Little River National Wildlife Refuge
Bottomland Hardwood Forest Management
(Commercial Tree Harvesting)
Draft Compatibility Determination

Title

Draft Compatibility Determination for Commercial Tree Harvesting, Little River National Wildlife Refuge (NWR, refuge)

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type

Tree Harvesting (Commercial)

Refuge

Little River NWR

Refuge Purposes and Establishing and Acquisition Authority

Little River NWR was established under the Migratory Bird Conservation Act, 16 U.S.C. 715d: "for use as an inviolate sanctuary, or for any other management purpose, for migratory birds"; Emergency Wetlands Resources Act of 1986, 16 U.S.C. 3901(b), 100 Stat 3583: for "the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions..."; and the Fish and Wildlife Act of 1956, 16 U.S.C. 742f(b)(l) and 16 U.S.C. 742f(a)(4): "for the development, advancement, management, conservation, and protection of fish and wildlife resources.. for the benefit of the United States Fish and Wildlife Service in performing its activities and Services..."

The Refuge was established on February 10, 1987, primarily to preserve wetlands, as a sanctuary for migratory birds, "for the development, advancement, management, conservation and protection of fish and wildlife resources." (USFWS, 1998)

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, functioning under the direction and authorities of the United States Fish and Wildlife Service (Service; FWS) and otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of

Americans (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

This use was previously approved in the Forest Habitat Management Plan (FHMP) and associated EA (USFWS, 2005). The refuge Comprehensive Conservation Plan (CCP) states that commercial timber harvest will be utilized as a management tool to convert loblolly pine plantations back to native bottomland hardwood forest.

What is the use?

Commercial timber harvest includes the cutting and removing of trees by various techniques, for sale or commercial purposes. It is one of many refuge habitat management activities essential to supporting the NWRS mission, refuge purposes and habitat objectives identified in refuge plans. Forest management on refuges is conducted solely to enhance wildlife habitat and Little River NWR only uses tree harvesting as a "refuge management activity". Revenue from the sale of forest products is a byproduct of the essential forest habitat management, a fiscally responsible tool for conservation for the American people. This habitat management activity requires a compatibility determination (CD) because it also meets the definition of "refuge management economic activity". Most forest management actions do not result in revenue generation as they are conducted at a cost to the agency, and they do not require a CD. This use involves commercial forestry contractors resulting in revenue generation. Activities will consist of assessing habitat conditions, developing management prescriptions then issuing a Special Use Permit (SUP) to conduct commercial timber harvest operations on the refuge to accomplish forest and wildlife habitat management objectives specified in the CCP (USFWS, 1998) and FHMP (USFWS, 2005). As stated in the previously approved FHMP, "This plan will not develop a commercial timber harvest program but yet a habitat evaluation system that will guide management decisions based on wildlife habitat parameters. Upon accessing forest habitat, silvicultural activities may be used to manipulate habitat to desired parameters."

Is the use a priority public use?

No

Where would the use be conducted?

When forests are outside biologically established desired conditions and tree harvesting (commercial) for refuge resources of concern is deemed a necessary option to move habitats toward desired conditions, this use may occur anywhere on the Refuge outside of passively managed areas. For management purposes, the Refuge has been administratively divided into 14 management compartments designated on the refuge, of which 13 are designated for active management (Figure 2). The matrix of recently treated areas with early successional habitat adjacent to untreated areas with later successional growth for high priority species increases species diversity by providing alternative habitat needs (Twedt and Somershoe, 2009). Compartment 14 is the only compartment not listed for active forest management. This compartment is south of the Little River and is distributed from one end of the refuge to the

other. Much of the compartment borders the Little River and would be included in a streamside management zone (SMZ). Stands are delineated within each compartment. Nine of the 13 compartments contain loblolly pine plantations. Commercial timber harvest will allow loblolly pine plantations planted for timber production to regenerate naturally into native bottomland hardwood stands as planned in the refuge CCP (USFWS, 1998).

Staggering harvest among years and actively managing multiple forest stands will ensure a matrix of early successional habitats for species that rapidly exploit treated stands (e.g., red-headed woodpecker and eastern wood-pewee as well as later successional growth for high-priority species such as white-eyed vireo, hooded warbler and Swainson's warbler. In compartments 1-13, adaptive management strategies will be used to actively manage bottomland hardwood forests on approximately 70% of the refuge. This corresponds with guidelines established by the Lower Mississippi Valley Joint Venture (LMVJV) Forest Resource Conservation Working Group (LMVJV, 2007). Past commercial harvest operations removed approximately 1,200 acres of off-site loblolly pine plantations distributed over several compartments and are regenerating naturally in native hardwoods. These areas and historical treatments are specified in the FHMP Section V., Habitat Management Strategies (Tables 2 & 3; USFWS, 2005).

When would the use be conducted?

Every species has unique habitat requirements, and habitat quality and abundance can change. Because forests are dynamic, active management is often required to restore and maintain desired habitat conditions for refuge resources of conservation concern as described in the Little River NWR FHMP. The specific locations and acreages of various habitats are identified via assessments and then used to develop Forest Management Prescriptions. These prescriptions receive comprehensive review and regional approval prior to any commercial tree harvesting activity.

Tree harvesting may occur daily throughout the year, but traditionally most harvest operations occur between July 1-November 15. A refuge Special Use Permit (SUP) will identify specific temporal constraints, and other appropriate conservation measures essential to meeting refuge objectives and any best practices or mitigation requirements specified during the compliance process.

How would the use be conducted?

Commercial timber harvest will be the preferred means of achieving habitat improvement. The Permittee will be identified via competitive bid and will implement the habitat project per forest management prescription and SUP with oversight from refuge staff. When harvesting is complete, the refuge forester or designated refuge staff will inspect the site for compliance with all requirements of the contract. If full compliance is achieved, the Permittee's performance deposit will be returned in full, otherwise damages will be deducted from the performance deposit and the remaining amount returned.

Specific silvicultural techniques to be used will be identified in the forest habitat management prescriptions developed and approved prior to implementation. Equipment varies by objective, site, and condition and is typically identified in a bid prospectus and/or in the SUP. Logging equipment typically consists of skidders, feller bunchers, loaders, bulldozers, road graders,

transport trucks and log trucks for hauling material. Compartments scheduled for entry that are cruised and determined not feasible to support a commercial harvest can be postponed until another entry. Existing roads will be used when feasible during commercial timber harvest operations; however, temporary roads will be used throughout the sale area and restored with vegetation (approved by the refuge) following harvest operations.

The 2005 FHMP (USFWS, 2005) includes specific information (e.g. desired habitat conditions) that is not described in this document but has been considered in the development of this CD. Forest management prescriptions will be prepared at the refuge and undergo a review and approval process. Compliance with the National Environmental Policy Act, Section 106 of the National Historic Properties Act (NHPA), Section 7 of the Endangered Species Act (ESA). and other relevant regulations has been completed and those decision documents attached to this CD. Additionally, before a silviculture prescription is implemented, a Clean Water Act Section 404 silvicultural exemption concurrence through the U.S. Army Corps of Engineers will be obtained.

Why is this use being proposed or reevaluated?

Commercial tree harvesting is being proposed due to centuries of anthropogenic impacts that have significantly altered forest structure, composition, and function on the refuge. Active forest management is essential to restore and maintain desired habitat conditions. This use is being proposed by the refuge as a management tool to improve habitat conditions on the refuge for trust species. Multiple wildlife species, including refuge resources of concern identified in the FHMP (USFWS, 2005), such as forest-interior breeding birds, require a mosaic of mature bottomland hardwood forests with tiered canopy layers. Hetzel and Leberg (2006) found that Swainson's, Kentucky and hooded warblers increased by 200% in bottomland hardwood forest where selective timber harvest had occurred. Priority species such as Swainson's, hooded and Kentucky warblers and white-eyed vireos require dense understory growth (Rich et al., 2004), that is often associated with tree fall gaps (Pashley and Barrow, 1993) in forests with large block sizes (>5,200 acres) in a largely forested landscape (>60%) (LMVJV Forest Resource Conservation Working Group, 2007). American woodcock prefer early successional habitat interspersed with hardwood forests lacking midstory and containing dense understory thickets (Dickson and Whiting, 2001). Silvicultural decisions will be based upon refuge resources of concern and their habitat requirements as it relates to desired forest conditions outlined in the HMP. These treatments can increase the mid-story component and understory vegetation providing a more complex habitat type. Popular resident game species, such as white-tailed deer and eastern wild turkeys also respond favorably to selective timber harvests and uneven aged timber management.

Availability of Resources

Active forest management is integral to successful forest habitat conservation on Little River NWR and will be conducted by Service staff and/or professional contractors. Project oversight is often conducted by the Little River NWR forester or other refuge personnel. However, private contract foresters will primarily be used for project implementation and oversight. Commercial timber harvests are primarily conducted by private contractors (loggers) identified via a competitive bid process and operating under a refuge SUP. Project scope and scale may vary by location, resources of concern, current and desired future habitat conditions. Assuming the FWS

fully uses existing authorities, the net fiscal impact to the refuge should be minimal as the Refuge Revenue Sharing Regulation (16 USC 715S) authorizes the Service to offset all costs associated with refuge revenue generation and sharing activities. Additionally, costs may be incorporated into a timber sale prospectus and SUP, and these will be the responsibility of the SUP permitee. Refuge administrative and monitoring costs are accounted for in personnel salaries.

The analysis of cost for administering and managing each use will only include the incremental increase above general operational costs that we can show as being directly caused by the proposed use. Existing refuge resources are adequate to properly administer commercial tree harvesting in a way that will not materially interfere with or detract from fulfillment of the refuge purposes and the System mission. This use was previously approved in the refuge FHMP and associated EA (USFWS, 2005).

One-time costs:

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

Annual/recurring expenses:

- Administration and Management – Little River NWR currently has one full-time equivalent (FTE) refuge manager and one FTE wage grade. Management of the forest habitat to meet the objectives in the FHMP will require additional staff and equipment from other refuges within the Little River NWR Complex. The administrative forester for the complex assists with all aspects of the administration and management of commercial timber operations including inventory, marking, bid solicitation and logging operation oversight. A total of 650 hours of refuge staff days cumulatively is needed to meet specified objectives identified in the FHMP. The forestry technician FTE is currently vacant; therefore, habitat objectives specified in the FHMP cannot be met without using Service employees from within the complex or private contractors to accomplish habitat objectives.
- Monitoring – An FTE refuge forester spends 80 hours annually ($3,700) monitoring timber harvest operations.
- Maintenance- All maintenance activities associated with commercial timber harvest, including road maintenance, will be carried out by the logger. While this will reduce the payment to the government for the value of the timber, no additional costs will be incurred by the refuge.

Offsetting Revenue:

Fair market value of standing timber is obtained through a competitive bidding process. Successful bidders are issued a SUP following full payment of timber sale bid amount. Receipts generated from the sale of forest products removed from the refuge are deposited into the Refuge Revenue Sharing Account. The funds collected annually from all refuges are distributed to the counties on a prorated basis (acreage of refuge land within each county and appraised value of this land) as an “in-lieu-taxes” payment as directed by the Refuge Revenue Sharing Act. Funds may be returned to the refuge in the form of 6860

money to support timber sale administration.

Anticipated Impacts of the Use

Centuries of anthropogenic impacts have altered every major forested ecosystem in the US such that desired habitat conditions cannot be restored or maintained in the absence of active forest habitat management. The Service uses commercial tree harvest treatments that emulate natural processes and provide ecologically appropriate wildlife habitats. Multiple NEPA analyses and decision documents address the direct, indirect, short-term, long-term, and cumulative impacts associated with bottomland hardwood forest management on Little River NWR, as listed.

•2005 Little River NWR FHMP/CatEx/EAS (USFWS, 2005)
•ESA Section 7 Consultation

Because of the dynamic nature of ecosystems, the impacts of all habitat management, including all forest management, are variable and depend upon a huge range of factors including the complex interaction of biotic and abiotic factors unique to the site at the specific time of treatment and the silvics of the species on site. Consequently, it is impossible to identify exact short-term, long-term, or cumulative impact of any habitat practice. Many aspects and impacts of commercial tree harvests are very similar to other habitat practices not requiring a CD. However, commercial tree harvest is different from many other silvicultural practices in that varying amounts of wood fiber are removed from the site, and this does yield different impacts. The impacts are summarized below.Short-term impacts

1. Short term impacts are to be expected during commercial forest habitat management. Whether they are considered positive or negative depends upon objectives and/or perspective. The Little River NWR Forest management program promotes ecological forestry concepts that focus treatment operations on what is being retained within the forest as opposed to traditional production harvest that is focused on what is being removed. As forest restoration progresses, various amounts of legacy retention of forest products occurs to promote desired habitat conditions for a broad range of priority wildlife. Careful forest prescription planning and implementation of appropriate conservation measures mitigates many short-term impacts. Many short-term impacts during and following timber harvest are positive for refuge resources.
    - Sunlight is immediately introduced to the forest floor, stimulating herbaceous plant growth and tree regeneration.
    - The avian community shifts towards species such as indigo buntings and yellow-breasted chats that prefer early successional habitat types. American woodcock prefer habitat with hardwood regeneration areas interspersed with stands of sawtimber-size trees (Dickson and Whiting, 2001). Forest management strategies that create more diverse forests, increase the

availability of understory vegetation, and maintain consistent availability of early successional forest communities benefit breeding birds.

- Soft mast preferred by bears increases as a result of the proposed forest management activities, and bears use brush and logging slash piles to den during winter months; these sites, however, are more vulnerable to disturbance (Weaver and Pelton, 1994).
- Silvicultural prescriptions that include large canopy gaps benefit foraging bats by providing uninhibited foraging areas. Thinning of dense regrowth within these gaps to reduce small diameter stem growth (i.e., clutter) will increase bat access for foraging in forests below the canopy (Ketzler et al., 2018).
- Other potential impacts include: a direct effect is that harvested trees are either killed, or for some species they are simply top killed and almost immediately resprout from stump and/or root systems.

2. The density or volume of wood in America's forests have increased by nearly 50% in less than 70 years (Oswalt et al., 2019) and volumes continue to grow 2.5 times faster than removals. Increasingly dense forests have resulted in degraded habitat for many wildlife resources of concern and a forest management objective is often to reduce the amount of biomass to improve habitat. Post harvest forests are more open, creating conditions that favor increased groundcover and promotes an increase in diversity and retention of legacy resources promotes a more complex forest structure (Fedrowitz et al 2014).
3. Soil disturbance will occur during commercial forestry operations. Scarification frequently stimulates germination of various grasses and forbs. Potential negative impacts including erosion, sedimentation and compaction are minimized by abiding by state Best Management Practice (BMP) guidelines (www.stateforesters.org/bmps/). The extensive use and positive impacts of forestry BMPs is well documented (Schilling et al., 2021). Forest management prescriptions, timber bid prospectus and special use permits identify constraints on equipment, timing and techniques to minimize negative impacts.
4. Wildlife utilizing forest habitats may be temporarily displaced during commercial forestry operations and some individuals could be harmed as trees are removed.
5. Commercial forestry operations cause a temporary increase in noise disturbance, and in emissions from equipment and vehicles. This will not have a significant, long-term impact on the local habitat or priority wildlife populations.
6. Commercial forestry operations impact on the distribution of woody debris on the habitat. Some merchantable material is moved off site while some biomass (tops, small trees, etc.) will be redistributed on the site in the form of dead and down woody material. The removal of trees will have an impact on hazardous fuels from a fire planning perspective. Proper harvest management oversight will ensure that there is no excessive buildup of woody debris. Logging debris becomes an important component of dead wood habitat, and the retention of dead wood contributes to an important habitat component for many wildlife species.

7. Commercial forestry operations may temporarily impact public use of forested areas. Due to the danger associated with timber harvesting, public access may be restricted around harvest operations to ensure safety. Post-harvest ingress/egress may be impacted in specific locations due to residual woody material on site or resulting changes in forest structure. Finally, hauling of wood has potential to degrade refuge infrastructure but costs associated with restoring sites including road repairs can be offset from revenue generated via sale of forest products.
8. Aesthetics are often significantly impacted, especially in the short-term and particularly associated with haul roads, landings (log decks), skid trails and tree felling (Jones, 1993). Foresters integrate many avoidance and minimization measures to minimize impacts including closing temporary roads after harvest operations, removing all merchantable material from felled trees, cutting stumps as low as possible, and scattering slash across the stand rather than in large piles.

Potential negative short-term impacts exist with this use but are minimized through stipulations specified in the SUP including seasons, location of loader sets, and operations during dry ground conditions. This use could potentially remove cavity trees, but adherence to harvest stipulations and Desired Forest Conditions guidelines will ensure that a suitable number of cavity trees remain on the landscape.

Long-term impacts

Timber harvest activities are a long-term habitat management action with long-term impacts, many of them beneficial. Recognizing that all forest management on Little River NWR is solely to enhance habitats for wildlife resources of concern, the most significant long-term impact is enhanced desired forest conditions and habitats for priority wildlife. Impacts vary significantly depending upon subsequent management or disturbance and often include a decrease in stand density, an increase in forest structure, an increase in forest composition and an increase in groundcover. The ecological approach to forestry often used by the NWRS emulates the normal range of variation within healthy, fully functional forest ecosystems. Management generally moves simplified or degraded forest habitats towards more complex ecosystems typical of older growth forests (Bauhus et al., 2009).

•Desired forest conditions are identified in refuge planning documents (HMPs and Forest Management Prescriptions) and supported by scientific literature (e.g. Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat (LMVJV, 2007) and also is based upon professional expertise. For the long-term, forests are moved closer to desired habitat conditions.

•Habitat management, including commercial tree removal, changes environmental conditions such that some species benefit more than other species. Twedt and Wilson (2016) identified bird responses to wildlife friendly forestry and concluded that habitat conditions markedly changed in treated stands over time, often reverting to pre-treatment state within 20 years.

•Because tree removal is an intentionally significant disturbance and is conducted using equipment that moves to many different sites, it may create conditions to favor introduction of invasive or noxious species. This risk is mitigated by including SUP conditions on cleaning equipment prior to contractors arriving on-site. Additionally, silviculture is often used in the management of invasive or noxious species to restore habitats (Muzika, RM 2017).

•Forest function has become highly degraded across the southeastern United States and forests are very dynamic. Forest management is not a one-time activity but rather is a long-term process and reaching conservation success, towards refuge purpose and objectives, depends upon ongoing management.

As with any habitat enhancement, wildlife responses are variable and ephemeral. Passerine response to habitat modifications has been documented in numerous publications. Three species of concern (Swainson's warbler, hooded and Kentucky warblers) responded favorably to selectively thinned timber harvests 12-18 years post-harvest versus untreated stands >30 years, while other species, such as Acadian flycatchers, red-eyed vireos, prothonotary warblers and summer tanagers, that breed on the refuge declined temporarily in treated stands (Twedt & Somershoe, 2009; Heltzel & Leberg, 2006) then populations increased later. Staggering harvest among years and actively managing multiple forest stands will ensure a matrix of early successional habitats for species that rapidly exploit treated stands (e.g., red-headed woodpecker and eastern wood-pewee) as well as later successional growth for high-priority species such as white-eyed vireo, hooded warbler, and Swainson's warbler.

White Nose Syndrome has been the foremost stressor on northern long-eared and tricolored bats, and the current impact of habitat enhancement is considered "Low" because the severity of population-level declines is slight (USFWS 2021, p. 43). Many studies of cavity roosting bats have concluded that retention and maintenance of potential roost trees, particularly snags, is important for bats (Campbell et al., 1996; Jung et al., 1999; Gooding & Langford, 2004, Silvis et al., 2016). The northern long-eared bat (NLEB) is federally listed and the refuge is within the NLEB range; however, no NLEB's and maternal colonies have been detected on the refuge. The tricolored bat (TCB) is proposed for listing as endangered. Documentation of this species on the refuge has occurred during mobile acoustical bat surveys in 2014 and 2015. Mitigation measures such as implementing buffers around known roost sites and snag retention (especially snags larger than 8 inches in diameter) will be utilized to minimize potential impacts. Ketzler et al. (2018) concluded that management towards desired forest conditions is likely to maintain or increase bat activity as compared to unmanaged forests.

The Monarch butterfly has been listed as a candidate species and utilizes herbaceous ground cover, particularly milkweeds, for foraging. This species does not winter on the refuge but may be present during the spring breeding period. Timber harvest could improve habitat for this species by creating earlier successional habitat including blooming nectar plants.

Several mussel species, including the Ouachita rock pocketbook (endangered), winged mapleleaf (endangered), Louisiana pigtoe (proposed threatened, critical habitat present) and rabbitsfoot

(threatened, critical habitat) have been detected in the Little River and tributaries during mussel surveys. The Alligator snapping turtle has recently been proposed threatened and has been documented on the refuge. Inclusion of forestry BMP's mitigates risks to aquatic ecosystems including erosion, sedimentation and soil compaction.

The American burying beetle is listed as threatened and the refuge lies within the range of this species. Soil disturbance during harvest activities will occur in isolated areas minimizing landscape level impacts to this species.

Switch cane or river cane (*Arundinaria gigantea*), is considered a rare and declining habitat type, and remaining examples are small and fragmented. This type has been described as a "critically endangered ecosystem," meaning that it has declined more than 98% from its original extent (Noss et al., 1995). Canebrake restoration is possible when cane is already present. At least partial sunlight is critical for development of cane thickets. Cane is somewhat shade tolerant and on a favorable site it can grow into high-density patches in the forest gaps commonly left by uneven aged silviculture (LMVJV Forest Resource Conservation Working Group, 2007). Foresters implement 1-to-3-acre targeted patch cuts where existing cane is present during timber harvest operations.

The production of soft mast and creation of logging slash piles can positively impact black bear habitat. Strategically placed patch cuts can improve declining switch cane habitat, thus benefitting forest interior breeding birds and bears. While evaluating actively versus passively managed timber stands, Ketzler et al., (2018) found little evidence that silvicultural activities proposed by the LMVJV for managing bottomland hardwood forests negatively impacted bat communities. Detection of acoustic recordings of bats was similar in stands silviculturally treated to enhance habitat for wildlife and reference stands, though the proportion of acoustic recordings was higher in treated stands for most bat species.

Cumulative Impacts

Cumulative impacts may result from sequential actions on a given area, ecosystem or species. Significant cumulative impacts can result from individually minor but collectively important actions taking place over time. Spatial and temporal considerations may influence cumulative or indirect impacts. As example, deforestation around a refuge may influence wildlife response to forest management treatments within the refuge. Recolonization of improved habitats may be influenced by an off-site barrier such as an urban development.

- The diversity of seral stages across a landscape can be a consideration influencing cumulative impacts. Enhancements towards desired conditions at a landscape scale often have better wildlife response than stand level enhancements when the broader landscape remains in relatively poor condition for wildlife resources of concern.

- Prescription planning considers cumulative disturbance including tree removal from other actions on and off-refuge, and combined effects of other management actions (e.g. prescribed fire, mechanical or herbicide treatments, plantings) or natural events (wildfire,

pest and disease) impact wildlife responses.

• Silviculture is the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis. The ongoing interaction of the range of practices is ultimately what restores and maintains desired habitat conditions. For example, a single tree removal operation only provides a temporary impact. However, when sustained at appropriate frequency and intensity, forest management restores and maintains desired habitat conditions.

• The effects of additive tree mortality are taken into consideration as a cumulative impact when evaluating tree stocking and structure. Following a timber harvest operation there could be subsequent mortality, both direct or indirect, from modified wind dynamics, subsequent wildfires or prescribed burns, and from pests or diseases. Conversely, these same risks occur in the absence of tree harvests and may even be elevated as fuels are greater and higher stand density increase risks of pest outbreaks.

Public Review and Comment

This draft CD will be available for public review and comment for 15 days, from April 16th to May 2nd. The public will be made aware of this comment opportunity electronically on the refuge website https://www.fws.gov/refuge/little-river. Robust public outreach and coordination with Native American Tribes and other federal agencies, state agencies, and local governments was conducted during the development of the refuge CCP/EA/FONSI and FHMP, which included bottomland hardwood forest management (commercial tree harvest) (USFWS, 2005). A hard copy of this document will be posted at the Refuge Shop (5357 South Park Dr. Broken Bow, OK 74728). Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final CD.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

Prior to implementation of a commercial tree harvest, a step-down forest management prescription will be developed that minimally identifies refuge resource of concern, describes current condition, describes desired future condition and identifies process and treatment(s) to move forest toward desired condition. Additionally, compliance with Section 106 of NHPA (cultural resources) and Section 7 of the ESA (intra-service consultation with Ecological Services regarding federally listed species) will be completed along with any other regulatory compliance requirements before the prescription is approved for implementation. Finally, the refuge SUP will identify necessary stipulations to meet refuge objectives. Ensuring project implementation specifically supports refuge plans (e.g. CCP, FHMP, Forest Management Prescription) and includes appropriate conservation measures and BMPs to support refuge habitat objectives ensures compatibility.

Justification

This use is compatible with the establishing purposes of the refuge:

> "for use as an inviolate sanctuary, or for any other management purpose, for migratory birds," to conserve wetlands, and "for the development, advancement, management, conservation and protection of fish and wildlife resources."
>
> It is intended to contribute towards the preservation of the bottomland hardwood forest ecosystem for the benefit of waterfowl, as well as other migratory birds and wildlife species.

This use benefits multiple wildlife species, including refuge resources of concern, that require a mosaic of mature bottomland hardwood forests with tiered canopy layers of newer growth. Game species, including white-tailed deer and turkeys, respond positively to active forest management as well. Silvicultural treatments provided by commercial timber harvest modify habitat to benefit refuge resources and help achieve the desired forest conditions outlined in the FHMP. These treatments can increase the mid-story component and understory vegetation providing a more complex habitat type. Due to the large-scale decline of bottomland hardwood forest habitat, silvicultural manipulations on a localized level rapidly produce forest conditions that optimize habitat for refuge resources of concern.

Based on available science and best professional judgement, the Service has determined that Tree Harvesting (commercial), as outlined in this CD, supports the NWRS mission and Little River NWR purposes and habitat objectives. The Code of Federal Regulations states, "We may only authorize public or private economic use of the natural resources of any national wildlife refuge … where we determine that the use contributes to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission" (50 CFR 29.1). It is anticipated that habitat for priority resources of concern will increase in abundance and quality from commercial tree harvest and other non-commercial forest habitat management and wildlife populations will positively respond to habitat enhancements.

The use of commercial tree harvest on Little River NWR is a compatible use based on sound professional judgment. At proposed levels of harvest, bottomland hardwood forest management does not conflict with the national policy to maintain the biological diversity, integrity, and environmental health of the refuge. In contrast, this use benefits the refuge's natural resources. Based on available science and best professional judgement, the Service has determined that bottomland hardwood forest management implemented through the use of commercial tree harvest on Little River NWR as outlined in the refuges CCP and FHMP, and in accordance with the stipulations provided here, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of Little River NWR.

This CD can be categorically excluded from further National Environmental Policy Act (NEPA) analysis under 40 CFR 1508.4 (definition of categorical exclusion) and 516 DM 8.5 B (7,9):

> 8.5 B(7) Minor changes in the amounts or types of public use on Service or State-managed lands, in accordance with existing regulations, management plans, and procedures.
>
> 8.5 B(9) Minor changes in existing master plans, comprehensive conservation plans, or operations, when no or minor effects are anticipated. Examples could include minor

changes in the type and location of compatible public use activities and land management practices.

Further, this action does not trigger an extraordinary circumstance as outlined under 43CFR§46.215. This use is consistent with the CCP, FHMP and associated EA's for Little River NWR (USFWS 1998, 2005). The environmental conditions and use have not changed substantially since the previous NEPA analysis.

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Figure 1. Little River National Wildlife Refuge Boundary Map

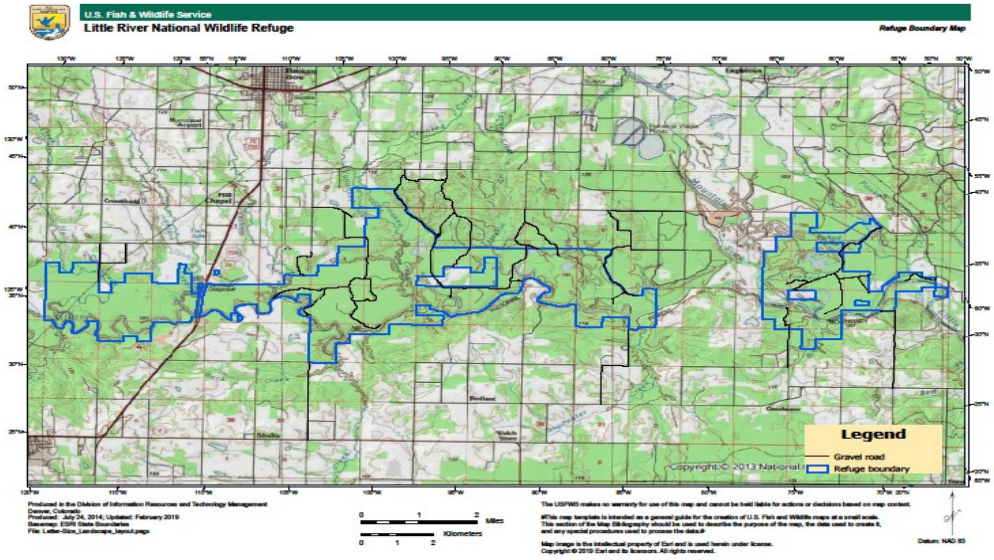
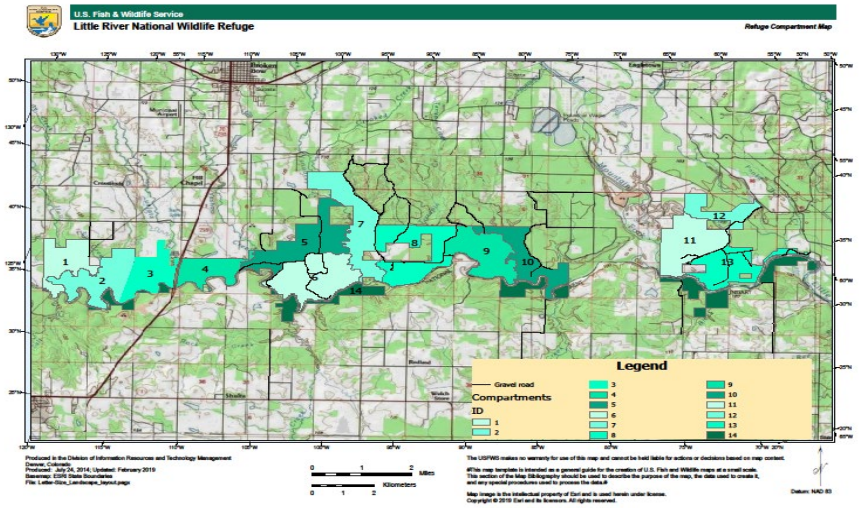


Figure 2. Little River National Wildlife Refuge Compartment Map



Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date