DRAFT

ENVIRONMENTAL ASSESSMENT

Sugar Creek Bank Failure Repair Near Mississippi River Mile 768.9L Above Head of Passes Tipton County, Tennessee



U.S. Army Corps of Engineers Mississippi Valley Division Regional Planning and Environmental Division South

Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023 U.S. Army Corps of Engineers Memphis District

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DRAFT ENVIRONMENTAL ASSESSMENT

Sugar Creek Bank Failure Repair Near Mississippi River Mile 768.9L Above Head of Passes Tipton County, Tennessee

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Regional Planning and Environmental Division South, Environmental Compliance Branch, has prepared this draft environmental assessment (EA) to evaluate impacts associated with the proposed bank stabilization efforts along approximately 300 feet of the left descending bank at the mouth of Sugar Creek near Mississippi River Mile 768.9L above head of passes (AHP) (Figure 1). During the fall of 2022, the Mississippi River was at a record low stage. During this time a significant rainfall event occurred in the project area with excessive runoff. This runoff created a head cut at the confluence of Sugar Creek and the Mississippi River, causing significant bank erosion along the west (left descending) bank of the mouth of Sugar Creek. The bed elevation in this area of the creek was reduced by 10 feet and over 15 vertical feet of scour occurred along the bank, threatening the integrity of the existing Richardson Landing Revetment along the banks of the Mississippi River.

This draft EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, Memphis District, to make an informed decision on the appropriateness of an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) for the proposed bank stabilization efforts at the mouth of Sugar Creek. This document has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2.

1.1 <u>Proposed Action</u>. The proposed work will consist of placing approximately 4,800 tons of bank paving using Graded Stone C (400 pounds max stone size) for approximately 300 feet along the bank. This stone will overlap the existing revetment by 20 feet and 280 feet will be placed on a previously unprotected bank of Sugar Creek. Figures 2 and 3 show the plan view and typical section details. Stone paving will be a minimum of 6 feet thick, placed no steeper than 1.5H:1V, and extend from top bank to the toe of the slope without encroaching on the approximate centerline of Sugar Creek to ensure adequate protection against future head cutting.



Figure 1. Aerial map of the proposed Sugar Creek Bank Failure Repair near Mississippi River Mile 768.9L AHP in Tipton County, Tennessee.



Figure 2. Plan view of proposed bank stabilization at the mouth of Sugar Creek near Mississippi River Mile 768.9L AHP.

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Figure 3. Typical cross sections of proposed bank stabilization at the mouth of Sugar Creek near Mississippi River Mile 768.9L AHP.

U.S. Army Corps of Engineers Memphis District 1.2 <u>Purpose And Need For The Proposed Action</u>. The purpose and need of the project is to maintain a safe navigation channel in the Mississippi River by reducing bank erosion along the left descending bank of the mouth of Sugar Creek that is threatening the integrity of the existing Richardson Landing Revetment.

1.3 <u>Authority</u>. This project is authorized by the Flood Control Act of 15 May 1928, Public Law No. 391-70, as amended and supplemented by subsequent Acts of Congress. This Act authorized the Mississippi River and Tributaries (MR&T) Project, which included channel improvement and stabilization works for stabilizing the channel to provide an efficient navigation alignment and protection of flood control features in the Lower Mississippi River (LMR).

1.4 <u>Prior Reports</u>. Subsequent legislation has resulted in many modifications to the 1928 Flood Control Act resulting in several studies and appurtenant documents. Of particular significance is the 1976 Environmental Impact Statement for the Mississippi River and Tributaries, Mississippi River Levees and Channel Improvement Project (USACE 1976). The EIS addressed the mainstem flood risk management and navigation features of the MR&T Project located in the Lower Mississippi River Valley, between Cairo, Illinois and Venice, Louisiana. The project, as disclosed in the EIS, is designed to make the Mississippi River more navigable and manage risks associated with flooding by utilizing channel training devices, levees, and maintenance and construction of the mainstem levees and key harbors. Alternatives included no action, alternate maintenance measures, maintenance of existing project efficiency, storage of excess floodwaters in reservoirs, dredging to increase the hydraulic capacity of the Mississippi River, additional cutoffs to increase the hydraulic capacity of the river, diverting flood flows, widening existing floodways, and alternate construction and maintenance methods.

1.5 <u>Public Concerns</u>. Adjacent landowners have expressed concerns over the caving Mississippi River bluff just upstream of Sugar Creek. Concerns also exist with erosion along the mouth of Sugar Creek encroaching into the adjacent USACE mat casting field near the left descending bank, where the articulated concrete mattress (ACM) used for bank stabilization of the Mississippi River is made and stored.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

For the purposes of NEPA, the no-action alternative serves as the baseline against which impacts and benefits of the action alternatives are evaluated. A description of each alternative is included below.

2.1 <u>No action</u>. The no-action alternative is defined as termination of the proposed project. The extent of bank failures along the left descending bank of Sugar Creek would continue to increase. Erosion would threaten the integrity of the adjacent existing Richardson Landing Revetment along the banks of the Mississippi River. If the Richardson Landing Revetment failed, the estimated repairs of stone paving with a 6 feet thickness would be approximately 52,000 tons of stone. The stability of the south end of the USACE mat casting field adjacent to Sugar Creek

would also be jeopardized, thereby negatively impacting a mission-critical, Federal Lifesafety/flood risk management related project.

2.2 <u>Vegetative establishment.</u> Establishing adequate tree and vegetation coverage as part of a comprehensive streambank protection plan could provide long term streambank stability. A portion of the mat casting field would need to be converted from its present use and additional lands acquired elsewhere for its operation. Additional private lands upstream of the project area would need to be converted into compatible uses as part of a comprehensive plan. While increasing trees and vegetation would ultimately improve slope stabilization, the rate of bank failure severely outpaces the time necessary to establish trees and vegetation at this location.

2.3 <u>Two-Foot Thick Stone Paving</u>. This alternative would consist of clearing the riparian vegetation along the bank, grading the bank, and placing a uniform 2-foot thickness of Graded Stone C (400 pounds max stone size) for approximately 300 feet along the west bank of Sugar Creek. This stone will overlap the existing revetment by 20 feet and 280 feet will be placed on a previously unprotected bank of Sugar Creek. With a 2-foot thickness of stone, the area would remain susceptible to future failures and repeated repairs would be likely.

2.4 <u>Stone Toe Protection</u>. Protecting the existing toe of slope with a stone dike/berm could be beneficial and would encourage the slope to self-heal. However, significant additional losses of riparian land along the east boundary of the casting field would occur before the slope stabilizes. Additionally, stone toe protection alone would have a high potential of failure as the creek continues to head-cut and degrade causing the stone to launch.

2.5. <u>Stream Barbs.</u> Stream barbs were considered along the left descending bank of Sugar Creek. Proper spacing is important to prevent flow from diverting between barbs and causing bank erosion. Riparian vegetation along top bank would need to be cleared for keying the structures into the bank. Stream barbs were considered; however, stream barbs will not protect banks from erosion due to mass slope failure or rapid drawdown (USDA 2007).

2.6. <u>Articulated Concrete Mattress.</u> Grading the failure area and installing ACM would immediately improve bank stability. The remaining riparian vegetation would need to be removed for bank grading. Additionally, the proximity of the area of concern to the casting field limits the potential extents of grading directly affecting installation quality. ACM limits would have to extend beyond the centerline of Sugar Creek to adequately protect against head-cutting. The location of the area of concern (narrow, low-flow stream, high/steep banks) makes installing ACM impractical.

2.7. Engineered Rock Riffles. Installation of engineered rock riffles as grade control structures at strategic locations along the banks near the mouth of Sugar Creek would ultimately help to stabilize the stream banks by decreasing channel velocity at critical areas. While engineered rock riffles may provide long-term stability to the stream bank in the area of concern, they alone will not achieve the immediate bank stability needed to ensure protection of the east end of the casting field. Coupling engineered rock riffles with additional streambank protection measures could provide long term stability but would also increase the project footprint.

2.8. <u>Six-foot thick stone paving</u>. This alternative would consist of placing approximately 4,800 tons of bank paving using Graded Stone C (400 pounds max stone size) for approximately 300 feet along the west bank of Sugar Creek. The stone would overlap the existing revetment by 20 feet and 280 feet would be placed on a previously unprotected bank of Sugar Creek. No earthwork is required. Stone paving will be a minimum of 6 feet thick, placed no steeper than 1.5H:1V, and extend from top bank to the toe of the slope without encroaching on the approximate centerline of Sugar Creek to ensure adequate protection against future head cutting. No established trees would be removed or modified by the stone placement contractor. The work would be performed by river-based equipment, with stone delivered by barge and placed by a barge-mounted trackhoe during higher river stages for adequate floatation. Preconstruction and as-built surveys would be collected to ensure stone placement occurs only within the limits specified on the plans.

The no action alternative was determined to be unacceptable because of the increasing risks to the downstream Richardson Landing Revetment and adjacent USACE mat casting field. Alternative 2.2 was not feasible because the rate of bank failure severely outpaces the time necessary to establish trees and vegetation at this location. Alternative 2.3 would have low initial construction costs, but the non-optimized, uniform paving section would leave the area susceptible to repeated failures in the future, requiring repeated repairs negating any cost savings. Additionally, there would be no environmental advantages, since the slopes are too steep for uniform thickness paving to adequately cover the bank in this area and grading would be required prior to stone placement. Earthwork would require removal of the remaining riparian vegetation along the work reach. Alternative 2.4 would result in additional losses of riparian land along the east boundary of the casting field that would occur before the slope stabilizes, and the alternative would have a high potential of failure as the creek continues to head-cut and degrade causing the stone to launch. Alternative 2.5 would not protect banks from erosion due to mass slope failure or rapid drawdown resulting in a high potential of failure and would require clearing of additional riparian vegetation along top bank. Alternative 2.6 would have a large construction footprint due to the need to clear the remaining riparian vegetation along top bank and extend out past the centerline of the channel. Additionally, the proximity of the area of concern to the casting field limits the potential extents of grading directly affecting installation quality of ACM. Alternative 2.7 would take time to provide adequate protection and need to be coupled with additional bank protection measures, ultimately increasing the project footprint. Alternative 2.8 would not require clearing of riparian vegetation since it would be performed by river-based equipment, with stone delivered by barge and placed by a barge-mounted trackhoe during higher river stages for adequate floatation. Alternative 2.8 offered the best compromise of environmental impacts and project costs, and thus was selected as the proposed action.

3.0 AFFECTED ENVIRONMENT

3.0.1 <u>Environmental Setting</u>. The proposed project area is located along the left descending bank of Sugar Creek at its confluence with the Mississippi River near River Mile 769.8L AHP in Tipton County, Tennessee (Figure 1). The high elevation Chickasaw Bluffs are adjacent to the

right descending bank of Sugar Creek along this reach, and the USACE mat casting field, where the ACM used for bank stabilization of the Mississippi River is made and stored, is adjacent to the left descending bank. Sugar Creek has intermittent flow, primarily during summer and fall, and the dry creek bed is frequently used by all-terrain vehicles for recreation. Bank scour has encroached into a paved boat ramp that is no longer used. The adjacent reach of the Mississippi River is an outside bend with deep swift water with existing revetement along the bank. Photographs of the project area are shown in Figures 4 and 5.





Figure 4. Photographs of the active bank scour along the left descending bank of Sugar Creek near its confluence with the Mississippi River at Richardson's Landing.





Figure 5. Photographs facing upstream (left) from the dry creek bed at the mouth of Sugar Creek and facing downstream (right) facing the Mississippi River at River at Richardson's Landing.

3.0.2 Description of Watershed and Geology. The project area is in the Tennessee portion of the Mississippi River Watershed, Hydrologic Unit Code (HUC) 08010100, which drains approximately 583 square miles. Average ground elevations within the Tennessee portion of this watershed are between 200 and 300 feet mean sea level with little relief. The average down valley slope of the watershed is less than one foot/mile. Sugar Creek extends for approximately 13 miles upstream from the Mississippi River and is at the interface of the Northern Holocene Meander Belts Ecoregion (EPA Level IV Ecoregion: 73a) of the Mississippi Alluvial Plain dominated by Mississippi River alluvial deposits with land uses of cotton and soybean cropland and the Bluff Hills Ecoregion (EPA Level IV Ecoregion: 74a) of the Mississippi Valley Loess Plains dominated by loess-derived alluvium with land uses of woodland and pastureland. Sugar Creek is a meandering stream with intermittent flow, primarily during summer and fall, and flows through unconsolidated and highly erosive sediments, predominantly of Quarternary age. The area is within an area of water re-worked loess deposited onto the floodplain from the mouths of narrow draws of the steep loess-covered slopes (USDA 2022). The majority of soils within the immediate project footprint are mapped as Morganfield silt loam.

3.0.3 <u>Climate</u>. The climate of the proposed project area is characterized by long hot summers, comparatively short mild winters, and abundant rainfall. Snow is rare and most winter precipitation falls as rain, but occasional cold fronts can bring temperatures near or below freezing. The average annual precipitation is approximately 51 inches. Average daily maximum and minimum temperatures are approximately 70 degrees and 49 degrees Fahrenheit, respectively.

3.1 RELEVANT RESOURCES

This section contains a description of those resources that could be impacted by the proposed project. The important resources described in this section (Table 1) are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to not be affected by the alternatives under consideration: recreation resources, prime and unique farmlands, essential fish habitat, and aesthetics.

Resource	Institutionally Important	Technically Important	Publicly Important
Terrestrial Resources and Wildlife	Fish and Wildlife Coordination Act of 1958, as amended; the Migratory Bird Treaty Act of 1918; and Bald and Golden Eagle Protection Act of 1940, as amended	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their aesthetic, recreational, and commercial value.
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The public places a high value on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes and other wetlands.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended.	Federal and state wildlife agencies cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect important sites because of their association or linkage to past events, to historically important persons, to design and construction values, and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.

Table 1: Relevant Resources

Resource	Institutionally	Technically Important	Publicly Important
Socio- Economic Resources	River and Harbor Act and Flood Control Act of 1970 (PL 91- 611), National Environmental Policy Act of 1969	Effects on the human environment may include the interrelation of economic or social and natural or physical environmental effects.	Social concerns and items affecting area economy are of significant interest to community.
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995.	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the tentatively selected plans.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.
Air Quality	Clean Air Act of 1963	State and Federal agencies recognize the status of ambient air quality in relation to the National Ambient Air Quality Standards (NAAQS).	Virtually all citizens express a desire for clean air.
Water Quality and Hydrology	Clean Water Act of 1977, Fish and Wildlife Coordination Act	Federal and state water quality agencies recognize value of fisheries and good water quality. National and state standards are established to assess water quality.	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The public places a high priority on their aesthetic, recreational, and commercial value.
Greenhouse Gases	Executive Order 13990, Executive Order 14008	Federal agencies consider the effects of greenhouse gas emissions and climate change when evaluating Federal actions.	The reduction of greenhouse gas emissions and effects of climate change are of interest to the public.

3.1.1 TERRESTRIAL RESOURCES AND WILDLIFE

Existing Conditions: The project area is located along the left descending bank of the mouth of Sugar Creek, which has intermittent flow throughout the year. The left descending bank has vertical, undercut banks and a narrow, forested riparian corridor ranging from approximately 0 to 50 feet in width, and the right descending bank is more stable, with a forested riparian area extending for approximately 150 feet to Highway 59. Dominant trees in the overstory consist of cottonwood, black willow, and sugarberry. Wildlife expected to utilize the creek bed, shorelines, and adjacent forested lands include raccoon, opossum, mink, bobcat, coyotes, deer, wild turkey, muskrat, river otter, beaver, turtles, snakes, frogs, toads, hawks, vultures, Mississippi kite, kingfishers, herons, egrets, and various songbirds and woodpeckers. No invasive species were present during a site visit conducted on August 3,2023 or are known to frequent the project area.

3.1.2 WETLANDS

<u>Existing Conditions</u>: A records search of the National Wetlands Inventory showed most of the forested lands adjacent to the proposed project area as wetlands (USFWS 1981). The vegetation immediately adjacent to the proposed project footprint along the left descending bank of Sugar Creek primarily consists of a narrow (0-50 feet in width) riparian corridor dominated by cottonwood, black willows, and sugarberry trees which are actively being scoured into the creek bed.

3.1.3 THREATENED AND ENDANGERED SPECIES

Existing Conditions: Coordination with the U.S. Fish and Wildlife Service (Appendix) revealed four federally listed or proposed species may occur in the proposed project area: the federally endangered northern long-eared bat (*Myotis septentrionalis*), proposed endangered tricolored bat (*Perimyotis subflavus*), proposed threatened alligator snapping turtle (*Macrochelys temminckii*), and candidate monarch butterfly (*Danaus plexipus*).

Northern long-eared bat

The northern long eared bat (NLEB) was listed as federally threatened with an interim 4(d) rule in 2015 (80 FR 17973) and was proposed for reclassification to endangered in 2022 (87 FR 16442). Per 88 FR 4908, the Northern long-eared bat has been reclassified from a threatened to an endangered species under the Endangered Species Act (ESA) with an effective date of March 31, 2023. The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, Myotis, which are bats noted for their small ears (Myotis means mouse-eared). The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species range includes 37 states. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bats entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as currently seen.

During summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. The NLEB seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds. In winter, NLEBs hibernate in caves and mines. NLEB could be found roosting in trees within or adjacent to the proposed project area during the summer.

Tricolored bat

The tricolored bat was proposed for federal listing under the ESA in 2022 (87 FR 56381). The tricolored bat is a small insectivorous bat that is distinguished by its unique tricolored fur and often appears yellowish to nearly orange. The once common species is wide ranging across the eastern and central United States and portions of southern Canada, Mexico and Central America. During the winter, tricolored bats are often found in caves and abandoned mines, although in the southern United States, where caves are sparse, tricolored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. During the spring, summer, and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures. Tricolored bats face extinction due primarily to the rangewide impacts of white-nose syndrome has caused estimated declines of more than 90 percent in affected tricolored bat colonies across the majority of the species range.

During summer, tri-colored bats may roost underneath bark, in cavities, or in crevices of both live and dead trees. They could also be found foraging in open areas, along edges, or over water within or adjacent to the proposed project area.

Alligator snapping turtle

Alligator snapping turtle was proposed for federal listing under the ESA in 2021 (86 FR 62434). The alligator snapping turtle (*Macrochelys temminckii*) may be found in large rivers, canals, lakes, oxbows, and swamps adjacent to large rivers. It is most common in freshwater lakes and bayous, but also found in coastal marshes and sometimes in brackish waters near river mouths. Typical habitat is mud bottomed waterbodies having some aquatic vegetation.

USACE biologists conducted a site visit to the proposed project area on August 3, 2023. Habitat conditions consisted of a vertical bank with fallen trees scoured into the dry creek bed. During low water, this habitat is not conducive for alligator snapping turtle and the vertical banks are not conducive for nesting. Adult snapping turtle could utilize the stream during higher river stages.

Monarch butterfly

The monarch butterfly is a candidate species and not yet listed or proposed for listing. Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic.

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult

butterflies living approximately two to five weeks; overwintering adults enter reproductive diapause (suspended reproduction) and live six to nine months.

In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again.

The monarch butterfly lives in a variety of habitats throughout North America but need milkweed for breeding. A site visit was conducted by USACE biologists on August 3, 2023 and revealed no milkweed within the proposed project area.

3.1.4 CULTURAL RESOURCES

Existing Conditions: A cultural resources survey was conducted in the project's Area-of-Potential Effect (APE) in 2018, and no cultural resources are within the APE.

3.1.5 SOCIO-ECONOMIC RESOURCES

<u>Existing Conditions</u>: The project area is located in Tipton County, Tennessee. The population estimate of Tipton County in 2022 was 61,656 with a 1.1% increase from 2020. The median household income of Tipton County in 2021 dollars was \$63,783 from 2017-2021. The dominant industry for the civilian employed population 16 years and over is educational services, and health care and social assistance (22.3%) followed by retail trade (13.2%), and manufacturing (13%).

3.1.6 ENVIRONMENTAL JUSTICE

Existing Conditions: The Department of Defense's Strategy on Environmental Justice of 1995, directs Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population.

EPA's Environmental Justice screening and mapping tool, Version 2.2, was used to analyze a 5mile buffer around the project area for environmental justice communities. The data shows the area is not an area of EJ concern based off of minority population but is an area of EJ concern area due to low income populations. People of color represent 26 percent of the area mapped which is nearly the same value as Tipton County (25%) and less than both the state average (28%) and national average (39%). Low income data shows the 5-mile buffer around the project area is 39% low income which is greater than the percent living below poverty in Tipton County (11.3%) and Tennessee (13.6%). This area is also mapped as a disadvantaged community in the Climate and Economic Justice Screening Tool (CEJST), version 1.0, developed in response to Executive Order 14008 on *Tackling the Climate Crisis at Home and Abroad* (January 27, 2021), which identifies the Census tract (Tract # 47167040100) as disadvantaged for the workforce development category due to the number of unemployed people as a part of the labor force being above the 90th percentile (burden threshold) and the percent of people ages 25 years or older whose high school education is less than a high school diploma (socioeconomic threshold).

3.1.7 AIR QUALITY

<u>Existing Conditions</u>: Tipton County, Tennessee is presently classified as "in attainment" with the state's air quality requirements. There are no areas where air pollution levels persistently exceed the national ambient air quality standards within the vicinity of the project area.

3.1.8 WATER QUALITY AND HYDROLOGY

Existing Conditions: Sugar Creek is designated by the Tennessee Department of Environment and Conservation (TDEC) as suitable for fish and aquatic life, recreation, irrigation, and livestock watering and wildlife (TDEC Chapter 0400-40-04, Use Classifications for Surface Waters, September 2019). The proposed work reach of Sugar Creek is not identified on the 303d list of impaired waters for the state of Tennessee nor are there any approved Total Maximum Daily Loads within the proposed river reach (TDEC 2022). The proposed work reach of Sugar Creek is not listed by TDEC as an Exceptional Tennessee Water or Outstanding Natural Resource Water.

Sugar Creek is a meandering stream with intermittent flow, going mostly dry during summer and fall, flowing from its headwaters in the Bluff Hills approximately 13 miles downstream to where it enters into the Mississippi River in the Mississippi Alluvial Plain. The mouth of Sugar Creek also receives backwater from the Mississippi River during moderate to high Mississippi River stages.

3.1.9 AQUATIC RESOURCES AND FISHERIES

<u>Existing Conditions</u>: The proposed work reach is along an intermittently flowing tributary to the Mississippi River. While there is a diverse mosaic of substrate types within the work reach (riprap, natural bank, gravel, sands, silts, and clays) habitat for aquatic macroinvertebrates and freshwater mussels is poor due to this intermittent flow. Similarly, the entire work reach remains dry and is unavailable for fish during dry periods, typically during portions of summer and fall. During periods of connectivity with the Mississippi River, a diverse community of fish ranging from slack water to flowing water species can utilize this tributary mouth. Tributary mouths can harbor as many as 82 species of fish in the lower Mississippi River (Baker et al. 1991).

3.1.10 GREENHOUSE GASES

<u>Existing Conditions</u>: Carbon dioxide (CO2) is the primary greenhouse gas emitted from human activities, chiefly through combustion of fossil fuels. Greenhouse gases (GHG) absorb reflected energy from the sun and warm Earth's atmosphere. Increases in GHG have resulted in measurable warming of the Earth's surface and ultimately changes to some ecosystems. Trees are able to reduce the amount of CO2 in the atmosphere by sequestering the gas during photosynthesis and returning oxygen to the atmosphere as a byproduct.

3.1.11 NAVIGATION

<u>Existing Conditions</u>: The Memphis District maintains a commercial navigation channel along 355 miles of the Mississippi River from Cairo, Illinois, near River Mile 954, to the mouth of the White River at Rosedale, Mississippi, River Mile 599. Over 250 million tons of goods pass through the Memphis District boundaries annually. The major commodities include petroleum and petroleum products, crude materials, food and farm products, chemicals and related products, primary manufactured goods, and coal. There is no commercial navigation through Sugar Creek; however, the Mississippi River navigation channel is immediately adjacent to the downstream end of the proposed work area.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 TERRESTRIAL RESOURCES AND WILDLIFE

<u>Future Conditions with No Action</u>: Without implementation of the proposed action, scour would continue to encroach into the remaining riparian vegetation along the left descending bank of Sugar Creek. The associated wildlife would be permanently displaced with the elimination of this riparian vegetation.

<u>Future Conditions with the Proposed Action</u>: No tree clearing would be required since all work would be conducted from floating barges; however, there could be a temporary displacement of wildlife along the riverbank in the immediate vicinity of the stone placement. Any potential wildlife present would likely move upstream or downstream of the immediate vicinity of the construction operations. A site visit was conducted on August 3, 2023, and there are currently no known active rookeries or bald eagle nests in the immediate vicinity of the proposed project area. The proposed action would have no effect on invasive species.

4.2 WETLANDS

<u>Future Conditions with No Action</u>: With the no action alternative, the remaining forested riparian corridor along the left descending bank of the project area would be scoured into Sugar Creek. No other land use changes or detrimental impacts to adjacent wetlands are known to occur or expected in the reasonably foreseeable future.

<u>Future Conditions with the Proposed Action</u>: With the proposed action, rock would be placed along approximately 300 feet of the left descending bank of Sugar Creek extending from top bank down to the toe of the slope without encroaching on the approximate centerline of the creek to ensure adequate protection against future head cutting. Rock would be placed using riverbased equipment without the need for additional tree clearing. The proposed rock placement is within the limits of the terms and conditions of Nationwide Permit 13 for bank stabilization, pursuant to Section 404 of the Clean Water Act. A general aquatic resources alteration permit (ARAP) which serves as the Section 401 water quality certification was received from the Tennessee Department of Environment and Conservation on September 7, 2023 (Appendix).

4.3 THREATENED AND ENDANGERED SPECIES

<u>Future Conditions with No Action</u>: With no action, there would likely be no significant changes to threatened and endangered species and their habitats compared to current conditions. Ongoing threats, such as, white-nose syndrome to bat species and habitat fragmentation across species ranges would continue. Protection of federally listed endangered and threatened species would continue through formal and informal consultations under the Endangered Species Act.

Future Conditions with the Proposed Action: The proposed work will be performed by riverbased equipment, with stone delivered by barge and placed by a barge-mounted trackhoe during higher river stages for adequate floatation. No established trees will be removed or modified by the stone placement contractor. Based on the nature of these activities, the proposed action would have no effect on the federally endangered northern long-eared bat (Myotis septentrionalis) as determined using the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) system, pursuant to Section 7(a)(2) of the ESA (Appendix). The vertical bank and intermittently inundated stream is not ideal habitat for alligator snapping turtle (Macrochelys temminckii) nesting. No milkweed, the host plant for monarch butterfly (Danaus plexipus) was observed during a site visit conducted on August 3, 2023. The proposed activities are not likely to jeopardize the continued existence of the proposed endangered tricolored bat (Perimyotis subflavus), proposed threatened alligator snapping turtle (Macrochelys temminckii), or candidate monarch butterfly (Danaus plexipus). Requirements of Section 7 of the ESA have been fulfilled. However, obligations under Section 7 of the ESA will be reconsidered if new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, the proposed action is subsequently modified to include activities which were not considered during this review, or new species are listed or critical habitat designated that might be affected by the proposed action.

4.4 CULTURAL RESOURCES

<u>Future Conditions with No Action</u>: With no action, there would be no anticipated direct, indirect, or cumulative impacts to cultural resources.

<u>Future Conditions with the Proposed Action</u>: Pursuant to 36 CFR 800.3(a)(1), the District Archaeologist has determined that this project has no potential to cause effects to historic properties eligible for the National Register of Historic Places. Thus, no further Section 106

Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023 consultation is required. However, if prehistoric or historic artifacts, human bones, or other archaeological materials subject to the Native American Graves Protection and Repatriation Act (NAGPRA) are found during construction, all activities would cease immediately in that area and the Memphis District Archaeologist would be contacted. SHPO and tribal NAGPRA representatives, the local sheriff, etc., would be contacted as required by state and federal law.

4.5 SOCIO-ECONOMIC RESOURCES

<u>Future Conditions with No Action</u>: The socio-economic resources in the immediate vicinity of the proposed project area are not expected to change from current conditions without implementation of the proposed action. However, there would be an increased risk of disruption to the adjacent USACE mat casting operations and associated bank stabilization efforts along the Mississippi River. Additionally, continued scour would threaten the integrity of the adjacent revetment along the Mississippi River. Future repair efforts to this revetment could cause temporary disruption of waterborne commerce as it is immediately adjacent to both the main navigation channel and the USACE mat casting operations.

<u>Future Conditions with the Proposed Action</u>: The socio-economic resources in the immediate vicinity of the proposed project area are not expected to change from current conditions with implementation of the proposed action. The proposed repairs would occur using river-based equipment at moderate river stages with adequate floatation and are not anticipated to impact other activities near the project area.

4.6 ENVIRONMENTAL JUSTICE

<u>Future Conditions with No Action</u>: The No Action Alternative would have no direct disproportionately high or adverse human health or environmental effects on any minority and/or low-income populations as per Executive Order (E.O.) 12898.

<u>Future Conditions with the Proposed Action</u>: Under the proposed action, rock would be floated in by barge at moderate Mississippi River stages and placed with river-based equipment. Public access is limited to the site, particularly during these river stages, and the area is not conducive to significant use by the public. The proposed action would have no direct disproportionately high or adverse human health or environmental effects on any minority and/or low-income populations as per E.O. 12898.

4.7 AIR QUALITY

<u>Future Conditions with No Action</u>: Without implementation of the proposed action, air quality in the area would not change.

<u>Future Conditions with the Proposed Action</u>: Any impacts to ambient air quality due to emissions from equipment used for construction operations would be short-term and minor. The equipment used for the proposed action are classified as mobile sources. No permits are required

for air emissions from mobile sources within attainment areas. The status of attainment in Tipton County would not be altered.

4.8 WATER QUALITY AND HYDROLOGY

<u>Future Conditions with No Action</u>: Without implementation of the proposed action, no significant changes to water quality or hydrology would likely occur due to current regulatory mechanisms and the existing management of the river.

<u>Future Conditions with the Proposed Action</u>: Stone would tie into the existing Mississippi River revetment and extend for approximately 300 feet along the left descending bank of Sugar Creek. The stone would be placed from top bank down to the toe of the slope of Sugar Creek without encroaching on the approximate centerline to ensure adequate protection against future head cutting. The bed of Sugar Creek would continue to have intermittent flow during dry periods and low Mississippi River stages. There are no significant changes to the hydrology of Sugar Creek or the adjacent Mississippi River with the proposed action. Some sediments (mostly sands, silts, and clays) would be stirred up when the riprap stone is deposited along the left descending bank. This increased sediment load would be local and minor compared to the natural sediment load of the river, especially during high river stages. There would be no significant impacts to hypoxia (i.e. oxygen depletion) in the Gulf of Mexico. Overall, water quality impacts would be minimal during construction, and would quickly return to preconstruction levels after construction.

4.9 AQUATIC RESOURCES AND FISHERIES

<u>Future Conditions with No Action</u>: With no action, the aquatic resources and fisheries of the proposed project area would not change from current conditions. Scour would continue along the left descending bank, and the creek would still undergo intermittent flow becoming dry during periods of low rainfall and low Mississippi River stages.

<u>Future Conditions with the Proposed Action</u>: Aquatic resources and fisheries would not change considerably from current conditions with the proposed action. Sugar Creek would remain unavailable to aquatic resources and fisheries during periods of low rainfall and low Mississippi River stages becoming available with higher stages. The left descending bank would change from a scouring natural bank to riprap stone. The remaining riparian vegetation along top bank would be saved from additional scour. Construction would occur during higher river states when fish may be present in Sugar Creek. During construction, fish within the project area are expected to temporarily migrate upstream or downstream and the small numbers of aquatic macroinvertebrates that could be present would most likely drift downstream. Minimal adverse impacts to aquatic resources are expected with construction.

4.10 GREENHOUSE GASES

<u>Future Conditions with No Action</u>: Consideration of effects of greenhouse gas (GHG) emissions were conducted utilizing the recommendations of the Council on Environmental Quality (CEQ) guidance in January 2023 (88 FR 1196). These analyses quantify the projected GHG emissions

from the burning of fossil fuels by construction equipment. GHG emissions were calculated for the No Action Alternative on the repairs that would be needed due to the indirect effects of the ongoing scour threatening the integrity of the Richardson Landing Revetment. The GHG emissions were calculated using the type, quantity, horsepower, total hours, and associated emission factors of the equipment (i.e., boats pushing the equipment and the excavators placing the stone) and compared to the proposed action (Table 2). Additional context is provided for GHG emissions through the use of best available social cost of GHG (SC-GHG) estimates to translate climate impacts into the more accessible metric of dollars.

 $SC - GHG = CO * SC - CO_2 + CO_2 * SC - CO_2 + CH_4 * SC - CH_4 + N_2O * SC - N_2O$

Where:

SC - GHG = the social cost of greenhouse gas emissions in dollarsCO

- = total carbon monoxide emissions in metric tons CO_2
- = total carbon dioxide emissions in metric tonsCH₄

= total methane emissions in metric tons N_2O

- = total nitrous oxide emissions in metric tonsSC CO₂
- = social cost of carbon dioxide (also used for carbon monoxide)SC
- $-CH_4 = social cost methaneSC N_2O = social cost of nitrous oxide$

<u>Future Conditions with the Proposed Action</u>: Project construction would result in release of some greenhouse gases as equipment (*e.g.*, boats pushing the equipment/barges of stone and excavators placing stone) burns fossil fuels. Table 2 compares these GHG emissions and the social costs for the proposed action to the no action alternative. Overall, minor short-term adverse effects would occur due to the GHG emissions from the construction equipment; however, these effects are expected to be less than those from the repairs needed from indirect effects of the no action alternative.

Table 2. Alternative comparison of GHG emissions (total metric tons) and social costs (2020 dollars)

Total GHG Emissions by Project Alternative (total metric tons)					
	СО	CO ₂	CH₄	N ₂ O	*CO₂e
No-Action Alternative	0.30	98.45	0.01	0.84	348.93
GHG Emissions From Proposed Action	0.03	8.95	0.001	0.08	31.72
Total Social Costs of Greenhouse Gases (2020 Dollars)					
	СО	CO ₂	CH₄	N ₂ O	Total
No-Action Alternative	16.56	5512.93	13.41	17616.74	23159.64
GHG Emissions From Proposed Action	1.51	501.18	1.22	1601.52	2105.42

* CO2eq = X*CO + X*CO2 + Y*N2O + Z*CH4

Where $\dot{X} = 100$ Year Global Warming Potential for Carbon Monoxide and Carbon Dioxide = 1

Where Y = 100 Year Global Warming Potential for Nitrous Oxide = 298

Where Z = 100 Year Global Warming Potential for Methane = 25

CFR Title 40 Chapter I Subchapter C Part 98: Table A-1 Global Warming Potentials

Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023

U.S. Army Corps of Engineers Memphis District

4.11 NAVIGATION

<u>Future Conditions with No Action:</u> Without implementation of the proposed action, scour at the mouth of Sugar Creek would continue to threaten the integrity of the Richardson Landing Revetment adjacent to the Mississippi River navigation channel. Maintenance activities to this revetment would be expected. Construction and maintenance activities associated with the channel improvement program of the MR&T project would also continue in other reaches of the lower Mississippi River with a purpose of providing an efficient navigation alignment.

<u>Future Conditions with the Proposed Action:</u> With implementation of the proposed action, navigation on the Mississippi River would not change. The barges and small towboats used for the proposed repairs would be working at the mouth of Sugar Creek and would not pose a significant navigation hazard. The contractor would have a contact pilot on the job at all times to manage towboat traffic and conduct communication with industry. The Coast Guard would be coordinated with during construction to ensure continued river navigation safety. No adverse impacts to navigation are expected.

4.12 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

A search of EPA databases on superfund sites (CERCLIS), toxic release inventory (TRI), Resource Conservation and Recovery Act (RCRA), and water discharge permits (PCS) revealed that no releases or spills occurred within the proposed work limits. A site visit was conducted on August 3, 2023 and revealed no evidence of HTRW. No additional HTRW investigations are recommended unless new information is revealed or HTRW is discovered during construction. If a recognized environmental condition is identified in relation to the project site, the USACE, Memphis District, would take the necessary measures to avoid the recognized environmental condition. If any HTRW is encountered during construction activities, the proper handling and disposal of these materials would be coordinated with the Tennessee Department of Environment and Conservation.

4.13 CUMULATIVE EFFECTS

The CEQ's regulations (40 CFR 1500-1508) implementing the procedural provisions of the NEPA of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.1)". Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Federal efforts to improve navigation on the Mississippi River began as early as 1820 (USACE 1976). Surveys, maps, and charts were developed for the river, and USACE began the removal of stumps, snags, and other hazards to navigation in 1824. By the middle of the nineteenth century, growing river commerce and increased destruction from flooding created the need for more Federal participation in improvements for navigation and flood control. In 1879, the

Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023 Mississippi River Commission was created by an Act of Congress to prepare a plan to permanently locate and deepen the navigation channel, stabilize the banks, prevent destructive floods, and promote commerce along the river. Following the disastrous flood of 1927, the Flood Control Act of 1928 was passed committing the Federal Government to a definite program of flood control, channel stabilization, and river regulation, known as the MR&T Project. The MR&T project has four major features: 1) levees and floodwalls for flood protection, 2) floodways to divert excess flows past critical reaches, 3) channel improvement and stabilization for both navigation and flood control, and 4) tributary basin improvements for flood protection and drainage.

The MR&T project is responsible for many of the physical, hydraulic, and ecological features that presently exist in the LMR (Baker et al. 1991). Dikes, revetment, and bendway weirs found throughout the LMR have resulted in a mosaic of artificial and natural habitats utilized by aquatic organisms and wildlife, including at least 91 species of freshwater fishes (Baker et al. 1991). Bendway cutoffs constructed between 1929 and 1960 shortened the river by approximately 150 miles (Winkley 1977). Levee construction has greatly reduced the amount of seasonally inundated floodplain throughout the region. Keeping the channel from naturally meandering has reduced the formation of new slackwater habitats in the floodplain. Since 1960, channel engineering has resulted in a loss in the number of secondary channels and associated habitats (Williams and Clouse 2003). The primary environmental effects of the MR&T project and channel improvement activities include the physical loss of channel habitat quantity, a growing disconnect with the relict floodplain during low to moderate river stages, and a general loss of riverine habitat complexity (USACE 2013, Killgore et al. 2014). Efforts to maintain, restore, and improve habitat values in the LMR have increased in recent years. In 2012 and 2013, ten thousand acres of batture, an area of active floodplain riverward of the levees, were placed under easement and reforested to increase the contiguous forested wetlands along the LMR (IEC 2014). Over 873,000 acres of wetlands have been restored as part of the Wetland Reserve Program in the LMR corridor encompassing lands both within and outside of the levee system (IEC 2014). A programmatic conservation plan was developed in 2013 detailing the actions and mechanisms by which the Channel Improvement Program of the MR&T project implements conservation measures to maintain and improve habitat values within the LMR (USACE 2013, Killgore et al. 2014). The number and condition of secondary channels are monitored on the LMR and opportunities to maintain and restore connectivity are discussed and implemented annually (USACE 2013, USFWS 2013, Killgore et al. 2014).

Maintenance dredging and construction and maintenance of channel improvement structures on the LMR, as part of the MR&T program, are conducted annually. In the immediate vicinity of the project footprint, various construction and maintenance activities have occurred since 1998 on the Richardson Landing Revetment extending along the outside bend of the Mississippi River from the mouth of Sugar Creek downstream. The revetement consists of ACM riprap stone upper bank paving. The preferred alternative would result in some minor alterations to the environment; however, no significant adverse cumulative impacts are expected due to the proposed action. Maintaining the navigation channel is part of an overall comprehensive plan for the MR&T Project. The direct, indirect, and cumulative impacts for other portions of the MR&T and associated project were previously addressed in the Prior Reports Section, above.

Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023 U.S. Army Corps of Engineers Memphis District The discussions of potential cumulative impacts contained in the cited documents are incorporated herein by reference. Overall, the project, in comparison to past, present, and reasonably foreseeable future projects, will not incrementally contribute adversely to the general project area.

5.0 COORDINATION

Comments are being solicited from the public; federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed activity. Any comments received will be considered by USACE to determine whether to modify or condition the project. The following agencies, as well as other interested parties, will receive copies of this draft EA and the draft finding of no significant impact (FONSI):

U.S. Department of the Interior, Fish and Wildlife Service U.S. Environmental Protection Agency, Region IV Tennessee Wildlife Resources Agency Tennessee Department of Environment and Conservation Tennessee State Historic Preservation Officer

6.0 MITIGATION

The Council on Environmental Quality's regulations (40 CFR 1508.1) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) define "mitigation" as including a) avoiding the impact altogether by not taking a certain action or parts of an action; b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and e) compensating for the impact by replacing or providing substitute resources or environments.

No adverse impacts have been identified that would require compensatory mitigation.

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon: coordination of this draft EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; receipt of a general ARAP from the State of Tennessee; receipt of the State Historic Preservation Officer Determination of No Effect on cultural resources; receipt and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act recommendations; and receipt and acceptance or resolution of all Tennessee Department of Environment and Conservation comments on the air quality impact analysis documented in the EA. The FONSI will not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

8.0 CONCLUSION

This office has assessed the environmental impacts of various project alternatives. No significant impacts to terrestrial resources and wildlife, wetlands, threatened and endangered species, cultural resources, socio-economic resources, environmental justice, air quality, water quality and hydrology, aquatic resources and fisheries, greenhouse gases, navigation, and HTRW are expected. There are no foreseen cumulative effects that would have a significant negative impact on human health or the environment. Therefore, an environmental impact statement is not warranted. Pending the results of the public review of this document, a FONSI would be prepared, if warranted.

9.0 PREPARED BY

This draft EA and the associated draft FONSI were prepared by Mike Thron, biologist, with cultural resources input provided by Pam Lieb, archaeologist. The address of the preparer is: U.S. Army Corps of Engineers, Memphis District, Environmental Compliance Branch, Regional Planning and Environmental Division South, Attn: Mike Thron, 167 North Main St., B202, Memphis, TN 38103-1894.

10.0 REFERENCES

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Sugar Creek Bank Failure Repair Near MS River Mile 768.9L AHP – Sept. 2023 U.S. Army Corps of Engineers Memphis District (Endangered Species Act, section 7(a)(1)). U.S. Army Corps of Engineers, Mississippi Valley Division. Vicksburg, Mississippi.

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APPENDIX

Endangered Species Act Documentation

Water Quality Certification - General Aquatic Resources Alteration Permit



United States Department of the Interior

FISH AND WILDLIFE SERVICE Tennessee Ecological Services Field Office 446 Neal Street Cookeville, TN 38501-4027 Phone: (931) 528-6481 Fax: (931) 528-7075



In Reply Refer To: Project Code: 2023-0110837 Project Name: Sugar Creek Bank Failure Repair August 16, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/whatwe-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office 446 Neal Street Cookeville, TN 38501-4027 (931) 528-6481

PROJECT SUMMARY

Project Code:	2023-0110837
Project Name:	Sugar Creek Bank Failure Repair
Project Type:	Shoreline Stabilization
Project Description:	During 2022, over 15 vertical feet of scour occurred along the west bank of the mouth of Sugar Creek threatening the integrity of the existing revetment along the adjacent reach of the Mississippi River. The proposed work will consist of placing approximately 4,800 tons of bank paving using Graded Stone C (400-lb max stone size) for approximately 300 feet along the west bank of Sugar Creek. This stone will overlap the existing revetment by 20 feet and 280 feet will be placed on a previously unprotected bank of Sugar Creek. No earthwork is required. No established trees will be removed or modified by the stone placement
	stone delivered by barge and placed by a barge-mounted trackhoe during
	higher river stages for adequate floatation.

Project Location:

The approximate location of the project can be viewed in Google Maps: <u>https://</u>www.google.com/maps/@35.514127650000006,-89.93878292090758,14z



Counties: Tipton County, Tennessee

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/10515</u>	Proposed Endangered
REPTILES NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/4658</u>	Proposed Threatened
INSECTS NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The Migratory Birds Treaty Act of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.
- 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9679</u>	Breeds elsewhere

NAME	BREEDING SEASON
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (**■**)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <u>https://www.fws.gov/program/migratory-birds/species</u>
- Measures for avoiding and minimizing impacts to birds <u>https://www.fws.gov/library/</u> <u>collections/avoiding-and-minimizing-incidental-take-migratory-birds</u>
- Nationwide conservation measures for birds <u>https://www.fws.gov/sites/default/files/</u> <u>documents/nationwide-standard-conservation-measures.pdf</u>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

<u>Nationwide Conservation Measures</u> describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in

the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. <u>Additional measures</u> or <u>permits</u> may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern</u> (<u>BCC</u>) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian</u> <u>Knowledge Network (AKN)</u>. The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>Rapid Avian Information</u> <u>Locator (RAIL) Tool</u>.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey, banding, and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the <u>RAIL Tool</u> and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the <u>Northeast Ocean Data Portal</u>. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the <u>NOAA NCCOS Integrative Statistical</u> <u>Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic</u> <u>Outer Continental Shelf</u> project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

• <u>PFO1A</u>

RIVERINE

• <u>R2UBH</u>

IPAC USER CONTACT INFORMATION

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- Name: John Thron
- Address: 167 North Main Street, RM B-202
- City: Memphis
- State: TN
- Zip: 38103-1894
- Email john.m.thron@usace.army.mil
- Phone: 9015440708



United States Department of the Interior

FISH AND WILDLIFE SERVICE Tennessee Ecological Services Field Office 446 Neal Street Cookeville, TN 38501-4027 Phone: (931) 528-6481 Fax: (931) 528-7075



In Reply Refer To: Project code: 2023-0110837 Project Name: Sugar Creek Bank Failure Repair August 16, 2023

Federal Action Agency (if applicable): Department of Defense

Subject: Record of project representative's no effect determination for 'Sugar Creek Bank Failure Repair'

Dear John Thron:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on August 16, 2023, for 'Sugar Creek Bank Failure Repair' (here forward, Project). This project has been assigned Project Code 2023-0110837 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. *Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.*

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed

action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Alligator Snapping Turtle Macrochelys temminckii Proposed Threatened
- Monarch Butterfly Danaus plexippus Candidate
- Tricolored Bat Perimyotis subflavus Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of "No Effect" on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Tennessee Ecological Services Field Office and reference Project Code 2023-0110837 associated with this Project.

You provided to IPaC the following name and description for the subject Action.

1. Name

Sugar Creek Bank Failure Repair

2. Description

The following description was provided for the project 'Sugar Creek Bank Failure Repair':

During 2022, over 15 vertical feet of scour occurred along the west bank of the mouth of Sugar Creek threatening the integrity of the existing revetment along the adjacent reach of the Mississippi River. The proposed work will consist of placing approximately 4,800 tons of bank paving using Graded Stone C (400-lb max stone size) for approximately 300 feet along the west bank of Sugar Creek. This stone will overlap the existing revetment by 20 feet and 280 feet will be placed on a previously unprotected bank of Sugar Creek. No earthwork is required. No established trees will be removed or modified by the stone placement contractor. The work will be performed by river-based equipment, with stone delivered by barge and placed by a barge-mounted trackhoe during higher river stages for adequate floatation.

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@35.514127650000006,-89.93878292090758,14z</u>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats <u>are</u> likely to be present in the action area, answer "NO" and continue through the key.

Do you want to make a no effect determination?

Yes

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

- Agency: Department of Defense
- Name: John Thron
- Address: 167 North Main Street, RM B-202
- City: Memphis
- State: TN
- Zip: 38103-1894
- Email john.m.thron@usace.army.mil
- Phone: 9015440708



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES

William R. Snodgrass - Tennessee Tower 312 Rosa L. Parks Avenue, 11th Floor Nashville, Tennessee 37243-1102

ARAP Tracking No. NR2305.036

Notice of Coverage (NOC) under the Aquatic Resource Alteration General Permit for Bank Armoring and Vegetative Stabilization

Under authority of the Tennessee Water Quality Control Act of 1977 (TWQCA, §§ T.C.A. 69-3-101 <u>et seq</u>.) the Division of Water Resources has determined the activity described below would not violate applicable water quality standards.

This activity is governed by the General Permit for Bank Armoring and Vegetative Stabilization issued pursuant to the TWQCA. The work must be accomplished in conformance with accepted plans, specifications, data and other information submitted in support of application NR2305.036 and the terms and conditions set forth in the general permit.

Permittee name:	U.S. Army Corps of Engineers Sugar Creek		
Authorized work:	bank armoring of 300 linear feet of Sugar Creek		
Location:	10325 Richardson Landing Road, Drummonds, TN 38023, Tipton County		
Latitude:	35.514314		
Longitude:	-89.938594		
Waterbody name:	Sugar Creek		
Effective date:	09/07/2023		
Expiration date:	04/07/2025		

This does not preclude requirements of other federal, state or local laws. In particular, work shall not commence until the applicant has received the federal section 404 permit from the U. S. Army Corps of Engineers, a section 26a permit from the Tennessee Valley Authority or authorization under a Tennessee NPDES Storm Water Construction Permit where necessary. This permit may also serve as a federal section 401 Water Quality Certification (pursuant to 33 U.S.C. §1341) since the planned activity was reviewed and the division has reasonable assurance that the activity will be conducted in a manner that will not violate applicable water quality standards (T.C.A. §§ 69-3-101 et seq. or provisions of sections 301, 302, 303, 306 or 307 of The Clean Water Act). The 401 Water Quality Certification Justifications and Citations related to the procedural requirements of §121.7(d) can be found here. A paper copy of the certifications and justifications can also be obtained by contacting *Water.Permits@tn.gov* or calling (615) 532-0359.

The state of Tennessee may modify, suspend or revoke this authorization should the state determine that the activity results in more than an insignificant degradation of applicable water quality standards or violation of the TWQCA. Failure to comply with permit terms may result in penalties in accordance with T.C.A. §69-3-115.