR. Refuge staff recently completed an evaluation of Pond Creek's trail system and concluded that many of the trails were out of compliance with Executive Order (E.O.) 11644, E.O. 11989 and Refuge Manual 8 RM 7. These policies require that refuge managers close ATV/UTV trails that cause adverse effects on soil, vegetation, wildlife, or wildlife habitat. The scientific literature is replete with descriptions of the adverse effects of ATV/UTV use to the physical environment and to wildlife (Berry et al. 1996; Stokowski and LaPointe 2000; Buckley 2003; Cumulative and Universal: ATV Impacts on the Landscape and Wildlife 2011; Switalski and Jones 2012). In terms of the physical environment, science supports the fact that ATV/UTV use can negatively affect soil and hydrologic function through soil compaction, increased erosion, and stream sediment deposition. These effects can impact water quality, vegetative composition and structure, and wildlife habitat, particularly in wetland habitats (Aust 1994). Negative effects on wildlife by ATV/UTV use include alterations in animal behavior, habitat fragmentation, habitat loss, and direct and indirect mortality. These negative impacts are known to affect fish, mussels, amphibians, reptiles, birds and mammals. The impacts of ATV/UTV use on the physical environment and wildlife are cumulative, universal, and can be achieved by low intensity traffic over short a period of time.

The closure of 17.1 miles of ATV/UTV trails on Pond Creek NWR is required to curtail the negative effects as described above. Most of the trails that are targeted for closure to ATV/UTV use are short in length (ATV/UTV use is unnecessary), near existing roads, and with hydric conditions that are prone to rutting and subsequent soil erosion. In fact, by using GIS to buffer existing roads on Pond Creek NWR (not including ATV trails), we find that 51% of the refuge acreage is within ¼ mile of an existing road and 83% is within ½ mile of existing roads (see attached map). The remaining 14.5 miles of ATV/UTV trials will serve to provide refuge users access to remote areas. The remaining trails will be evaluated further to prevent negative impacts to habitats and wildlife.

AVAILABILITY OF RESOURCES:

Sufficient staff and maintenance funding within our base budget is available to meet annual maintenance requirements. Reducing the number of ATV/UTV trails on the refuge will alleviate

much of the current trail maintenance burden. Furthermore, we are proposing to remove the trails that are most difficult to maintain due to hydric soils and flood-prone conditions.

ANTICIPATED IMPACTS OF THE USE:

Known Direct and Indirect Effects

ATV/UTV use on Pond Creek NWR can have positive and negative effects. ATV/UTV use can safely facilitate existing wildlife-dependent priority public uses such as hunting/trapping. In fact one of the purposes of Pond Creek NWR is to recognize the importance of non-consumptive activities, other recreational activities, and wildlife-related public use. However, ATV/UTV use can have negative effects on the physical environment and wildlife populations and this fact conflicts with the NWRS mission and the refuge purpose of conserving wetlands, other habitats, migratory birds and other wildlife.

ATV/UTV use can have negative effects on the physical environment and to wildlife in a variety of ways. All-terrain vehicle use affects soil and hydrologic function primarily through rutting, soil compaction, soil erosion, removal of the forest litter layer, and increased stream sediment deposition (Meadows et al. 2008; Ouren et al. 2007). Soil compaction and the removal of the forest litter layer can reduce vegetation growth (Webb et al. 1978) and is a primary factor in accelerated erosion rates (Megahan 1990). Changes in plant species composition can occur as a result of invasive species being propagated by ATV trails that act as conduits for human-caused invasion by exotic species (Greenberg et al. 1997; Ouren et al. 2007). In contrast, one of the cornerstones of conservation ecology is the fundamental belief that roadless habitats serve as refuges for native species diversity (Soule´ and Terborgh 1999).

Hydraulic conductivity is a measure of potential water flow through the soil profile and has implications for erosion potential. Declining hydraulic conductivity equates to less infiltration and more runoff. Compaction resulting from ATV travel was proven to reduce hydraulic conductivity 8% at a Montana study site, 59% on a Louisiana study site, and 51% at a Washington study site (Meadows et al. 2008).

Sediment delivery to streams through increased erosion can result from ATV travel (Misak et al. 2002). Increased sediment loading decreases water quality, fish habitat quantity and quality, and fish reproductive success (Newcombe and MacDonald 1991). The increase in runoff and sediment transport can be substantial. Meadows et al. (2008) compared the effects of ATV traffic across seven sites on diverse landscapes including the Wenatchee National Forest in Washington State and Land Between the Lakes in Kentucky and Tennessee. Sediment loads resulting from ATV trails increased by 56% and 625%, respectively, when compared to adjacent undisturbed sites. Ricker et al. (2008) reported increases in suspended stream sediments resulting from ATV trail surface runoff in a paired watershed study in Stafford County, Virginia. Suspended stream sediments increased approximately 94 times downstream of an ATV trail crossing relative to sediment concentrations above the ATV trail crossing.

ATV travel can have a profound effect on all forms of wildlife. Concerns about the effect of off-highway travel on wildlife include: direct mortality (Bury et al. 1977; Bury et al. 2002), habitat fragmentation (Ouren et al. 2007; Robinson et al. 1995) and reductions in habitat patch size

(Reed et al. 1996; Forman et al. 2003), increases in the edge: interior habitat ratio (reductions in animal populations at the edge of forest habitats referred to as the "edge effect"), and alteration of animal behavior (Canfield et al. 1999; Cole et al. 1997; Geist 1978; Hershey 2011; Murcia 1995; Naylor et al. 2009; Nicholson et al. 1997; Rowland et al. 2000). Although direct mortality of ungulates resulting from collisions with ATV's is low, mortality of several species of reptiles have been documented due to off-highway travel (Brooks 1999; Grant 2005).

Sedimentation caused by road runoff or ATV/UTV activity can seriously degrade fish habitat. Burkhead and Jelks (2001) point out that "Excessive sedimentation of rivers and creeks has been linked to increasing levels of imperilment in the diverse fish fauna of the southeastern United States." They explain that sedimentation leads to increased predation on fish eggs by sediment-dwelling invertebrates, increased vulnerability of adult fish to predators, reduced reproductive success, physiological stresses, gill damage, slower feeding rates and consequent weight loss, impeded ability to detect prey, decreased prey availability, increased parasitism and simplification of community structure.

In 2013 Service employees conducted a survey of mussel beds in the Little River along the southern boundary of Pond Creek NWR identified 28 mussel beds and 32 species of mussels. Three federally protected species: Ouachita Rock Pocketbook (Arkansia wheeleri); Winged Mapleleaf (Quadrula fragosa); and Rabbitsfoot (Quadrula cylindrica cylindrica), were collected within the study area. Among the management implications listed in the final report were recommendations to reduce sediment runoff, improve and/or sustain the quality and quantity of vegetative cover in riparian areas, decrease siltation, and subsequently improve habitat quality for mussels.

Forest interior songbirds and wading birds appear to be the avian groups most affected by roads and off-road vehicle (ORV) activities. Populations of both are decreasing, and the influences of roads and trails are contributing to these losses (Wilcove 1985; Robbins et al. 1989; Sauer and Droege 1992; Peterjohn et al. 1995). A variety of wetland loss and degradation processes are contributing to the decline of wading birds such as the wood stork, snowy egret, white ibis and little blue heron. These are species for which Pond Creek NWR was established to protect.

Forest-interior bird species have often been the focus of forest fragmentation issues. Within fragmented forest habitats, forest birds are subjected to: increased competition with other species (Kerpez and Smith 1990), increased parasitism from brown-headed cowbirds (Robinson and Wilcove 1994), increased likelihood of predation (Andren and Angelstram 1988; Marzluff and Restani 1999), greater disturbance from human activities (Knight and Gutzwiller 1995), and increased isolation and inhibition of dispersal (Doak et al. 1992; Matthyssen and Currie 1996). Forest interior migratory bird species tend to be vulnerable to predation and parasitism because they often have open cup nest structures, poorly developed defense mechanisms, nest close to the ground and typically only produce a single, relatively small clutch each breeding season (Dobkin 1992; Rich et al. 1994). Reduced nest success due to nest predation and/or brood parasitism can ultimately result in widespread reproductive failure and have subsequent impacts at the population level for numerous bird species. Road and trail corridors are relatively permanent features on the landscape, and can result in forest fragmentation by creating permanent openings in the forest canopy. Because road and trail corridors remain in the same location for many

years, they can become learned features used by multiple generations of predatory and/or parasitic species (Askins 1994). Brown-headed cowbirds show a distinct preference for edge habitats due to the combination of breeding and foraging opportunities available along or near edges. Other common nest predators include: Blue Jay, American Crow, Common Grackle, squirrels, raccoon, and rat snakes.

It appears that corridor width can influence bird species composition and associated nest predation and parasitism rates along roadways and trails. Studies that specifically addressed the fragmentation impacts of road corridors on bird species (Rich et al. 1994; Askins 1994) generally reported that narrow (8-10 m, 26-33 ft) road corridors had few notable impacts on nesting bird species, whereas wider corridors, particularly where shoulders were maintained with mowing, had more notable effects associated with nest predation and brood parasitism.

Numerous studies of the relationship between ecosystem integrity and road density have concluded that a road density of one mile per square mile is an ecologically acceptable road density standard (Forman and Hersperger 1996). Road and trail densities at or below one mile per square mile can help curtail negative effects such as habitat fragmentation, wildlife disturbance, soil loss and hydrological concerns. Currently, Pond Creek NWR supports a combined road and trail density of approximately two miles per one square mile of habitat. The reduction of 17.1 miles of ATV/UTV trails will bring the combined road and trail density to 1.6 miles per square mile of habitat. If all ATV/UTV trails were removed from Pond Creek NWR, the road density would be 1.2 miles per square mile of habitat.

Future Effects

Like other outdoor pursuits, ORV use has risen dramatically (Hammitt and Cole 1987). In 1960, so few people used ORVs they were not even addressed in a nationwide survey on outdoor recreation (USDA Forest Service 2008). However, ORV use is now recognized as one of the fastest growing outdoor activities in the country (USDA Forest Service 2008). The National Survey on Recreation and the Environment conducted from 2005-2007 estimated that almost 43 million U.S citizens ≥16 years of age participate in ORV recreation. Just under 19 %, or 14.4 million of the South's 77 million people over 16, were ORV participants during the survey period (USDA Forest Service 2008). Therefore, we can expect that the frequency and magnitude of ATV/UTV use will increase. Likewise, the impacts of ATV/UTV use will increase unless properly managed and mitigated.

Cumulative Effects

Many of the impacts of trails and roads go unrecognized because they are cumulative and/or develop slowly over time and cannot be detected by casual observation or the focused short-term studies favored by research-funding programs (Noss 1996; Findlay and Bourdages 2000). Therefore, we can expect that the adverse effects of ATV/UTV use on the physical environment and on wildlife are cumulative.

Mitigation

ATV/UTV use is a popular and historic activity on Pond Creek NWR that facilitates public access in support of wildlife-dependent activities. Meanwhile, this use clearly creates negative impacts to the physical environment and to wildlife. However, the Service can strike a balance

between the desire to support wildlife-dependent recreation and the mission to conserve wildlife and their habitats through mitigation measures. An important mitigation measure will be to reduce the overall number and mileage of ATV/UTV trails on the refuge as proposed above. This mitigation measure will bring the refuge closer to the recommended one linear mile of road/trail per square mile of habitat threshold. This measure will considerably reduce all potential negative impacts to the physical environment and to wildlife. Another important measure will involve reducing the width and mowing of the remaining ATV/UTV trails to reduce the fragmentation issues. ATV/UTV use will now be allowed on designated trails from September through January. This measure will serve to reduce the overall impact of ORV use. Finally, ATV/UTV use will be restricted to wildlife dependent activities as recreational riding will not be allowed.

PUBLIC REVIEW AND COMMENT:

This compatibility determination will be made available for public review and comment for a 30-day period by 1) posting on refuge bulletin board/kiosk, 2) posting on refuge website and social media networks, 3) public media press release.

DETERMINATION (CHECK ONE BELOW):

____ USE IS NOT COMPATIBLE

_X__ USE IS COMPATIBLE WITH FOLLOWING STIPULATIONS

NEPA Compliance for Refuge Use Decision: Place an X in appropriate space.

_X__ Categorical Exclusion without Environmental Action Statement

516 DM 8, 8.5 (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.

___ Categorical Exclusion and Environmental Action Statement

___ Environmental Assessment and Finding of No Significant Impact

___ Environmental Impact Statement and Record of Decision

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

ATV/UTV use on designated trails can facilitate public access in support of wildlife-dependent activities on Pond Creek NWR, primarily hunting and trapping. For ATV/UTV use to be compatible users will:

- Only operate on designated trails.
- Only utilize ATV/UTVs for wildlife-dependent recreational uses.
- Adhere to refuge special regulations in the refuge brochure.
- Individuals with a State-issued mobility-impaired permit may apply for a mobility-impaired access permit to gain special access due to disabilities.
- Closure of 17.1 miles of trail

JUSTIFICATION:

Our analysis demonstrates that 51% of the refuge is located within ¼ mile of a public road and 83% within ½ mile of refuge public roads. This analysis did not include ATV/UTV trails, hiking trails, or maintenance/logging roads. The removal of 17.1 miles of ATV/UTV trail will restore lost or severely degraded elements of biological integrity, diversity, and environmental health at the refuge. The closure of 17.1 miles of trail will reduce habitat fragmentation, improve water quality, and may reduce the spread of invasive species. This reduction is supported by the Service's BIDEH policy (601 FW 3), Executive Orders 11644 and 11989, and 8 RM 7. This reduction brings the number of ATV/UTV trials just below the 1999 CCP level, which was considered the maximum number of trails the refuge could support without impacting BIDEH.

This compatibility determination is a re-evaluation of an existing use (ATV/UTV access) that can facilitate wildlife-dependent recreation, particularly hunting/trapping. After fully considering the impacts of this activity, as described in the anticipated impacts section, it is our judgment that ATV/UTV use with the proposed reductions (see map), as described above, does not materially interfere with or detract from the purposes for which the refuge was established or the mission of the National Wildlife Refuge System. Off-road vehicle access is not recognized as a priority public use of the Refuge System, and future use will be re-evaluated if conditions under which the use is permitted change significantly or if there is significant new information regarding the effects of the use.

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SIGNATURE: REFUGE MANAGER:_____

(Signature and date)

REVIEW: REGIONAL COMPATIBILITY COORDINATOR:_____

(Signature and date)

REVIEW: REFUGE SUPERVISOR:_____

(Signature and date)

CONCURRENCE: REGIONAL CHIEF:_____

(Signature and date)

MANDATORY 10- OR 15-YEAR REEVALUATION DATE:

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