

**FINDING OF NO SIGNIFICANT IMPACT AND DECISION TO
IMPLEMENT SPATIAL HABITAT AND SPECIES MANAGEMENT PLAN
SUPPLEMENTAL DOCUMENT AND ENVIRONMENTAL ASSESSMENT,
KEY CAVE NATIONAL WILDLIFE REFUGE**

Wheeler National Wildlife Refuge Complex

2700 Refuge Headquarters Road

Decatur, AL 35603

The U.S. Fish and Wildlife Service (Service) is proposing management objectives and strategies for habitats on Key Cave National Wildlife Refuge (NWR), located in Florence, Alabama, Lauderdale County, for priority resources of concern stepped down from the Wheeler NWR Complex Comprehensive Conservation Plan (CCP). The current Spatial Habitat and Species Management Plan (SHSP) will further protect Key Cave, endemic cave species and recharge zone; convert 208 acres of cooperatively farmed land to native grassland habitat; and manage forested habitat on the refuge.

Selected Action

Alternative B – Implement the Spatial Habitat and Species Plan (Proposed Action):

Under Alternative B, the Service will implement the proposed SHSP, as detailed in the SHSP in Section A and the mapsheets.

While contributing to other national, regional, and state goals to protect and restore karst habitats and species, refuge management will focus on the achievement of refuge purposes, including to ensure the biological integrity of Key Cave, Collier Cave, and the aquifer common to both caves, and to protect and conserve resources of concern on the refuge, such as the Alabama cavefish, Gray bat, Alabama cave crayfish, Grasshopper Sparrow, Northern Bobwhite, Loggerhead Shrike, and Mourning Dove as well as all other federally listed threatened and endangered species.

Alternative B will refine, update, and replace certain objectives or portions of objectives from the refuge's CCP (USFWS 2007a, b); a crosswalk is provided in Appendix B of the SHSP to clearly outline how the SHSP will update the CCP. Existing CCP goals will remain unchanged (See Background Section Above and Appendix B).

Alternative B will implement the SHSP, which steps down and provides specifics for several of the identified goals and objectives outlined in the CCP without changing the original intent. The focus under this alternative will be to manage, maintain, restore, and protect the refuge's habitats and wildlife species. Wildlife and plant monitoring and inventory activities will be initiated and maintained to obtain the biological information needed to continue current and implement priority management programs on the refuge. Multiple Key Cave NWR SHSP Mapsheets depict future habitat management on the refuge: Overview, Cave Habitat, Grassland Early Successional

Habitat, and Forest Habitat. Active management of portions of the existing 407 acres in forest management units will occur under Alternative B.

Also under Alternative B, interim cropland management on 208 acres will be phased out with those 208 acres being converted to grassland habitat incrementally. The acreage in grassland management units will increase under Alternative B from the existing 360 acres to 568 acres following this phase out of croplands. To serve landscape and refuge management goals and objectives, supplemental wildlife food (e.g., sunflowers) under this alternative will be supplied on the remaining 60 acres that were historically cropland to support foraging Northern Bobwhites and the National Bobwhite Conservation Initiative; foraging Mourning Doves; and wildlife-dependent public use opportunities, including wildlife observation, photography, and hunting.

Active habitat management will be implemented in 24 units to maintain and enhance 360 acres of grassland; 208 acres will be added to the grassland management units from converted croplands. Forest thinning will occur in four units across 76 acres to convert woodlots to oak savannas. Croplands will be restored in 6 units (208 acres will be converted to grassland) and added to the grassland habitat on all but 60 acres. Conversion to grasslands will occur with a goal of 25-50 acres per year. The Service will work with landowners and other Federal and state agencies within the recharge zone to protect water quality and quantity within the cave system. Important partners in this effort include Tennessee Valley Authority (TVA), Partners for Fish and Wildlife (USFWS), and U.S. Geological Survey (USGS). Continuous ground water quality monitoring is key to the conservation of the aquatic species utilizing the cave ground water corridors.

To maintain the existing cropland habitat in an early successional stage in preparation for conversion to grasslands, the Service will continue managing croplands until the conversion is complete as outlined in the Cooperative Farming Compatibility Determination and Early Grassland Successional Habitat Mapsheet. The refuge will identify and implement strategies to improve conditions on refuge lands for grassland and forest dwelling birds. The purpose of this effort will be to work with partners to provide a grassland system of sufficient size and carrying capacity to reach regional objectives associated with area-sensitive grassland birds. The Alabama cavefish will be monitored to ensure stable populations. A properly trained survey team will perform ocular surveys on a 5-year frequency or at a sampling frequency that will be deemed appropriate. Gray bats will be surveyed once every two years during July by emergence counts.

Opportunities for wildlife-dependent recreation activities such as hunting, wildlife observation and photography, and environmental education and interpretation will continue to be provided.

Stepping down from the CCP and serving goals, objectives, and recommendations from the CCP (USFWS 2007), Gray bat (USFWS 1982, 2009) and Alabama cavefish (USFWS 2017, 2019a) recovery plans and 5-year reviews, Geological Survey of Alabama's (GSA) Groundwater Assessment Program (including GSA 2018), and the Service's Water Resource Inventory and Assessment (USFWS 2019k), the proposed Key Cave NWR SHSP articulates future habitat management objectives to provide further refinement, as listed.

No or negligible impacts would be expected for habitat and vegetation (including vegetation of special management concern), air quality, water quality, visitor use and experience, cultural resources, refuge management and operations. Minor adverse impacts would be expected under

the Proposed Action for threatened and endangered species and other special status species, other wildlife, and geology and soils. However, these impacts would be minor and limited in spatial and temporal scope; no significant short-term, long-term, direct, indirect, or cumulative adverse impacts would be anticipated for these or any resources.

This alternative was selected over the other alternatives because Alternative B (Proposed Action) best meets the stated purpose and need. Alternative B was selected over the other alternatives and is identified as the Proposed Action because it best serves the stated purpose and need and would best promote the national environmental policy expressed in Section 101 of NEPA.

Other Alternatives Considered and Analyzed

Alternative A – Continue Current Management (No Action Alternative)

Under Alternative A, refuge management will continue as outlined in the CCP (USFWS 2007a, b). Active cave habitat and wildlife management will continue to be limited to protection of the cave entrances and limited access to surface and subsurface habitats. Under Alternative A, passive management of the existing 407 acres in forest management units will continue. Cropland management will continue on 268 acres of existing cropland management units with 54 acres (20%) continuing to be left as supplemental wildlife food and to provide for public hunting opportunities. As outlined in the CCP (USFWS 2007a, b), cropland management will continue into the future to maintain these units in an early successional stage until such time as the Service could restore the existing croplands. Active management using prescribed fire on the 360 acres in existing grassland management units will continue for the long-term.

Based on recommendations from the Alabama Comprehensive Wildlife Conservation Strategy, the Wheeler Complex will explore methods to protect lands within the Key Cave high risk water recharge zone close to Key Cave NWR. The Service will work with the partners to explore various methods to protect these resources (e.g., through conservation easements, through technical assistance and advice from the Service to the landowner, and through other methods). At Key Cave NWR, the hunting program will be evaluated annually. Results will dictate if the hunting program should be expanded or reduced. Little to no environmental education and wildlife interpretation will occur. Visitation will be expected to continue to experience small increases over time.

This alternative was not selected, because: Alternative A does not meet the stated purpose and need.

Summary of Effects of the Selected Action

An Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that 1) explored a reasonable range of alternatives to meet project objectives, 2) evaluated potential issues and impacts to the refuge, resources and values, and 3) identified mitigation measures to lessen the degree or extent of these impacts. The EA evaluated the effects associated with implementing the Spatial Habitat and Species Plan. It is incorporated as part of this finding.

Both project alternatives aim to protect cultural resources, with no anticipated adverse impacts. Implementation of the agency's decision will be expected to result in the following environmental, social, and economic effects:

Alternative B implements the Spatial Habitat and Species Plan (Proposed Action) which steps down and provides specifics to several of the identified goals and objectives outlined in the CCP without changing the original intent. The focus under this alternative will be to manage, maintain, restore, and protect the refuge's habitats and wildlife species.

While minor adverse temporary impacts could be expected during habitat management and restoration activities under the Proposed Action, overall, minor beneficial impacts to wildlife and aquatic species, threatened and endangered species, and other species status species will be expected. Under the Proposed Action, more active restoration, habitat management, and monitoring will occur. Minor beneficial impacts will be expected for habitat and vegetation under Alternative B.

Under the Proposed Action, the beneficial impacts for hydrology will be anticipated to increase above the No Action Alternative given the further conversion of cropland habitats and decrease in inputs related to habitat management. Impacts to geology will be expected to be negligible. Minor beneficial impacts will be expected for soils and soil formation processes with conversion of 208 acres of croplands to grasslands. Under the Proposed Action, while refuge management activities will increase, impacts to water quality will be negligible to beneficial, while impacts to air quality will be negligible. Under the Proposed Action, impacts to land use will be negligible to minor beneficial for natural resources. Refuge management and operations will increase under the Proposed Action.

Under the Proposed Action, utilizing best management practices and phasing out the cooperative farming program will decrease cropland acres, agricultural inputs, and sedimentation with the conversion to grassland habitat. With increased acres requiring prescribed fire, the principal water quality concerns will be runoff and increases in sediment, nitrates, and heavy metal content, which will be expected to remain low. Properly planned prescribed fire will not adversely affect the quality or quantity of ground or surface water. Increased acreages requiring prescribed fire may contribute to temporary, discrete changes in air quality. Air quality at a regional scale will be affected only when large tracts are burned on the same day. All burning will be done in accordance with applicable smoke management guidelines and regulations and the Wheeler NWR Complex Fire Management Plan.

Under the Proposed Action, wildlife population monitoring/surveying will occur to assess population status, trends, and population responses to habitat management. Monitoring and surveys will be conducted for a broad range of species including: cave dwelling species, grassland birds, and other resident, migratory, and wintering wildlife. Some surveys will be conducted annually, while others will be conducted only frequently enough to determine population status and trends and response to habitat management.

Populations for priority resources of concern will be expected to increase with additional actively managed acreages of old field, grassland, oak savanna, and upland forested habitats. Increased conversion of cropland units to native grasslands will increase habitat for resources of concern. Management actions including savanna and grassland management and cropland conversion should have no to negligible impacts to the Alabama cavefish population and other rare cave-

dwelling populations. Maintaining no more than 60 acres of supplemental agricultural crops at Key Cave NWR will continue to support the Northern Bobwhite Conservation Initiative, which has shifted to a landscape scale for bobwhite quail habitat restoration. On the remaining 60 acres of agricultural crops for supplemental wildlife food, minimal to no pesticides and other agricultural inputs will be utilized.

Managing for desired forest conditions will shift and maintain grassland and forest habitat to support priority resources of concern. Under the recent programmatic biological opinion for the implementation of forest habitat management practices for tree roosting bats, prescribed fire and forestry practices that are recommended to minimize impacts include reducing fire intensity within forest units and avoiding known bat roosts and retaining or creating snags during mulching/thinning operations (USFWS 2024). Targeted removal of invasive species will reduce the negative impacts these species are having on ecosystem functions.

Minimization and Mitigation Measures

Measures to minimize adverse effects have been incorporated into the selected action. These measures include the listed actions.

Continuing to employ appropriate BMPs, the Proposed Action Alternative will refine and update current refuge management activities to respond to changing conditions in the landscape, enhance refuge habitat and species management activities, and serve refuge purposes and goals.

All confirmed sinkholes on Key Cave NWR have extensive buffers, and natural drainageways will continue to be buffered beyond the Service policy requirement (under the Service's PUP policy minimum buffers are required only when fields are adjacent to water). Additionally, rigorous pesticide use policies will continue to be in place to reduce contaminant exposure to species of concern. The refuge will use minimal to no agricultural inputs and pesticides once the farming program is reduced to 60 acres.

The Service, TVA, GSA, USGS, and other partners will continue to coordinate to minimize impacts to Key Cave, including minimizing access to pertinent management and monitoring activities at times when impacts will be minimized and restricting public access.

Before conducting forest management projects such as thinning operations or applying prescribed fire, a site-specific prescription will be developed in accordance with the Biological Opinion for Bats (USFWS 2024). The management prescription will minimally identify the refuge's resources of concern and any management constraints (e.g., cultural resources, ESA), describe the forest's current condition, outline the forest's desired future condition, and identify the processes and treatment(s) required to shift toward desired conditions.

Additionally, a Section 106 (cultural resources review) and Section 7 (ESA intra-service consultation and use of USFWS 2024) will be completed before the prescription will be approved for implementation. Finally, as applicable (e.g., for a Service contractor conducting forest thinning for the refuge), a Service Special Use Permit will outline necessary stipulations required for the activity to remain compatible and meet refuge objectives. The Refuge Manager will ensure project implementation that specifically supports refuge plans (e.g., CCP, SHSP, Fire Management Plan, Cooperative Agriculture Agreement, and Forest Management Prescription), meets applicable laws and policies, and includes appropriate conservation measures and BMPs.

Cultural resources have not fully been inventoried on Key Cave NWR. Should previously unrecorded cultural resources or human remains be discovered on refuge land, activities will be halted and the Regional Archaeologist and Refuge Manager contacted at once.

Monitoring

The Service will continue to work with partners, particularly TVA, GSA, and USGS, to monitor resources of management concern. The Proposed Action will expand existing monitoring efforts for water quality and quantity, responses by resources of concern to management, and population estimates. To apply adaptive management, specific survey, inventory, and monitoring protocols will be adopted. The habitat management strategies will be systematically evaluated to determine management effects on wildlife populations. This information will be used to refine approaches and determine how effectively the objectives are being accomplished. If monitoring and evaluation indicate undesirable effects for target, non-target species, and/or communities, then adaptations to the management strategies will be made.

Public Review

The proposal has been thoroughly coordinated with all interested and/or affected parties.

The Service and Tribal Nations recognize the need for strong, healthy communication and relationships so that we can work together to improve and enhance conservation of fish and wildlife resources and shared natural and cultural resource goals and objectives.

The Service began coordination with the potentially interested Native American Tribes on refuge management activities with the 2007 CCP. Specifically, regarding the draft SHSP the Service contacted the potentially interested Native American Tribes through a scoping letter dated December 9, 2022, to engage the Tribes and gather initial input.

The Service coordinated with governmental agencies during design of the Proposed Action and during public review and comment on the Draft EA, including the State of Alabama (including Department of Economic and Community Affairs, and Department of Conservation and Natural Resources Department). Native American Tribes were also consulted. Public notice included a Public Information Bulletin and documents posted on the refuge's website, published on June 30th, 2025 for 45 days. Public comments were received by the Service during the public review and comment period from 3 members of the public, 4 NGOs, and 2 Native American Tribes. The Service's responses to comments are categorized and summarized in the EA. All substantive comments received during the public review and comment period were reviewed by the Service in the development of a final decision.

Finding of No Significant Impact

While refuges, by their nature, are unique areas protected for conservation of fish, wildlife and habitat, the Proposed Action will not have a significant impact on refuge resources and uses for several reasons, including those listed.

- The action will result in beneficial impacts to the human environment, including the biodiversity and ecological integrity of the refuge, as well as the wildlife-dependent recreational opportunities and socioeconomics of the local economy, with only negligible adverse impacts to the human environment as discussed above.

- The adverse direct and indirect effects of the proposed action on air, water, soil, habitat, wildlife, aesthetic/visual resources, and wilderness values are expected to be minor and short-term. The benefits to long-term ecosystem health that these efforts will accomplish far outweigh any of the short-term adverse impacts discussed in this document.
- The NWRS uses an adaptive management approach to all wildlife management on refuges, monitoring and reevaluating management to ensure that management activities continue to contribute to the biodiversity and ecosystem health of the refuge and to ensure that these actions do not contribute to any cumulative impacts to habitat or wildlife from climate change, population growth and development, or local, State, or regional wildlife management.
- The action, along with proposed minimization measures, will ensure that there is low danger to the health and safety of refuge staff, visitors, and the hunters/fishers themselves.
- The action is not expected to negatively impact any threatened or endangered species, or any Federally-designated critical habitat.
- The action will not impact any cultural or historical resources.
- The action will not impact any Wilderness areas because there are none in the area.
- There is no scientific controversy over the impacts of this action and the impacts of the Proposed Action are relatively certain.
- The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because there are none in the area.

Based upon a review and evaluation of the information contained in the EA as well as other documents and actions of record affiliated with this proposal, the Service has determined that the proposal to implement implementing the Spatial Habitat and Species Management Plan on the Key Cave NWR does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required.

Decision

The Service has decided to implement the Spatial Habitat and Species Plan.

This action is compatible with the purposes of the refuge and the mission of the National Wildlife Refuge System.

The action is consistent with applicable laws and policies.

Signature/Title, Date